IFC Mobile Money Study 2011

NIGERIA

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
ATM	automated teller machine
B2B	business to business
BRT-lite	Bus Rapid Transit
COPE	Care of the People
e-money	electronic money
e-payment	electronic payment
EFInA	Enhancing Financial Information & Access
G2P	government to person
GDP	gross domestic product
GPRS	general packet radio service
IFC	International Finance Corporation
KYC	know-your-customer
LBA	licensed buying agent
LSM	living standard measure
m-banking	mobile banking
m-money	mobile money
m-payment	mobile payment
MFI	microfinance institution
MNO	mobile network operator
NAPEP	National Poverty Eradication Program
NFC	near-field communication
NYSC	National Youth Services Corps
P2P	person to person
POS	point of sale
SIM	subscriber identity module
SMS	short message service
STK	SIM Toolkit
USSD	unstructured supplementary services data

The average exchange rate for the year 2010 of 150.30 Nigerian naira/1 U.S. dollar is used throughout.

Summary

Nigeria is a highly fragmented economy with no national retail network. The Central Bank of Nigeria has taken a cautious attitude toward the development of mobile money (m-money). In late 2010, the Central Bank licensed 16 new m-money service providers, a positive and welcome step for m-money in Nigeria, a country with huge unrealized m-money potential. One consequence of the Central Bank's cautious attitude is that a less permissive environment for m-money has been created, with mobile network operators (MNOs) not allowed to be the lead initiator in m-money projects. Instead, MNOs must partner with financial institutions. Most MNOs see m-money as a mechanism to increase brand loyalty through an m-money value proposition and therefore prefer to be seen as leading m-money initiatives. However, recent experience in other countries (e.g., Pakistan) with similar m-money regulatory environments has shown promise. The primary impact is likely to be related to the speed of initial roll-out, as players determine their most feasible routes to market. In this context, the structure of partnerships between MNOs and financial institutions will be of interest in the near term.

Another major theme is consumer distrust of both the mobile operators and the financial sector. The financial sector is still recovering from the 2009 near-collapse of five banks, which the Central Bank of Nigeria had to bail out and intervene to support microfinance institutions (*Economist* 2009). Further, the communications infrastructure between bank branches—including automated teller machines (ATMs)—is perceived to be unreliable (*Daily Independent* 2010). The combination of these factors contributes to a general level of distrust for existing financial services among the population.

Demand Estimates

Nigeria is at stage similar to that of Kenya at the launch of M-PESA in 2007. The majority of the population has limited financial access. There is a huge demand for relatively simple services such as person-to-person (P2P) transfers. The small size of the formal sector means that there is unmet demand among informal employees for a simple and secure way to transfer wages.

Other forms of payment demand, such as public transport and bill payments, are in a nascent form outside of Lagos and Abuja.

The business-to-business (B2B) payment sector is underdeveloped, but there may be significant opportunities for companies such as Coca-Cola that have a wide delivery network and are reliant upon check and cash payments from small stores.

eTranzact Business Model

The Nigerian m-money market is challenging. The economy is highly fragmented, and there is a general distrust of both the mobile and financial sectors among the populace.

Despite these limitations, with the recent licensing of new service providers, Nigeria has several characteristics that could foster the rapid adoption of m-money. A major player is eTranzact, a private payment switch that provides back-office processing for electronic transfers through a variety of channels such as card, Web, and mobile payments. eTranzact is neither an MNO nor a bank, but a real-time payments system that perceives mobile payments (m-payments) as a growth area.

With 16 newly licensed players, eTranzact's future role must be one of partnership. It must facilitate the development of an m-money strategy by partnering with organizations in anticipation of increased competition. eTranzact recognizes that it does not have direct retail experience with consumers. As a result, it is moving quickly to sign up "super agents" to operate networks of subagents. To be successful in m-money, eTranzact has to build the m-money ecosystem and partner with organizations that have strengths outside of its core competency.

Opportunities

Several demand drivers are worth noting, including a large remittance market that is attracting more competition. The Central Bank of Nigeria has banned exclusivity agreements between Nigerian banks and international money transfer operators such as Western Union, leading to an increase in the number of remittance providers and a decrease in charges. Even though the exclusivity agreements have ended, the market share for Western Union and MoneyGram is still high at 82 percent.

Poor financial infrastructure means that there is unmet demand for basic financial services. Banks lack the capability or incentive to rapidly expand their services to the base of the pyramid.

Wide-scale mobile penetration means there is a base from which an m-money service like Kenya's M-PESA could be launched.

In addition to the key drivers, there are several demand factors that would allow for rapid scaling of m-money, including

- strong demand for P2P transfers;
- a significant opportunity for B2B m-payments, which are currently mostly by cash or check; and
- additional services, such as P2P transfers and bill payments, offered to government employees.

One moderating influence on the roll-out of m-money in Nigeria is the regulatory environment, which has constrained rapid development of m-money to the extent that Nigeria is the only West African country without any operational m-money initiatives. The Central Bank has issued several m-money licenses, with several scheduled for operation in the first quarter of 2011. The issuing of m-money licenses is a positive step forward, but has not yet resolved the regulatory issues facing m-money service providers. There is now a discussion between the Nigerian Communications Commission and the Central Bank over who has regulatory authority over m-money service providers, with the Central Bank arguing that there should be joint regulatory oversight and the commission arguing that m-money regulation is the preserve of the Central Bank.

Table S.1 provides a summary of the various m-money opportunities in Nigeria.

Table S.1 Mobile Money Opportunities in Nigeria

Potential market	Assessment	Description	Challenges and obstacles	Potential transactions/ month
Bill payments (utilities)	●	▪ Majority of people pay bills by cash directly or through bank teller, but over 15% of m-banking users use mobile phone to pay ▪ Current bill payment system is small ▪ Low bank account penetration ▪ High mobile phone penetration ▪ Little competition from financial sector	▪ Few consumers use mobile phone to pay bills ▪ Poor infrastructure ▪ Poor regulatory environment ▪ Low consumer trust in financial and mobile sectors ▪ Demand survey shows that over 15% of Nigerians use prepaid cards for bill payment convenience—potential competition	21,650,000
Person-to-person (P2P) transfers	▲	▪ Large rural population ▪ High use of informal channels ▪ Almost 80% of nonusers and slightly over 50% of users still use bank tellers to transfer money	▪ Need to overcome user perceptions of bank/MNO unreliability and trust issues ▪ Regulations are slowing m-money implementation	46,252,000
Government-to-person (G2P) payments	■	▪ Some government programs, but very small	▪ Estimating number of people who should receive payments is difficult due to lack of national ID card ▪ Poor country	40,000
Payroll (informal sector)	▲	▪ Large informal sector—employing 70% of working people—offers potentially large unmet demand for m-money	▪ Low-income people have limited ability to afford m-money	37,821,000
Public transport	■	▪ Limited opportunity ▪ Small card industry and low penetration	▪ Fragmented, limited public transport market, mainly in Lagos	10,000,000
Business-to-business (B2B) payments	▲	▪ Some opportunity for fast-moving consumer goods retailers such as Coca-Cola	▪ Fragmented market with no national retailer ▪ Popular trust of small retailers and a preference for cash	—
International remittances	▲	▪ Small number of remittances, but high value	▪ Number of multinational companies entering the sector ▪ Many people use informal methods of fund transfer	—
Credit and microfinance	▲	▪ No m-money initiatives at this stage	▪ No agent network ▪ Low credit penetration ▪ Dysfunctional microfinance bank sector ▪ Popular distrust of banks and particularly of microfinance institutions	—

Source: IFC Mobile Money Study 2011.

Note: ● = significant and unrealized opportunity for m-money: many of the preconditions for m-money exist, such as demand, supportive regulation, and an identifiable group of customers; ▲ = 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 promises of reaching the unbanked and underserved, of servicing existing banking clients, and of being a means for 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?

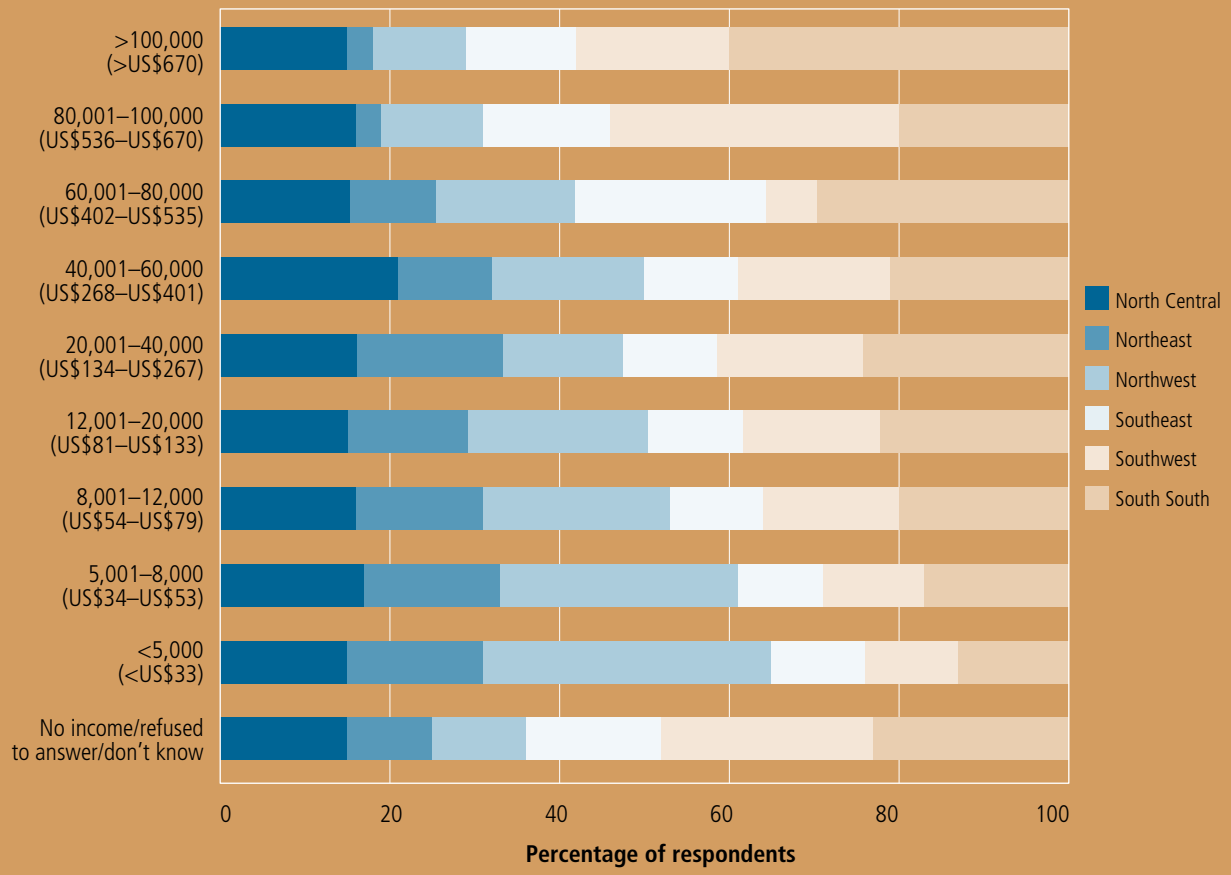
This report provides detailed information regarding the five main topics as they relate to Nigeria—business models, money flows and demand, potential user perceptions and behavior, regulation, and agent networks.

Socioeconomic Country Context

About 104 million Nigerians, or 70 percent of the population, live below the poverty line. About 48.4 percent of Nigerians live in urban centers; in other West African countries, about 31 percent of the population lives in urban centers (AFD 2009). Because of its large size, Nigeria has a diversity of regions, socioeconomic conditions, economic drivers and industries, agricultural activities, and service sectors.

As figure 1.1 indicates, 34 percent of those who earn less than ₦5,000 (about US$34) per month are from the Northwest region. In comparison, about 40 percent of those who earn above ₦100,000 (about US$670) per month are from the South South region (the largest city, Lagos, is

Figure 1.1 Personal Monthly Income by Geopolitical Zone



Source: EFInA 2008.

Note: Income amounts are in Nigerian nairas.

