



## FINANCIAL SERVICES ASSESSMENT

# Innovations in Financial Service Delivery: Scope and Challenges

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*Financial Services Assessment* project can be found on the web at <http://www.fsassessment.umd.edu/>

## ABOUT THE PROJECT

The *Financial Services Assessment* project is designed to examine the impact of financial services on the lives of poor people across the developing world. This project is funded by the Bill & Melinda Gates Foundation, which is committed to building a deep base of knowledge in the microfinance field. The IRIS Center at the University of Maryland, College Park, together with its partner, Microfinance Opportunities, will assess a diverse range of innovations in financial services. The results of this project will shed light on the design and delivery of appropriate financial products and services for the poor and the potential to scale up successful innovations to reach larger numbers of low-income households.



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## REPORT SERIES

This report is part of a series that will be generated by the *Financial Services Assessment* project. The reports are disseminated to a broad audience including microfinance institutions and practitioners, donors, commercial and private-sector partners, policymakers, and researchers.

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## ACRONYMS

BMGF	Bill & Melinda Gates Foundation
CGAP	Consultative Group to Assist the Poor
FBPAs	Field-Based Promotional Assistants
FINCOOP	Finance Cooperative Ltd.
HFIAP	Household Food Insecurity Access Prevalence
HFIAS	Household Food Insecurity Access Scale
MFI	Microfinance Institutions
MIS	Management Information Systems
MK	Malawi Kwacha
MRFC	Malawi Rural Finance Company
NGO	Non- Governmental Organization
OIBM	Opportunity International Bank in Malawi
PAT	Poverty Assessment Tool
PPP	Purchasing Power Parity
SACCOs	Savings and Credit Cooperatives

# I. Introduction

A consensus has now emerged among policy makers, donors and practitioners that opening and expanding access to financial services for the unbanked is an important component of economic development. The microcredit summit has set a goal to reach 175 million of the poorest and unbanked, and to ensure 100 million families rise above the PPP \$1 a day threshold by 2015. As of 2006, based on self-reported data from 3,316 microcredit institutions, it was estimated that 133 million clients were reached, of which 93 million were poor and less-banked when they took their first loan. Assuming five persons per family, the 93 million clients reached by the end of 2006 affected some 464 million family members.<sup>1</sup> These clients constitute the base of the socio-economic pyramid as defined by Prahalad (2002)<sup>2</sup>. While the above numbers might sound huge and a reason to proclaim “mission accomplished”, the outreach to the less-banked poor only represents about 5% of the total population living below the national poverty lines or about 2% of the base of the pyramid in the developing countries.<sup>3</sup> Of the 3,316 institutions in the microcredit summit database, only