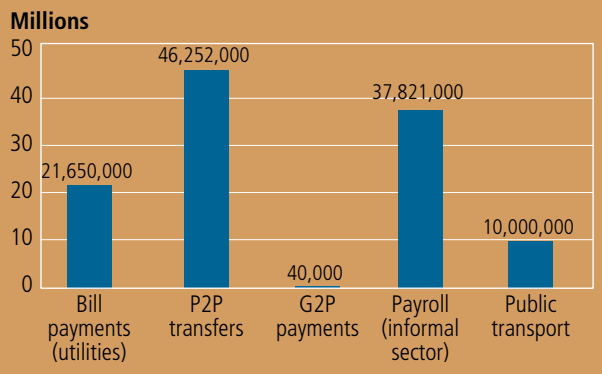
in the South South region). The average monthly income across Nigeria is around ₦8,000 (about US$54). Mirroring the wide variation in income across regions is the wide variation in infrastructure. Most of the infrastructure (e.g., telecommunications networks, bank branches, roads) is concentrated in the South South region containing Lagos, and expands to the rest of the country.

2 Demand Perspective

This chapter provides a demand perspective for m-money, both qualitatively and quantitatively. Figure 2.1 shows estimates of potential monthly volumes (not value) of transactions in key market segments that could offer m-money opportunities. However, m-money has to compete both with 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 and assessment of these market segments in terms of their opportunities and challenges.

The size of each demand market was estimated to establish the relative size of the m-money opportunity.

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



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.

Bill Payments (Utilities)

Bill payment is a burgeoning industry targeted at middle- to upper-income earners. Electronic bill payment (mainly m-banking) is largely aimed at higher-income groups. Existing bill payments include satellite TV payments (called cable TV in Nigeria) and payments for goods and services sold by merchants. The satellite TV providers—Multichoice, HiTV, and DaarSat—have a combined 760,000 household subscribers.

Utility payment is the third largest potential area for m-money, especially given the poor financial infrastructure and the limited availability of alternatives such as Internet banking, debit orders, and ATMs.

Person-to-Person Transfers

P2P transfers refer to transfers of money, via a mobile wallet, from one person to another. These money transfers might be for a range of reasons, such as between relatives or for payment for services.

Nigeria has a large diaspora. According to the World Bank, Nigeria is the largest receiver of remittances in Sub-Saharan Africa, mostly from the United Kingdom (Hernandez-Coss and Bun 2006). The value of the remittances is significant, and an increasing number of companies have started offering remittance services.

Although the value of remittances is large compared with informal P2P transfers within the domestic economy, the number of Nigerians making use of international remittances is relatively small. In a household survey conducted in 2008, the independent organization Enhancing Financial Information & Access (EFInA)[1] found that around 31 percent of the adult population said they had received money from a friend or relative from within Nigeria and 21 percent said they had sent money within Nigeria (table 2.2). In comparison, 4 percent stated that they had received money from a friend or relative living outside the country, and 2 percent said they had sent money outside the country (EFInA 2008).

Of the people who do transfer money within Nigeria, 57 percent used informal means and 63 percent used informal means to receive money. In comparison, 43 percent used formal mechanisms to send money, and 33 percent used formal mechanisms to receive money.

[1] EFInA is an independent, professional, nonprofit organization established in late 2007 to promote access to financial services for the unbanked and financial sector development in Nigeria. See http://www.efina.org.ng/.

Table 2.2 Percentage of Respondents Reporting Various Means of Remittance Transfer

	Domestic		International	
Means of transfer	Sent	Received	Sent	Received
Friend/family member	57	63	15	25
Bank	43	33	45	37
Check	4	3	6	4
Money transfer organization (e.g., Western Union)	1	1	15	30
Third party (e.g., taxi or bus driver)	10	10	3	4
Electronic bank transfer	1	1	2	1
Electronic recharge card	3	2	n.a.	n.a.

Source: IFC Mobile Money Study 2011.

Note: Totals exceed 100 percent because multiple responses were allowed; n.a. = not applicable.

Banks have concentrated on promoting ATMs as a mechanism to transfer money, but problems involving unreliable infrastructure such as electricity and mobile networks—combined with declining usage of ATMs, according to data from InterSwitch Limited[2]—is an indication that current financial services are not meeting the demand for P2P money transfers. (See "Status of Financial Infrastructure" in chapter 3 for an in-depth discussion of the financial infrastructure.)

Government-to-Person Payments

G2P payments are payments from government to citizens such as social security and conditional cash transfers.

Social Welfare Payments

G2P payments are not a significant opportunity because Nigeria is a limited social welfare state with only three programs:

- **National Poverty Eradication Program (NAPEP) and its COPE (Care of the People) Program.** COPE is a conditional cash transfer scheme designed by NAPEP for the poorest of the poor. It serves 20,000 people. Its main challenge is determining how to send money to qualified households. It is difficult to get accurate figures or payment frequency. Given the size of Nigeria (140 million people), this is a very small program.
- **Nigeria Delta Disarmament Program.** This program provides monthly payments from the government of Nigeria to militants in the Delta area of Nigeria as part of a deal to reimburse them for oil revenues and as part of the peace settlement reached in June 2009. There is no official number of participants; estimates range from 8,000 to 20,000.

  The biggest challenge is the identification of valid claims. Since not all Nigerians have been issued a national ID card,[3] a person is qualified for payments—approximately US$430 per month—as long as they have completed a government form and provided a phone number. Another major challenge is getting the money to each recipient, given the poor status of financial infrastructure.
- **National Youth Services Corps (NYSC).** The NYSC program is a one-year mandatory service for graduates. It is unclear how many students are participants (this is one of the challenges of the program), and payments are irregular, nonexistent, or for incorrect amounts. In addition, collection occurs only at bank branches, and many members work substantial distances from these branches. This is another m-money opportunity (although small), but the key problem is the lack of an agent network to handle cash-in and cash-out.

  The total number of beneficiaries is around 40,000. The programs are plagued by inefficiencies and the difficulty of identifying the correct beneficiary. This is potentially an opportunity for m-money, although the difficulty of identifying the correct beneficiaries has proven to be a major obstacle. Also, the number of beneficiaries is tiny in comparison with other countries in this study, such as Brazil, where the number of G2P transactions per year is around 200 million, compared with potentially 480,000 in Nigeria.

Government Salaries

The Office of the Accountant General serves as the chief accounting officer for the receipts and payments of the federal government of Nigeria. Part of its mandate is to move the civil service to an electronic payment system. As a result, it has started a program to pay all government employees' salaries electronically. To date, it has converted all 12,000 of its own staff to e-payments, has conducted a successful pilot in five ministries, and is converting another 21 ministries. Civil servants

[2] InterSwitch is an electronic transaction switching and payment processing company based in Nigeria. See http://www.interswitchng.com/home.php.

[3] In the EFInA survey, 39 percent of respondents stated that they have an ID card.

might represent a potential demand market for m-money services, particularly outside of urban areas.

Payroll (Informal Sector) Payments

Given the large informal sector—around 70 percent of working people are employed in the informal sector—there is potentially a large unmet demand for m-money.

Public Transport

Public transport is not as large an opportunity as in other countries because most transport is provided by the private sector, which is unregulated and highly fragmented. The estimate for public transport is limited to Lagos for a number of reasons:

- Data were only available for Lagos.
- It is Nigeria's largest city.
- It has the largest public transport system in Nigeria.
- The Bus Rapid Transit system (BRT-lite) in Lagos is growing rapidly and carries an increasingly large number of passengers.
- The system of payment is mainly cash, paid prior to boarding the bus.

The total number of trips using BRT-lite per month is estimated at about 10 million in Lagos.

Other

Business-to-Business or Business-to-Employees Transfers

For B2B payments in Nigeria (as in Thailand), Coca-Cola was used as a proxy to estimate the potential for m-payments. Coca-Cola is one of the largest fast-moving consumer goods companies in the world with significant operations in Nigeria. It delivers to a large number of small businesses on a regular basis, and there are significant potential benefits to providing a more cost-effective and efficient way of receiving payment.

Of the countries included in the analysis, Nigeria has the largest network of Coca-Cola outlets that justify a delivery by truck. There are two probable explanations for this: first, Nigeria has the largest population (149 million, compared with 66 million in Thailand and 21 million in Sri Lanka). Second, Nigeria has no national retail chains (such as a Walmart, or even Nakumatt in Kenya), which means that there are few economies of scale for a distributor. Therefore, more deliveries are necessary because there are multiple small retailers instead of a few large retailers.

In Nigeria, the fact that 65–75 percent of retailers pay by check is indicative of the potential demand for a more efficient and secure system such as m-money (table 2.3).

Table 2.3 Stores' Form of Payment for Coca-Cola Deliveries

Cash	Check
25–35%	65–75%
Number of outlets = 220,000	

Source: IFC Mobile Money Study 2011.

Box. 2.1 details a potential retail opportunity for m-payments.

Insurance, Microfinance, and Credit

Financial services may have potential because the latest developments of M-PESA in Kenya show a recent migration from P2P payments to financial microinsurance, microfinance, and conventional small loans, as the distribution potential of m-money is realized by the key players in these three market segments.

Insurance

Only 2 percent of the Nigerian adult population has access to insurance products. According to EFInA, there is hardly any awareness about insurance, with 48 percent of the adult population saying they had never heard of the word "insurance," and 17 percent indicating they had heard of it but did not understand what it means (EFInA 2008).

Box 2.1 Olam Nigeria

Olam International is a large international trader and supply chain manager of agricultural products with a number of offices around the world including Nigeria. It exports raw cashew nuts, cocoa, cotton, sesame, timber, and shea nuts and imports primarily rice and sugar. Olam has a business unit (incorporating a warehouse) in each of Nigeria's states, and it works with a network of about 4,500 independent licensed buying agents (LBAs) all around the country. The frequency of doing business with LBAs depends on the type of crop (how often it is harvested), as well as the catchment area of the LBA (how many farmers the LBA visits).

LBAs can be seen as partners in the business because Olam has built a relationship with each of them over a period of time. The length of the relationship, and the success of previous contracts, including their time taken to pay back loans and their speed of delivery, are major criteria for working with an LBA.

Olam's business model is cash based because cash is the only accepted medium of exchange with farmers and because LBAs do not have access to bank branches in the farm areas.

Even more important, LBAs do not have sufficient cash flow to purchase crops directly from farmers. Olam therefore advances LBAs cash at no interest to purchase a quantity of a particular crop. The LBA pays the farmer immediately, and the farmer delivers the crop to an Olam regional warehouse. An LBA earns commission by getting the farmer to sell at a lower price than the Olam cash advance. Over time, the assumption would be that the LBAs would build a capital base and be able to fund their own business. The lack of electronic records, combined with the fact that LBAs are independent, has meant that Olam does not know the cash-flow status of any LBA; thus the existing system continues. M-money could provide a more reliable, cost-effective, and faster solution than cash.

Microfinance

The microfinance sector is very small in Nigeria, even though there are 901 licensed microfinance banks.[4] For example, 46 percent of the Nigerian population had not heard of a microfinance institution (MFI). MFIs have generally chosen strategies that link the roll-out of their branches to commercial banks. In addition, some regulatory restrictions are imposed by the Central Bank of Nigeria. The most important are geographic restrictions whereby MFIs can only move into a neighboring state from a state where they have branches. This restriction has encouraged MFIs to open in the more populous and wealthy states, remaining near urban centers.

Credit

Formal credit through banks is a nascent industry. Only about 7 percent of the population has a formal loan (EFInA 2008). The two biggest reasons for taking a loan, given by 53 percent of respondents, were to start or expand a business (EFInA 2008).

[4] As of 2010, according to the Central Bank of Nigeria (www.cenbank.org/supervision/Inst-MF.asp).

3 Parameters of the Mobile Money Ecosystem

Nigeria's m-money potential was analyzed using a number of parameters that affect the roll-out of m-money. These parameters were identified through a literature review and refined during field visits. Table 3.1 (next page) provides an overview of the parameters selected.

Additional markets such as credit and microcredit, savings, and international remittances were investigated, but data were not available to add the quantitative dimension. Note that the data required were for the monthly volume (not value) of transactions. In many instances, it has been difficult to source the volume of transactions.

All parameters are issues that firms entering the m-money space must either utilize to their advantage or overcome. In evaluating a country's readiness for m-money, these parameters provide a comprehensive picture of the m-money environment. This, in turn, provides the kind of insight necessary to identify practical recommendations for how m-money should be implemented.

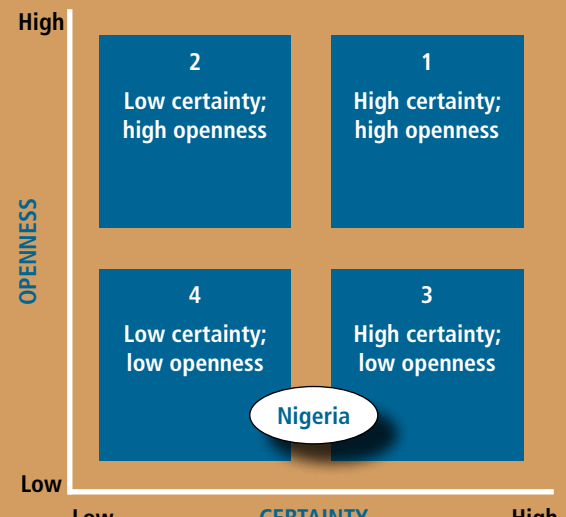
Although each parameter was analyzed, we concentrated on the three major parameters that have the most impact on m-money: regulation, existing financial access, and existing mobile access and coverage.

Regulation

A modified version of Porteous's regulatory environment model was used to position each country's regulatory environment along two axes: openness and certainty (Porteous 2006). To determine openness, one asks: Does the country's policy, legal, and regulatory environment encourage new entrants and new approaches (i.e., innovation)? To determine certainty, one asks: Does the country's policy, legal, and regulatory environment provide certainty that there will not be arbitrary changes to a firm's prospects?

In figure 3.1, Position 1—high certainty and high openness—is the best position for innovation to occur. M-money development may occur in

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



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

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.

countries with low certainty if they have a strong motivation and an appetite for risk. Innovation is less likely in a country with low openness.

The Central Bank of Nigeria adopted the Regulatory Framework for Mobile Payments Services in 2009 (CBN 2009c). The framework lists who is eligible to apply for an m-money license, the role of agents, technical requirements of m-money, and the know-your-customer (KYC) requirements for individuals applying for a bank account, among other issues. As such, it is a highly detailed specification of the form that m-money is to take in Nigeria. Moreover, the Central Bank issued 16 new licenses in November 2010, although MNOs

are not allowed to be primary license holders. With such a clear regulatory framework, it would be expected that Nigeria would fall into either the "high certainty and low openness" position or the "high certainty and high openness" position. The lack of any *operational* m-money licenses at the time of this study, however, puts Nigeria between the "high certainty and low openness" and "low certainty and low openness categories" in figure 3.1.

Cautious Approach

The Central Bank of Nigeria has been open about the fact that the m-money environment is complex and fast changing. As a result, it is adopting a cautious approach to the development of m-money businesses. For example, as of mid-February 2010, the Central Bank had not decided on criteria to select m-money licensees. These criteria were to be discussed at the end of February, and the Central Bank anticipated that licenses would be granted by the end of June 2010, but they were not granted until November. The Central Bank has also adopted a cautious attitude because m-money represents the intersection of financial and telecommunications regulation. The Central Bank is collaborating with the Nigerian Communications Commission to set up a working group to analyze the role of mobile operators in m-money.

Central Bank of Nigeria's Objectives

The Central Bank pointed out that financial inclusion is a key objective of the 2009 regulatory framework. However, it wants to see a business model that includes mechanisms beyond P2P payments for financial inclusion.

The purpose of the 2009 Regulatory Framework for Mobile Payments is to

- clarify the roles and duties of the actors in the m-money sector,
- move Nigeria toward a cashless society, and
- specify minimum technical and business requirements for participants in the m-payments services industry.

Mobile Money Models

The most interesting aspect of the regulation is who is allowed to be licensed by the Central Bank. A mobile company may only be a partner to a financial institution and may not be the dominant partner in any consortium. The exclusion of mobile operators from being the lead initiator is complex because of the experience MNOs have in operating agent networks.

The Central Bank of Nigeria created three models for m-payment:

- **Bank focused.** A financial institution is the lead initiator—e.g., Intercontinental Bank.
- **Bank led.** A financial institution and/or a consortium is the lead initiator. A bank must take a lead role within a consortium of m-money providers.
- **Nonbank led.** A corporation is the lead initiator—e.g., eTranzact, MoneyBox Africa, or Eartholeum. A bank would be needed as a participant in the consortium (at the least to provide the clearing account), but might not have a role in the daily operations of the consortium.

The Central Bank of Nigeria had two main considerations in approving these models:

- The domination of the mobile sector by Safaricom in Kenya gave the Central Bank concerns about companies monopolizing Nigeria's m-money sector.
- Because the Nigerian financial sector went through a series of upheavals over the past two years, the Central Bank is concerned that mobile operators will conflate airtime with cash and not provide the security to deposit holders that they would find in a regulated bank environment, where all deposits (up to a maximum limit) are guaranteed by the Nigeria Deposit Insurance Corporation.

Know-Your-Customer Requirements

Nigeria has adopted lower KYC requirements for unbanked or semibanked people. The

requirements provide for an incremental KYC system as shown in table 3.2.

Agents

The 2009 regulatory framework defines the role of agents. Agents are allowed to fulfill a number of services, including enrolling customers, accepting deposits, and issuing cash withdrawals/cash-outs (CBN 2009c).

There are several other responsibilities of the bank or scheme provider. One of the notable requirements is that the bank or scheme provider must maintain an online link with the agent (it is not clear if this is to be a periodic service or 24/7). The bank or scheme provider must also be able to monitor the agent's cash in hand at all "reasonable" periods and be able to clear cash that exceeds the ₦100,000 (about US$670) limit (CBN 2009c, Section 5.2.2.2). It is a positive feature of the regulatory framework that responsibility for excess cash in hand lies with the bank or scheme provider and not the agent (CBN 2009c, Section 5.2.1.6). This feature implies that the bank or scheme provider has to set up a collection system for the excess cash. In some countries, the m-money scheme provider operates a cash collection system, but this service is not mandated by the central bank. Often centrally located agents or "super agents" collect the cash from other agents.

The exclusion of MNOs from leading an m-money consortium means that one of the few parties with experience in running agent networks in Nigeria is unlikely to participate. The implication of the regulations is that the Central Bank wants an entirely new agent network set-up.

Fraud

The high level of ATM fraud and network unreliability in Nigeria have been of concern to the Central Bank. To address these issues, it has recommended the creation of a help desk, the resolution of customer complaints within 72 hours, and the publication of the names and contact details of bank staff who can resolve the issues.

National ID System

There is a link between a unique identity card and financial inclusion. For example, in India, the rollout of a national ID card is expected to bring a range of banking services within reach of millions of unbanked people (Leigh 2010). As customers move from being unbanked to banked, they are likely to want other financial products and will then be subject to greater KYC requirements. Having a national ID system makes the process of accessing additional financial products easier.

Table 3.3 shows the types of identification documents available in Nigeria. An initiative to roll out a national ID card in Nigeria has not yet reached everyone: only 39 percent of the population has an ID card (48 percent in urban and 35 percent in rural areas).

Table 3.2 Nigeria's Know-Your-Customer Requirements

Banking status	KYC/customer due diligence level	Verification requirement	M-payment transaction limit
Unbanked	Least KYC	Name and phone number	Maximum transaction limit of ₦3,000 (US$20) and daily limit of ₦30,000 (US$201)
Semibanked[a]	Partial KYC	Name, phone number, physical address	Maximum transaction limit of ₦10,000 (US$67) and daily limit of ₦100,000 (US$671)
Fully banked	Full KYC	Name, phone number, physical address, physical check	Maximum transaction limit of ₦100,000 (US$671) and daily limit of ₦1,000,000 (US$6,705)

Sources: CBN 2009a, 2009c.

a. It is unclear precisely how the term "semibanked" is defined, but it usually means people with access to partial banking services.

Table 3.3 Distribution of Types of Identification Documents across Nigeria's Population

Document	Held by % of population
National ID	39
Electricity bill	14
Passport	14
Land ownership	13
Bank statement	13
House ownership	12
Pay slip	9
Driver's license	7
Local government area rates & tax inv.	6
Tax return	5
Other	12

Source: EFInA 2008.

The number of Nigerians with another form of identification, such as proof of residence, is much lower: 14 percent are able to show an electricity bill. The introduction of the incremental KYC requirements contained in the 2009 regulations is aimed at addressing the lack of a national ID card.

Interoperability

Another feature of the 2009 regulatory framework is its requirement for interoperability. In most other jurisdictions, interoperability might occur at the switch level; however, the regulatory framework requires interoperability at all levels—scheme provider or bank, switch, and payment channel (CBN 2009c, Section 4.1.4). While interoperability is desirable, this requirement adds a level of cost to any m-money scheme at its inception stage. The requirement adds an upfront cost (and therefore risk) to operators entering a new and relatively innovative market where first-mover advantage is important, and the service is often used as a market differentiator in an existing service offering. Waiting to require interoperability until after service providers and banks have built up a customer base may result in faster m-money development.

Conclusion

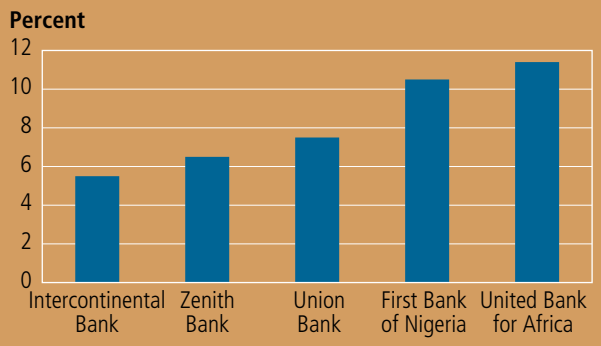
The m-money environment in Nigeria is rapidly opening up, with multiple new service providers launching in 2011. The Central Bank's cautious approach has created a less permissive environment than in Kenya. One consequence of this approach is that Nigeria is lagging behind its neighbors in having an operational group of m-money initiatives. This year will be critical in seeing how quickly service providers are able to take advantage of the large opportunities for m-money.

Existing Financial Access

Status of Financial Infrastructure

Nigeria has a poor financial infrastructure. It has a small number of bank branches, with the majority situated around the main cities such as Lagos and Abuja. There are 5,407 bank branches across the country (CBN 2009b). Figure 3.2 shows that there are a number of widespread major banks, with none being dominant.

Figure 3.2 Nigerian Banks' Branch Market Share, 2009



Sources: Selected banks' Web sites.

Automated Teller Machines

In terms of electronic payments, the primary focus of the banks has been the roll-out of ATMs.

However, the number of ATMs connected to the InterSwitch network decreased from 9,937 in 2008 to 9,907 in 2009.[1] While banks identified financial infrastructure as a priority, Nigerian ATMs have several challenges:

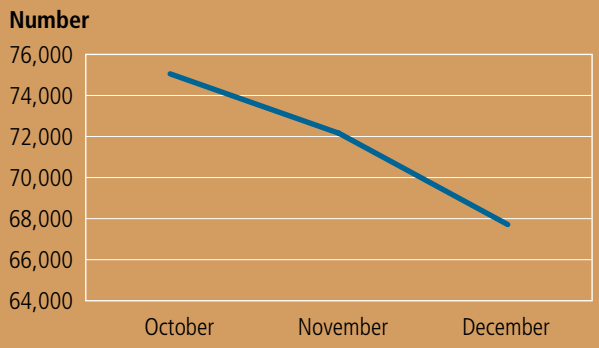
- Many have a limited capacity for cash, since the largest note is ₦1,000 (about US$7).
- Historically, ATMs were regularly jammed because of poor-quality bank notes, although this problem was addressed by the release of better-quality polymer notes in 2009 (Isern et al. 2009).
- Support services such as the electricity supply and the mobile network are unreliable.
- ATMs have a high physical cost, including the cost of a generator to provide electricity, and data costs.

Point-of-Sale Devices

The number of point-of-sale (POS) terminals deployed in Nigeria as of December 2009 was 11,124, with only 23 percent actively making transactions. The low number of active POS terminals (showing transaction activity in a three-month period) is indicative of some of the challenges of rolling out POS devices—unreliable communications networks, low debit and credit card penetration, high direct fees for merchants (the costs of cash are rarely quantified by small merchants), and low consumer education. All of these problems explain why the volume of transactions on the POS network is small and declining (figure 3.3).

The banking sector understands the challenges facing the roll-out of POS devices. It has formed the E-Payment Providers Association of Nigeria to tackle the challenges confronting deployment and use of POS devices. Its membership consists of representatives from the Central Bank, banks, the Federal Inland Revenue Service, and the national central switch; POS merchants; and other stakeholders (Vanguard 2010).

Figure 3.3 Volume of POS Transactions in Nigeria, October–December 2009



Source: InterSwitch 2009.

Internet payments are also very low, with the number of transactions in December 2009 (traditionally a busy month) reported as less than the number of transactions in October and only slightly higher than November (InterSwitch 2009).

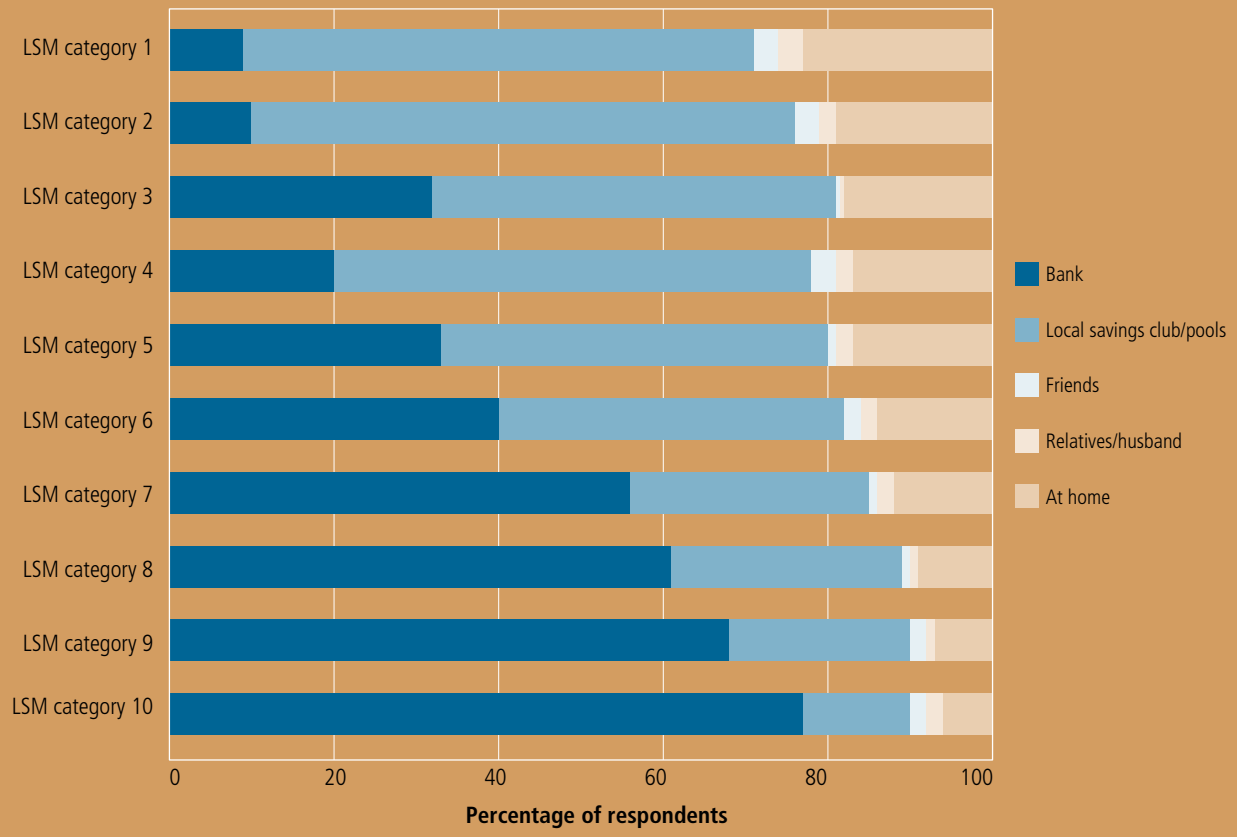
Savings

Approximately 38 percent of Nigerians save both formally and informally. The percentage of Nigerians who are saving can be broken down into formal and informal types of savings accounts. In the lower-income groups, the majority save using informal channels. As income levels increase, people make more use of formal accounts, although it is interesting to note that 21 percent of those in the highest-income group still make use of informal mechanisms such as local savings clubs, relatives, and the mattress. In figure 3.4, living standard measures (LSMs) are used to categorize responses. LSMs are segmentation tools used in consumer marketing as a wealth proxy, calculated on ownership of household goods/assets and the degree of urbanization. The LSM categories range from 1 (very poor and rural) to 10 (wealthy and urban) (EFInA 2009).

In terms of informal savings, a 2010 study by EFInA listed the types of informal savings accounts used. The five basic savings mechanisms are as follows:

[1] InterSwitch is Nigeria's largest electronic transaction switching and payment processing company by a substantial margin. See http://www.interswitchng.com/home.php.

Figure 3.4 Use of Various Savings Mechanisms by Income Group (Percentages)



Source: EFInA 2008.

- **Saving at home.**
- **Ajo Ojumo.** Savings are collected daily with the first day's payment consisting of fees. Money is paid out at the end of the month.
- **Ajo Adako.** Savings are collected among a defined group such as members of the same church. Money is paid out to a different member each time.
- **Alajeseku (cooperatives).** Business associations collect savings from and provide loans to members.
- **Ajo Egbe.** Savings are collected from groups of people with a similar interest, such as an "old girls association," and become the basis for loans.

Informal savings mechanisms enjoy a seemingly high level of popularity for several reasons:

- The banking infrastructure, such as ATMs, is perceived as unreliable.
- The banking sector, particularly the microfinance sector, has a poor reputation.
- Banks are unable to offer loans through savings accounts.
- Banks charge a fee for withdrawing and depositing small sums of money.

Existing Mobile Access and Market Situation

Competitive Landscape

Mobile access is split among three companies that control more than 96 percent of the market: MTN, Zain, and Globacom. Two other companies, EMTS and M-Tel, have licenses, but are

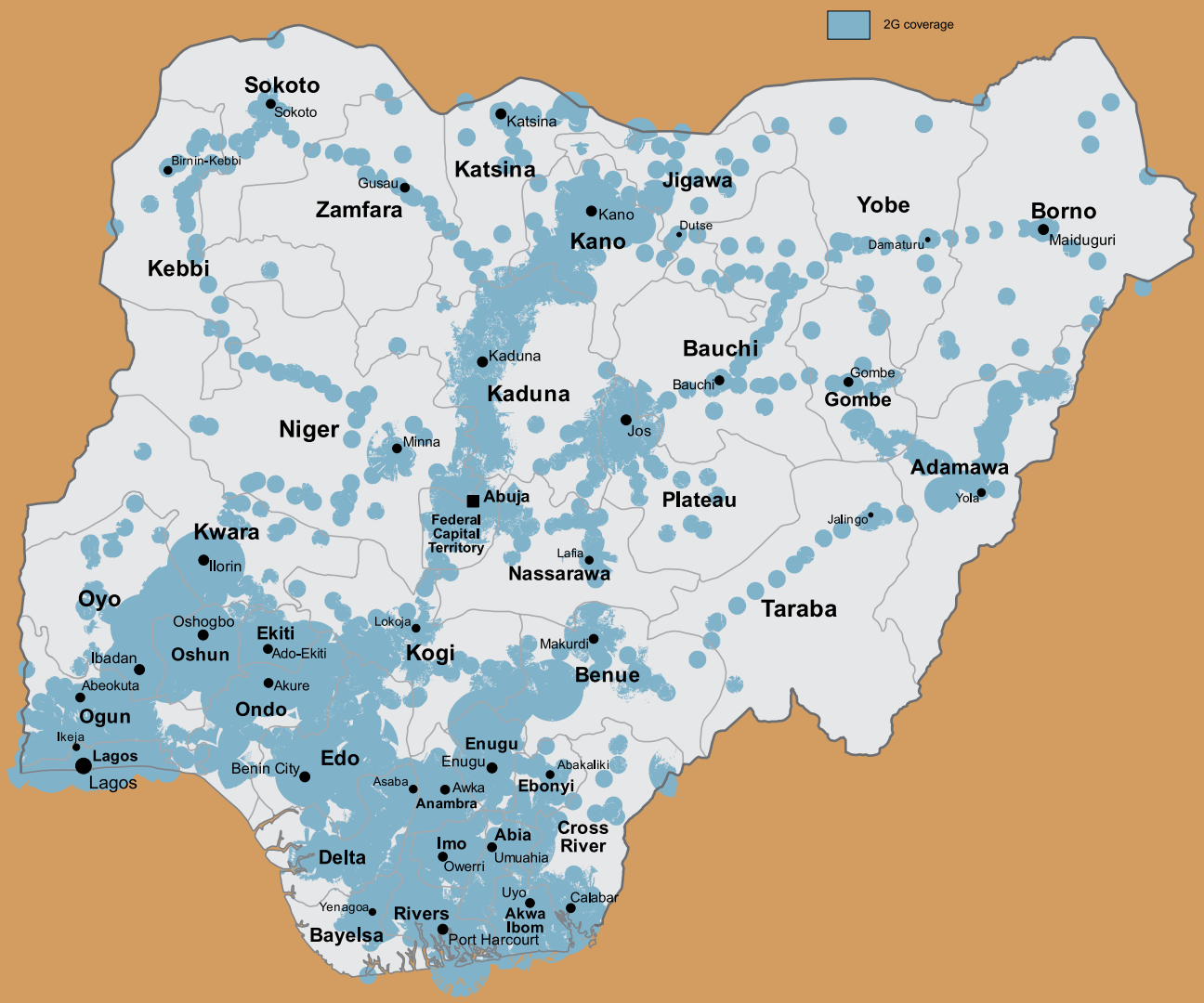
insignificant. MTN is the dominant operator with a 46 percent market share. Figure 3.5 shows that 2G geographical coverage is concentrated in the South South region; 3G access is available in the 10 largest cities. With only three major players, the market is fairly concentrated and scores 3,424 on the Herfindahl-Hirschman Index, a measure of market concentration.

3G penetration is at the early stages. For example, even with 46 percent of the market share, MTN has only 78,000 3G modems (MTN 2009). Prepaid call and short message service (SMS) charges are on a downward trend, primarily due to the reduction of interconnection fees.

MTN and Zain both have substantial m-money operations in other countries. MTN Ghana is the most recent (and relevant) example. These operations could be implemented, on very short notice, in Nigeria, if the Central Bank were to allow mobile operators to take the lead in setting up m-money operations.

Incentives for MNOs to operate m-money systems include reduction of churn among the customer base, an alternative revenue stream from net

Figure 3.5 MTN 2G Network Coverage in Nigeria



Source: © 2011 GSM Association and CollinsBartholomew Ltd.

transaction fees income and/or interest income on the float cash, and reduction of expenses by replacing scratch cards with virtual top-up.

Nevertheless, there are also several challenges to implementing m-money in Nigeria:

- Mobile banking transactions were limited to SMS and general packet radio service (GPRS) at the time of this study, but have subsequently been expanded to include unstructured supplementary services data (USSD). In addition, the mobile operators do not see an incentive to open up the subscriber identity module (SIM) Application Toolkit (STK) to other m-money providers.
- GPRS technology is perceived as highly unreliable due to frequent network outages. Some banks are working with the MNOs to inform customers when their area has been affected by an outage, but the perception is that GPRS is not reliable.
- Many nonbank-led models of m-money depend on cooperation from the mobile operators. For example, MoneyBox (the only company that claims to have an m-money license in Nigeria, though the veracity of this is disputed since the Central Bank had not issued any licenses until recently) depends on wholesale SMS charges from the mobile operators. However, the mobile operators do not have an incentive (regulatory or commercial) to provide MoneyBox with wholesale rates.

Agent Networks

Existing airtime reseller agents are often a critical challenge to the success of m-money. In Nigeria, there is no exclusive relationship between airtime agents and a mobile operator, which dilutes some of the control that MNOs might have over their agents. Agents may resell airtime for any of the mobile operators, and it would be feasible for agents to add services.

As m-money started penetrating the market, MTN began considering a declining commission fee structure for its airtime agent network and allowing mobile subscribers to top up their accounts using their mobile phones. This arrangement would reduce the incentive for airtime agents to promote m-money. MTN anticipates selling fewer scratch cards as m-money takes off. Therefore, it does not see an airtime agent network as a competitive advantage. The agent network that MTN has developed in Ghana, which sidesteps its current airtime agent network altogether, adds emphasis to this view.

Each of the MNOs interviewed had experience operating national agent networks, but MNOs have been excluded by the regulations from fully participating in an m-money initiative. It is possible that a third-party agent manager might step in, and a local third-party agent is likely to have more success because of its experience with local conditions. Any foreign company would have to learn local conditions as it implements its m-money strategy.

4 User Survey Findings

This chapter summarizes the results of the survey of a small sample of Nigerian citizens in urban and semi-urban areas who were interviewed about the use and potential of m-money. An agent survey was not conducted because there are currently no m-money agents in Nigeria.

The survey was not intended to be a statistically significant sample of m-money users and nonusers. Its purpose was to provide an overview of people's attitudes, preferences, issues, and recommendations regarding m-money services, including the following:

- Trust in mobile operators versus banks
- Willingness to pay
- Other user factors, such as local culture.

The survey consisted of polling 230 respondents in face-to-face interviews within the urban areas of Lagos and surrounding semi-urban locations. Respondents were surveyed in a variety of locations to ensure a good representation of socioeconomic backgrounds and inclusion of those who live and work at a distance from urban economic centers.

Socioeconomic Profile of Respondents

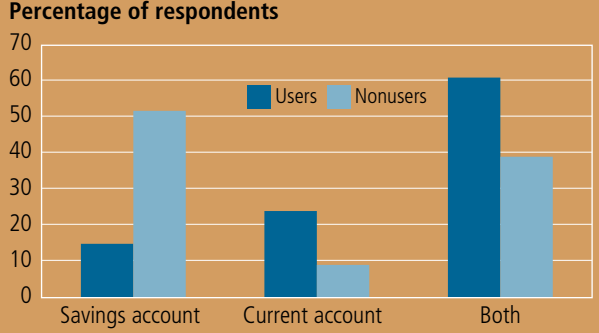
The survey in Nigeria was administered at 17 locations in and around Lagos, mostly urban and semi-urban areas, but some rural. Areas included residential areas, markets, business areas, industrial areas, and farming areas, as well as areas close to universities.

The Nigeria survey had a slightly higher number of user interviews, as it also included 23 self-administered questionnaires by employees of the Intercontinental Bank.

In Nigeria, the main application of m-money is m-banking, provided by many banks as an extension and additional access channel for people with existing bank accounts.

As shown in figure 4.1, more than 60 percent of m-banking users have both a savings account and a current account.

Figure 4.1 Types of Bank Accounts Held



Source: IFC Mobile Money Study 2011.

Interestingly, both user and nonuser respondents stated that they have a bank account, in stark contrast to the latest EFInA survey from Nigeria (EFInA 2008), which found that only 21 percent of the adult population is banked. The South South region of Nigeria, which includes Lagos, has the largest percentage of the banked population with 34 percent. The unbanked are predominantly rural, mostly female (85 percent of adult females are unbanked), and concentrated in the Northeast and Northwest regions.

Potential explanations for the high presence of banked respondents are that Lagos is the biggest city and has the most bank branches, not all persons approached for the questionnaire agreed to participate (unbanked people may have opted out of the survey), and banking penetration may have increased since the 2008 EFInA survey.

The m-banking users in Nigeria are the elite of the society (see figure 4.2 on next page):

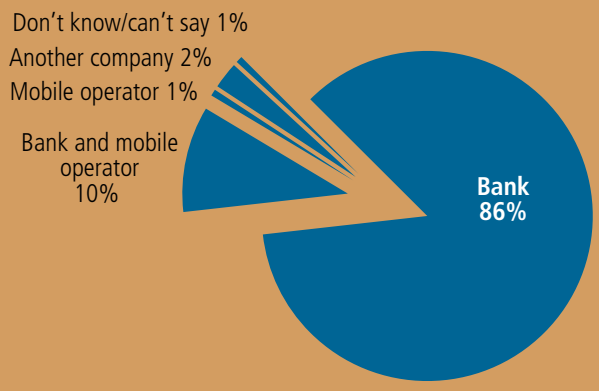
- More than 60 percent of m-banking users are male.
- More than 60 percent are between 25 and 45 years of age, and more than 60 percent are married.
- More than 70 percent have a university degree (compared with 40 percent of nonusers).
- More than 30 percent are employees of private businesses, with an additional 15 percent professionals in the private sector and 15 percent government/public service employees.
- Users are clearly wealthier than nonusers.

Profile of Mobile Money Use

The large majority of m-banking users in Nigeria are aware that their service is provided by their bank as an addition to their existing bank account (figures 4.3 and 4.4).

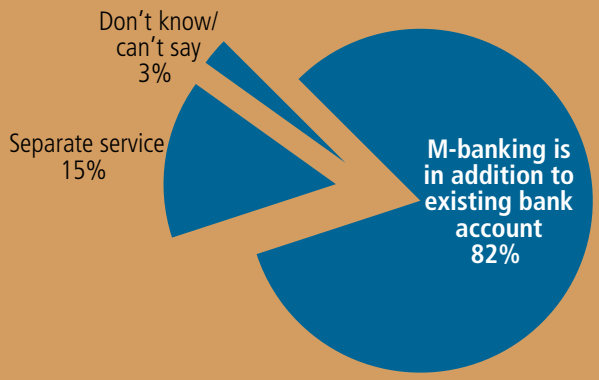
The top three services used are airtime recharge, fund transfers, and balance inquiry (figure 4.5). Fund transfers and airtime recharge were also the most used services in Thailand. In Nigeria, fund transfers are limited to those between the user's own accounts and accounts of the same bank. In Nigeria, most respondents (70 percent) said they used m-money services several times per month, a fairly low frequency (figure 4.6).

Figure 4.3 Mobile Banking Service Provider



Source: IFC Mobile Money Study 2011.

Figure 4.4 Relationship of Mobile Banking to Regular Bank Account

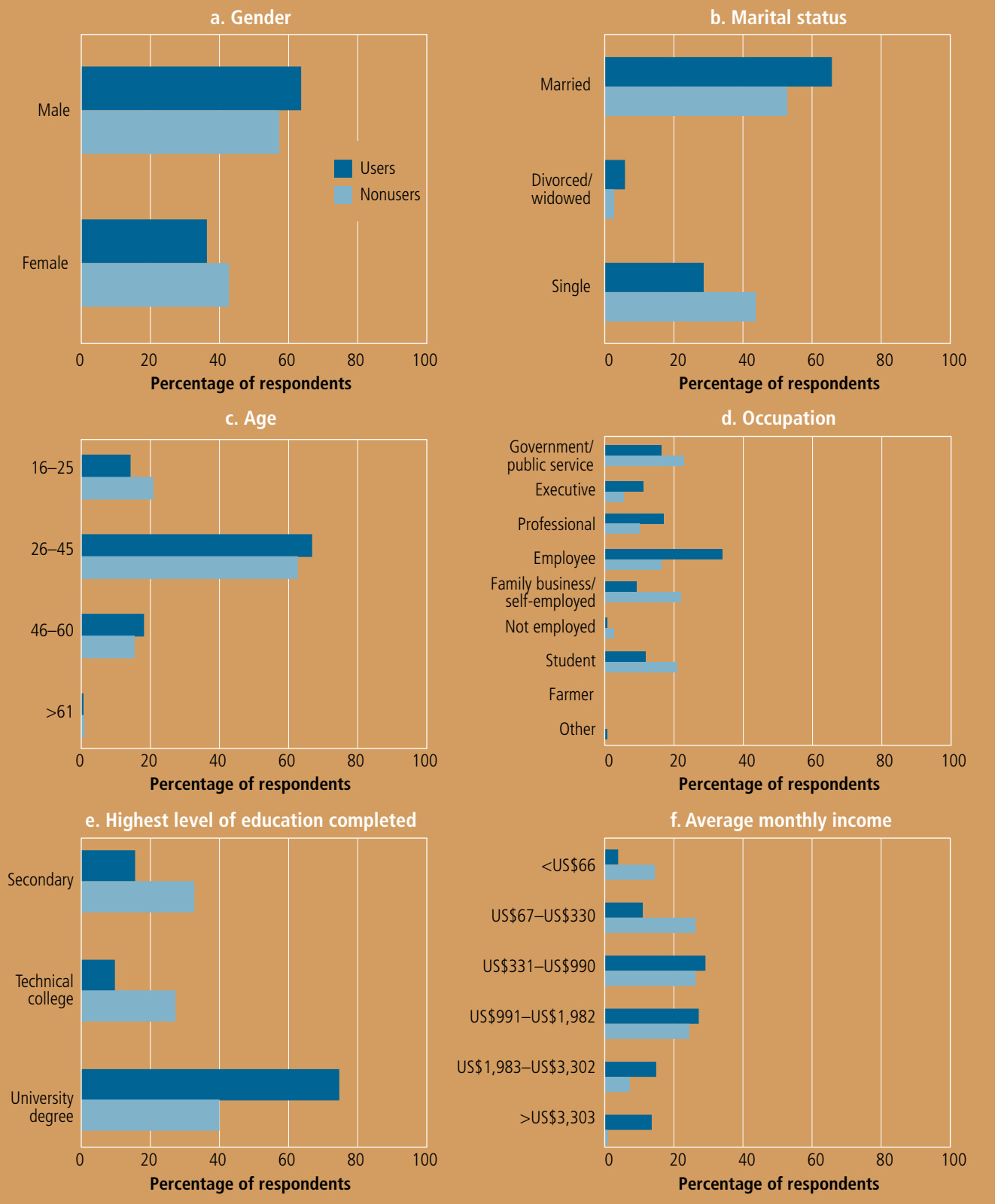


Source: IFC Mobile Money Study 2011.

Mobile Phone Use

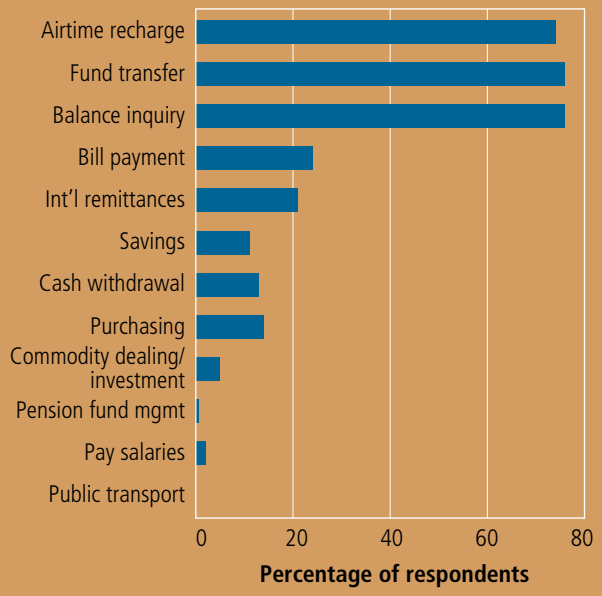
Mobile phone use is ubiquitous in urban areas of Nigeria: virtually all survey respondents indicated that they owned a mobile phone. Of the mobile phones in use, 70 percent were GPRS capable. Those reporting use of mobile phones for m-money services used a service provided solely through a bank. In terms of brand, as with most other countries in the survey, Nokia is by far predominant.

Figure 4.2 Socioeconomic Characteristics of Mobile Money Users and Nonusers



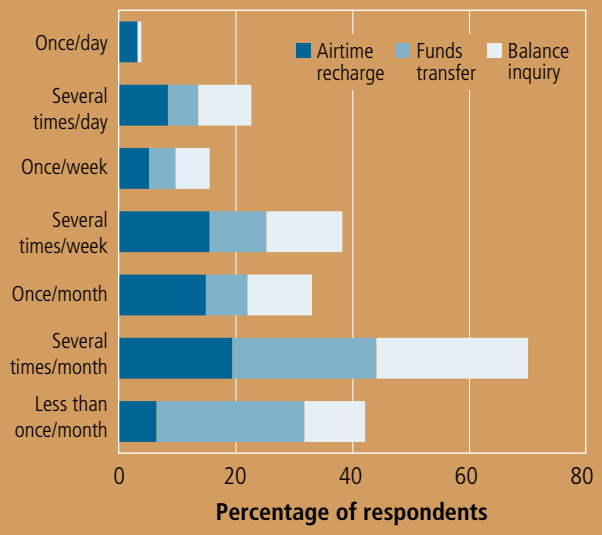
Source: IFC Mobile Money Study 2011.

Figure 4.5 Mobile Money Services Used



Source: IFC Mobile Money Study 2011.

Figure 4.6 Frequency of Use of Top Three Mobile Money Services

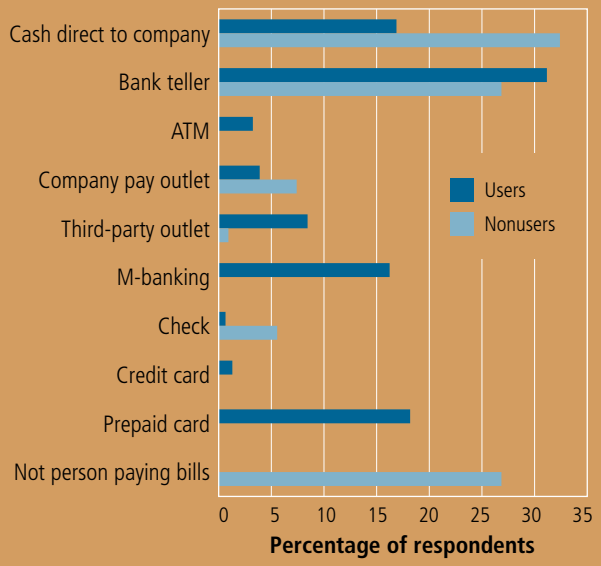


Source: IFC Mobile Money Study 2011.

Bill Payments

Figure 4.7 shows that even among high-income Nigerians (those earning more than the average gross domestic product [GDP] per capita), most used bank tellers to pay their bills. Roughly the same percentage of people used prepaid cards as those who paid their bills directly to companies.

Figure 4.7 Typical Bill Payment Channels

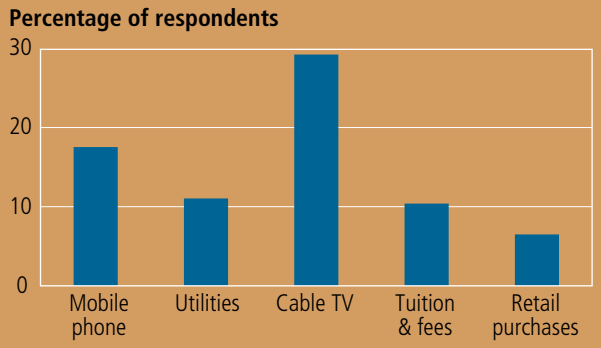


Source: IFC Mobile Money Study 2011.

Payments via ATM were small at 3 percent. Sixteen percent of respondents used m-banking to make payments.

For those who paid via a mobile phone, the most common type of bill paid was cable TV (figure 4.8). The next most common was the mobile phone bill, followed by utilities. A significant number paid university tuition and fees using their mobile phone. Several companies, such as Pay4Me, mentioned that they were targeting colleges as a starting point for m-money.

Figure 4.8 Types of Bills Paid Using Mobile Phone



Source: IFC Mobile Money Study 2011.

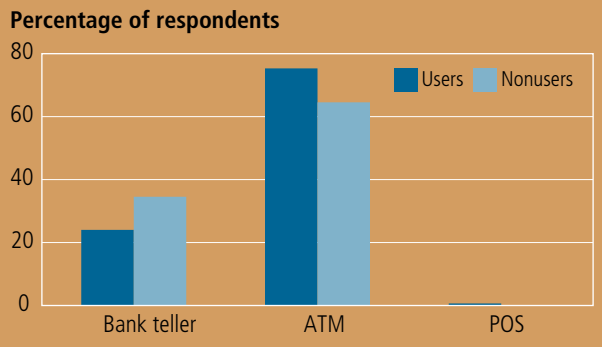
Note: Multiple selections were allowed.

Pay4Me's partner, SW Global Limited, already operates many colleges' Enterprise Resource Management systems. Student applications are processed on the SW Global system, which is integrated with the Pay4Me payment system where student fees can be paid. The Pay4Me system has access to full student records, in compliance with KYC requirements. Lagos universities have a student base of around 50,000.

Cash Withdrawal

A majority of respondents used ATMs for cash withdrawals. Bank tellers were used by 25–35 percent of respondents, with almost no use of POS devices (figure 4.9).

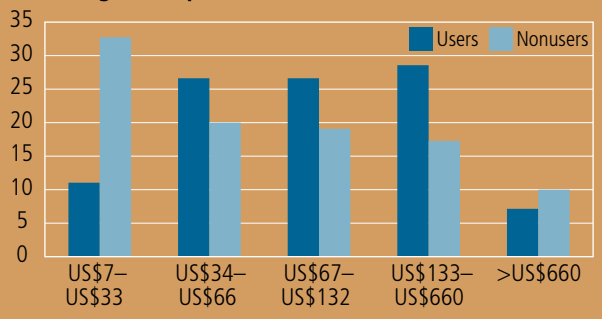
Figure 4.9 Cash Withdrawal Sources Used Most Frequently



Source: IFC Mobile Money Study 2011.

Users' cash withdrawal amounts were typically higher than those of nonusers (figure 4.10). About 65 percent of users made cash withdrawals greater than US$67 compared with 45 percent of nonusers. Thirty-two percent of nonusers indicated withdrawal amounts of about US$7–US$33.

Figure 4.10 Typical Cash Withdrawal Amounts

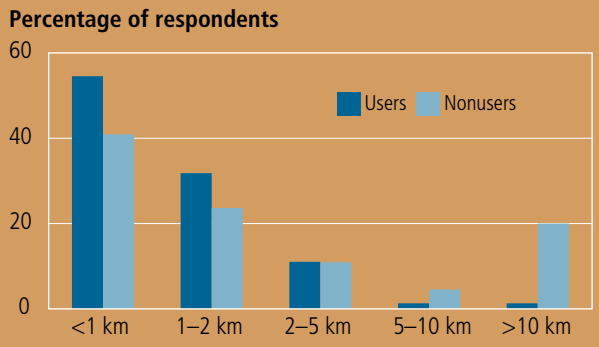


Source: IFC Mobile Money Study 2011.

Access

Figure 4.11 shows a clear differentiation between users and nonusers in terms of access to financial infrastructure, with a much greater percentage of nonusers having to travel farther than 10 kilometers. For most respondents, distance to the nearest bank branch to conduct transactions was 1–2 kilometers or less, according to 85 percent of users and 62 percent of nonusers. A much greater portion of nonusers (20 percent) indicated distances of greater than 10 kilometers to the nearest bank.

Figure 4.11 Distance to Financial Infrastructure



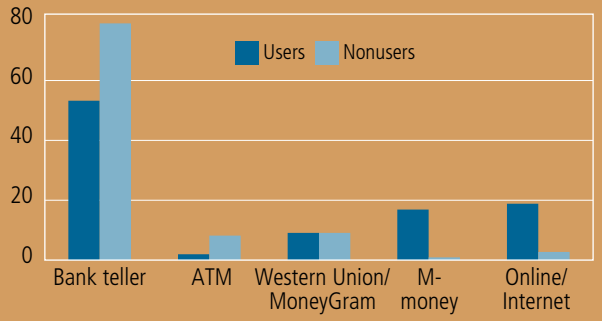
Source: IFC Mobile Money Study 2011.

Fund Transfers

Fund transfers were conducted mainly through bank tellers and, to a much lesser extent, via ATM or remittance companies: 80 percent of nonusers and 50 percent of users used bank tellers to transfer funds (figure 4.12).

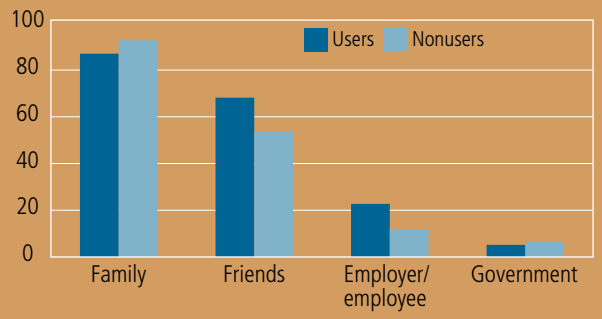
About 20 percent of users used other online channels such as Internet banking, but less than 4 percent of nonusers did so. Figure 4.13 shows that funds were transferred nearly entirely between family and friends, with about 15–20 percent of respondents indicating transfers between employers and employees (most likely salary payments).

Figure 4.12 Typical Methods of Money Transfer



Source: IFC Mobile Money Study 2011.

Figure 4.13 Fund Transfer Destinations



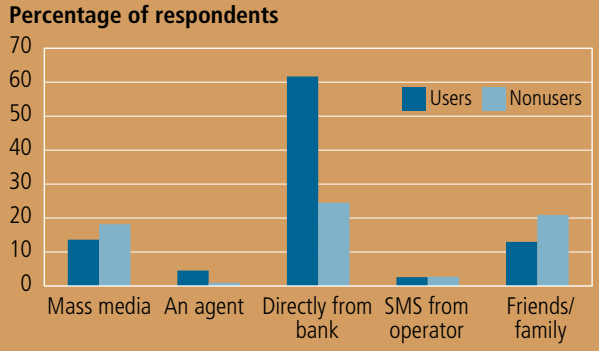
Source: IFC Mobile Money Study 2011.

Awareness

The fact that 62 percent of users had heard about m-banking directly from their bank means that banks are successfully marketing m-banking as an additional channel to their clients. Marketing via existing relationships was clearly more effective than other mechanisms, such as mass media. Word of mouth via family and friends also played a role, with 21 percent of nonusers stating that they had heard about m-banking that way (figure 4.14).

The main ways respondents prefer to learn about m-money services in the future are via e-mail (28 percent), person-to-person approaches (27 percent), and assorted mass media approaches (20 percent). About 7 percent preferred SMS advertising (figure 4.15).

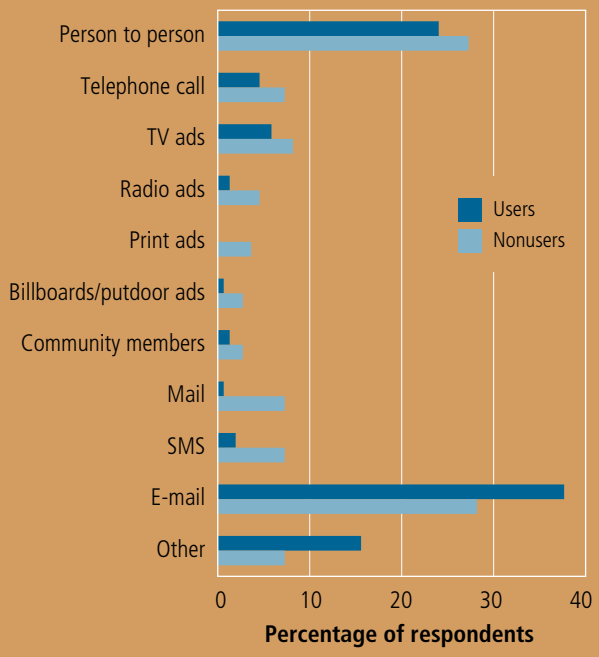
Figure 4.14 Preferred Source of Information on Mobile Banking Services



Source: IFC Mobile Money Study 2011.

Note: Multiple selections were allowed.

Figure 4.15 Preferred Source to Learn about Mobile Money



Source: IFC Mobile Money Study 2011.

Note: Multiple selections were allowed.

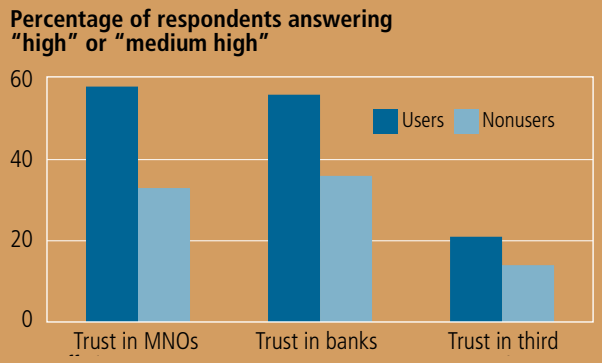
Trust in Financial Services Sector

In terms of confidence in the financial system,[1] there was wide variation between users and nonusers.

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

Nonusers were less inclined to trust m-money offered by MNOs or banks (figure 4.16). Users had greater confidence in the financial sector and trusted both MNOs and banks to offer m-money. However, it is worth mentioning that these figures, especially in comparison with other countries in the survey group, are relatively low and indicate an overall distrust of financial institutions and MNOs in providing m-money. Third parties were particularly distrusted, eliciting medium-low to low trust levels as cash-in/cash-out points.

Figure 4.16 Trust in the Financial System

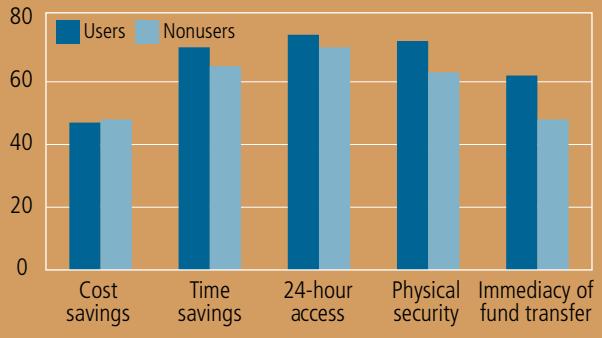


Source: IFC Mobile Money Study 2011.

Benefits of Mobile Money

M-money can fulfill a specific function in comparison to existing financial services, with convenience (time saving, 24-hour access) and physical security being perceived as the primary benefits (figure 4.17). Less emphasis was placed on m-money's perceived cost savings. Nigerians value convenience and are prepared to pay for it.

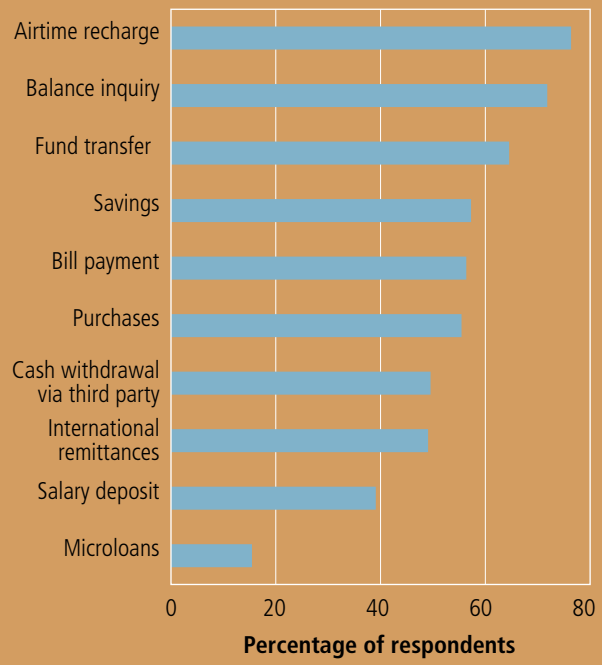
Figure 4.17 Perceived Mobile Money Benefits



Source: IFC Mobile Money Study 2011.

Nonusers were also asked what specific m-banking services would attract them. The most valued services, in order of priority, were airtime recharges, balance inquiries, and fund transfers (figure 4.18).

Figure 4.18 Nonuser Interest in Various Mobile Banking Services



Source: IFC Mobile Money Study 2011.

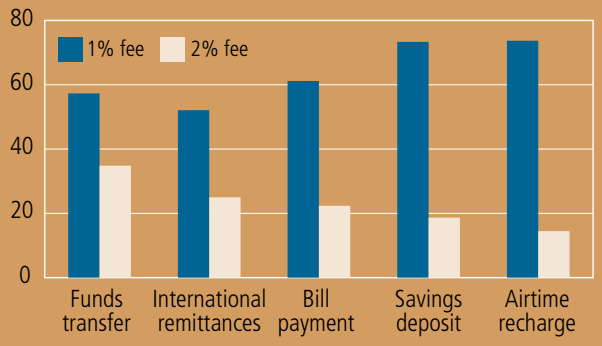
Willingness to Pay

Respondents were asked whether they would pay 1 percent or 2 percent of the transaction amount for various m-money services (figure 4.19). Services that nonusers were interested in, such as fund transfers, were also those for which they were prepared to pay slightly more. Also, people were prepared to pay more for more complex services, such as remittances, in contrast, say, to a savings deposit.

Conclusion

The user and nonuser survey was biased in favor of higher-income individuals within urban areas. Nevertheless, it gives important insights into

Figure 4.19 Respondent Perceptions of Fair Fee Percentage on Various Transactions



Source: IFC Mobile Money Study 2011.

m-money usage. In Nigeria, most bills are still paid at the bank teller and in cash to the company because, even among high-income individuals, there are few alternatives. The most common type of bill paid using m-money is for cable TV, but a surprising percentage use m-banking to pay tuition fees, indicating that companies such as Pay4Me that are targeting colleges are having some success. EFInA, via its household surveys, has established that there is demand for P2P transfers, which was borne out in this survey.

Among users, most have become aware of m-money via their bank, which supports the view that banks are targeting their existing clients to use their mobile phone as an additional payment channel. One of the largest challenges facing m-money in Nigeria is the negative perception of banks and MNOs. Any new entrant will have to aggressively overcome this challenge.

Aside from regulatory issues, Nigeria and Kenya share a number of similarities, including high demand for P2P payments and international remittances, high demand for a secure solution, and low financial infrastructure.

Where Nigeria differs from Kenya is in the public distrust of banks and mobile operators. Distrust of banks is based on their spotty track record over the past few years, including a number of ATM and debit card scares. The distrust of mobile operators is based on their unreliable network coverage. Any m-money initiative is going to have to address these issues directly.

5 Business Models

Existing Business Model: eTranzact

eTranzact is one of three private businesses that provide access to a payment switch in Nigeria; its business model is summarized in table 5.1. It provides the back-office processing for electronic transfers through a variety of channels such as card, Web, and mobile payments. This enables bill payments such as airtime top-up, water and electricity bills, and P2P transfers between the accounts of its member banks. There is currently a national central switch whose role it is to facilitate both corporate and retail transactions. All banks and private switches are connected to the national central switch.

eTranzact earns revenues by providing electronic fund transfer, mobile transactional services, and interfaces to corporate and government departments, which either send payments (such as payroll) or receive payments (such as taxes and utility payments). eTranzact will also be able to provide mobile and other electronic interfaces for banks that do not wish to build and run their own transactional capabilities. For some smaller banks, particularly those not capable of real-time processing, there will also be opportunities to offer full m-money solutions that include hosting the m-accounts and interfacing to the bank's core banking system on an intermittent basis. These services are in addition to related products such as prepaid cards and POS management services.

eTranzact Mobile Money

eTranzact has several interesting m-money products which have just been launched and are at the pilot phase. eTranzact launched a pilot m-money program called EasyMe, which subsequently became eTranzact Mobile Money. EasyMe was targeted at youth and was intended to provide them with a source of income by allowing them to earn value on day-to-day transactions completed on their mobile phones. Once someone signs up to EasyMe as an agent, any bank account holder can approach the EasyMe agent for airtime top-ups and bill payments, such as cable TV payments and for goods and services sold by merchants.

At the time of this study, EasyMe was a pilot with only 11 agents, of which only 1 was active. As of February 20, 2010, no bill payment transactions had gone through the system, while from August 2009 until February 2010, about ₦200,000 (about US$1,340) worth of airtime top-ups had been completed, equivalent to about US$200 per month.

As a result of m-money licenses being issued by the Central Bank of Nigeria in mid-November 2010, eTranzact launched eTranzact Mobile Money and has embarked on a campaign to sign up agent aggregators (that is, super agents who would have networks of agents reporting to them). This is the right approach, and eTranzact's success in signing up agents will be more evident toward the end of 2011. The challenge is to offer a service that

Table 5.1 eTranzact Business Model

Element	Description
Business objective	▪ Private payment switch that provides back-office processing for electronic transfers through a variety of channels such as card, Web, and m-payments ▪ Sees m-payments as a growth area
Strategy	▪ Focus on increasing m-payment transactions through products such as eTranzact Mobile Money
Target market	▪ All mobile phone users
Marketing strategy	▪ National roll-out planned ▪ At the time of this study, the marketing strategy was being put in place
Revenue streams	▪ Fee per transaction
Costs	▪ Switching platform: sunk cost ▪ Cash handling not yet seen as a major issue (mainly because there is virtually no cash handling)
Transactions	▪ Utility bill payments ▪ Cash-in and cash-out ▪ Fund transfer (to bank account, m-money account, any mobile phone, or ATM)
Merchants	▪ Building up a merchant network
Users	▪ Limited users, and no formal license to operate m-money at time of study ▪ However, without a license, as of the last quarter of 2010, eTranzact was rapidly increasing the number of users on the m-banking platform ▪ Currently used by banks to provide banking services to their customers; eTranzact has 13 banks out of 24 in the country that are currently active on its platform
Pipeline	▪ Merchant-initiated transactions—bill payments ▪ Bringing in other banks and operators
Model/partners	▪ Model: third party–centric ▪ Partners: banks (potentially MNOs)

Source: IFC Mobile Money Study 2011.

is differentiated from all others through a focus on convenience and reliability. This requires a significant investment in merchants who are able to accept bill payment and other transactions.

Risks

The biggest risk facing eTranzact is its limited retail experience. It does not operate a large agent network. Nor does it offer a manual cash collection service; these are run by an outsourced company and based primarily in Lagos. eTranzact recognizes this challenge and is expanding quickly to capture the merchant network.

Aside from mobile operators, few national institutions are capable of partnering with eTranzact. The banks are comfortable in their current focus and have little expertise in providing a service to the mass market.

The biggest risk facing eTranzact is its distance from the end consumer. It has little experience with a large base of consumers because its primary market has been businesses and banks. This risk is made greater by the fragmentation across multiple sectors in Nigeria: the mobile sector has five competitors and the fast-moving consumer goods sector is highly fragmented and informal.[1] The agent-aggregator approach adopted by eTranzact

[1] See Noyes (2009) for a fuller discussion of the role of fragmentation.

recognizes this challenge and builds on existing networks of trust with merchants who have been exposed to eTranzact.

Strategy

The recommended strategy for eTranzact is to partner with a number of players to overcome the problem of fragmentation in the Nigerian market.

Assuming that MNOs continue to be excluded from operating m-money businesses, and given eTranzact's lack of mass market experience and the global trend toward third parties (such as switches) *not* being the lead m-money organization, eTranzact's role will have to be a facilitative one, focused on supporting the exchange of value. Given the fragmentary nature of both the Nigerian economy and, specifically, the potential m-money sector, eTranzact could adopt a strategy that brings together multiple players. It would have to actively engage the various components of the value chain to deliver a defined value proposition to the consumer.

Aside from the regulatory environment, the Nigerian market is similar to Kenya's. For example, it has a large P2P market, a large international remittances market, low credit and debit card penetration, and generally poor financial infrastructure. Up to this point, eTranzact has been focused on working with specific banks to deliver an m-money solution. The proposed facilitative role would require engaging organizations at each level of the value chain.

Options for eTranzact

eTranzact's current business is as a switch for electronic payments. Its main motivation is to expand the number of transactions that go through its switch, and it sees m-payments as significant contributors to this increase. In the past, eTranzact has limited its role to m-banking and partnering with several banks. However, all of the banks in Nigeria are motivated to offer an m-banking solution to their middle- to upper-income customers and not to the low-income consumer. As a result, the following are options for eTranzact:

- Act as a third party that facilitates the participation of different players in the m-money ecosystem.
- Lead a third-party m-money deployment and remain focused on bringing agents into the ecosystem, along the lines of DDDedo, a third-party m-money service provider in Colombia.[2]
- Participate in other initiatives, depending on the arrangement licensed by the Central Bank of Nigeria.

Of these options, acting as a third party engaged in bringing together large numbers of agents is the most challenging. However, eTranzact has embarked on a major campaign to sign up aggregator agents. eTranzact's success in signing up agents will be more evident toward the end of 2011.

The third option of adopting a cautious attitude to m-money and negotiating partnerships with pre-existing companies is far too passive an approach and will likely result in lowered participation in m-money initiatives.

The first option is the most promising. There are numerous companies in Nigeria attempting to put together a network of agents that would be able to handle cash-in and cash-out, sign-up, bill payment, and other m-money services.[3] eTranzact's role would be selecting the most promising agents and working with them to deliver an m-money ecosystem. eTranzact would drive m-money in Nigeria, moving away from the current passive approach adopted by banks.

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[2] See Tellez (2010) for more details.

[3] Examples include Pay4Me, Eartholeum, and MoneyBox Africa.

6 Conclusion

Nigeria is one of the few countries in the West African region that has been slow to develop m-money. For example, Orange Money is now active in Côte d'Ivoire, Mali, and Senegal. MTN M-money is available in Benin, Côte d'Ivoire, and Ghana. Zain (now Bharti Airtel) has launched Zap in Ghana and is preparing to launch Zap in Burundi. In Nigeria, the first licenses were just issued in late 2010, with launch scheduled in 2011. This year will be critical in determining the progress of m-money in Nigeria.

The Nigerian economy is fragmented, with no national retail chain, fractured private-public transport systems, and a declining POS network. There is a legacy of distrust of the banks based on a series of ATM fraud issues played up heavily in the Nigerian press. The combination of these factors means that a viable m-money business model is going to be a challenge for eTranzact. Nevertheless, the ingredients for m-money do exist, including a large unmet demand for basic, formal financial services; good mobile penetration; and a large migrant population (both domestic and international). eTranzact is well placed to take advantage of the potential demand.

The demand outlook summarized in chapter 2 indicates significant demand for m-money services in Nigeria. A 2008 EFInA household survey found that 31 percent of adults had received money from a friend or relative in Nigeria. Bill payments via m-money represent another opportunity for the unbanked, since bills are currently paid from bank accounts only. Finally, the B2B sector is a potential market because most input payments are made using cash or check, an insecure and inefficient means of payment compared with the solution that m-money could provide.

The challenge for eTranzact is to overcome its lack of a retail experience and an agent network. eTranzact has embarked on an aggressive agent-aggregator campaign. The success of this approach will be evident toward the end of 2011. To overcome the lack of a retail and agent network, eTranzact should adopt a facilitative business model, in which it brings key players together to form a consortium.

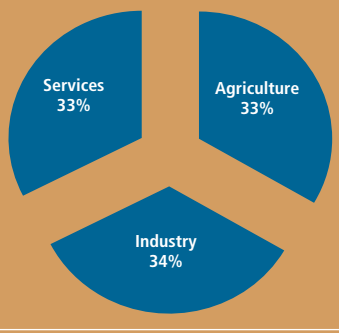
The broader social issue is the lack of trust in the financial sector. This issue can be overcome by directly addressing consumer concerns around reliability and trust—in fact, this could be a key differentiator of m-money in contrast to financial services.

There is a clear opportunity for m-money in Nigeria. With the upcoming entry of 16 new m-money competitors, if eTranzact can pull several partner organizations together, it could be well placed to take advantage of the opportunity.

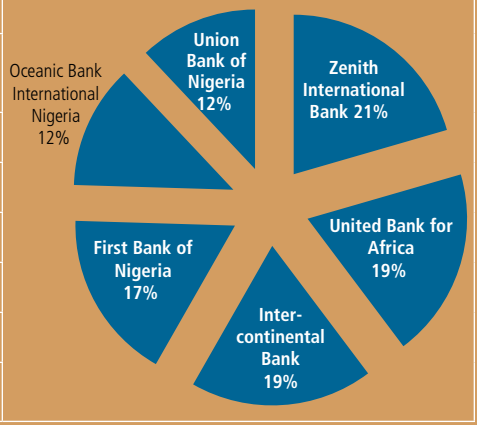
Appendix A
Fact Sheet and Demand Estimates

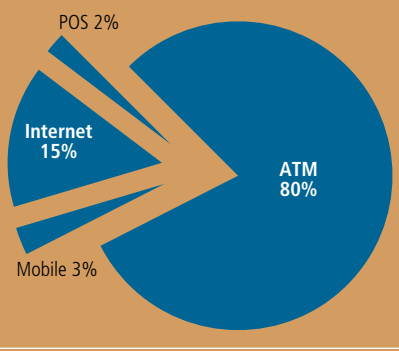
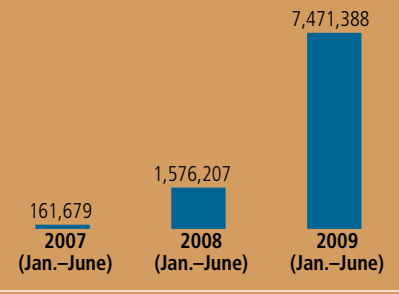
Table A.1 Fact Sheet

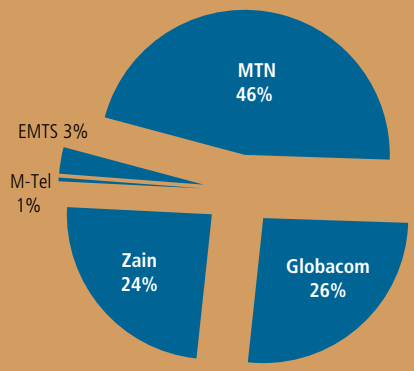
Country Profile		
Population	149.2 million[a]	Sector shares of GDP
Geographic area	923,768 sq. km[a]	
GDP	US$173.4 billion[b]	
GDP per capita	US$1,142[b]	
Rural population	51.6% (77.0 million) (2008)[c]	
Rural poor	19.0% (28.4 million) (2008)[c]	
Population below poverty line	70.0% (104.4 million) (calculated; 2007)[c]	



Financial Profile		
Number of banks	24[d]	Top six banks by deposits
Total branches	5,134[e]	
Total correspondent banking agents	—	
Number of bank accounts	34.6 million depositors[e]	
Banking penetration	21% (2008)[f]	
Number of POS devices	12,000[g]; 8.0 per 100k pop	
Number of ATMs	8,138[g]; 5.5 per 100k pop	
Number of financial cards	30 million[h]; 20.1%	
Credit card growth	—	



Financial Profile (continued)		
Debit card growth	—	**Transaction volumes for various e-payment channels** 
Remittance flow—inbound	US$9,980 million (4.7% of GDP) (2008)[i] (United States, United Kingdom, Italy)	
Remittance flow—outbound	US$103 million[i] (Togo, Benin, Mali)	
Number of MFIs	901 licensed (2010)[j]	**Volume of mobile transactions** 
Number of MFI accounts	1.39 million borrowers (2008)[k]	
Herfindahl-Hirschman Index (HHI)	1731	

Mobile Profile		
Mobile operators	5 (Global System for Mobile Communications [GSM])	**Mobile market share (GSM): 3rd quarter 2009** 
Mobile coverage	60.0% (2006)[l]	
Number of mobile subscribers	76.4 million (active lines, GSM + Code Division Multiple Access [CDMA]) (March 2010)[m]	
Mobile penetration	51.2% (calculated) (March 2010)	
Internet user penetration	15.9% (24.0 million) (2008)[l]	
Broadband penetration	0.04% (67,800) (2008)[l]	
Herfindahl-Hirschman Index (HHI)	3424	

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?pr.x=24&pr.y=0&sy=2008&ey=2010&scsm=1&ssd=1&sort=country&ds=.&br=1&c=694&s=NGDPD%2CNGDPDPC&grp=0&a=.

c. IFAD 2010.

d. Central Bank of Nigeria, List of Financial Institutions, Deposit Monday Banks, http://www.cenbank.org/Supervision/Inst-DM.asp.

e. CBN 2009b.

f. Isern et al. 2009.

g. InterSwitch 2009.

h. Gemalto 2009.

i. Honohan 2008.

j. Central Bank of Nigeria, List of Financial Institutions, http://www.cenbank.org/supervision/Inst-MF.asp.

k. Consultative Group to Assist the Poor Web site, Nigeria, http://www.cgap.org/p/site/c/template.rc/1.26.2301.

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

m. Nigerian Communications Commission, Subscriber Data, http://www.ncc.gov.ng/subscriberdata.htm.

Table A.2 Demand Estimates

Socioeconomic data	
Population (millions)	149.2[a]
GDP per capita (US$)	1,142[b]
Gini index	42.9[c]
Financial data	
Bank accounts (million)	34.6[d]
Banking penetration (percent)	21[e]
Number of POS devices	12,000[f]
POS devices (per million inhabitants)	80[g]
Number of ATMs	8,138[d]
ATMs (per million inhabitants)	55[h]
Payment cards (million)	25[f]
Payment cards (per million inhabitants)	166,774
Mobile data	
Mobile operators	5
Mobile penetration (percent)	51.2
Number of mobile subscribers (million)	76.4[i]
Potential demand	
E-payments (per month)	Unknown
G2P (transactions per month)	40,000[j]
Payroll, informal sector (transactions per month)	37,821,000[k]
P2P (transactions per month)	46,252,000[l]
Public transport (trips per month)	10,000,000[m]
Unbanked (persons)	46,000,000[n]
Utility (payments per month)	21,650,000[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?pr.x=24&pr.y=0&sy=2008&ey=2010&scsm=1&ssd=1&sort=country&ds=.&br=1&c=694&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. CBN 2009b.

e. Isern et al. 2009.

f. InterSwitch 2009.

g. Calculation based on number of POS devices divided by population (million).

h. Calculation based on number of ATMs divided by population (million).

i. Nigerian Communications Commission, Subscriber Data, http://www.ncc.gov.ng/subscriberdata.htm.

j. Consists of Nigeria Delta Disarmament Program (20,000) and National Poverty Eradication Program and its Care of the People program (20,000).

k. Based on total working population of 54,030,000. National Bureau of Statistics, http://www.nigerianstat.gov.ng/nbsapps/annual_reports/CHAPTER%207.pdf); size of the informal sector: 70 percent (Akintoye 2008).

l. Thirty-one percent of adults have sent money within Nigeria (EFInA 2008).

m. Lagos Metropolitan Area Transport Authority, 2009.

n. EFInA 2008.

o. Utilities includes cable and electricity customers: cable: 762,000 (Naspers 2010); electricity: 20,888,000—14 percent of adults have electricity bill (EFInA 2008).

Appendix B
Persons Interviewed

Emmanuel Obaigbona, Deputy Director/Head Payments System Division, Banking Operations, Central Bank of Nigeria

Eme Godwin, Group Head Legal/Human Resources Manager, eTranzact

Adekunbi Ademiluy, Strategy & New Business, eTranzact

Biodun Ogunlabi, Head, MTN Mobile Money

Emmanuel Okoegwale, Mobile Money Africa

Modupe Ladipo, Chief Executive Officer, EFInA

Funmi Sodipo, Head of Consumer Finance, EcoBank

Kelechi Dozie, MD, Pay4Me Services Limited

Ismail Radwan, World Bank, Abuja

Oludare Osibote, Director, Consolidated Accounts, Office of the Accountant General and Chair of e-Payment subcommittee

Seyi Ijaola, Payment Systems Department, Intercontinental Bank PLC

Oloniteru "Toyin" Oloniteru, Group Head, IT & Strategic Marketing, 3Line Card Management Limited

Ayodeji Ige, Chief Sales Officer, Chief Operating Officer, MoneyBox Africa

Peter Afam Emeleogu, Chief Visionary Officer, Eartholeum & Bola Adeyinka

Mukul Mathur, Olam Nigeria PLC

Benjamin Onigbinde, Chief Executive Officer, Signals Mega Concept (SMC) Limited

Ayodeji Akinrinmade, Project Manager, Mobile Commerce, Zain Nigeria

Shola Adeyemi, GM Regulatory Affairs, Glo Nigeria

Anthony Nwachukwu, Chief Operating Officer, SW Global Limited

Christiana Atabansi, Head, Electronic Banking, Intercontinental Bank

Kelechi Dozie, MD, Pay4Me

Yewande Enobakhare-Adewusi, Program Manager, EFInA

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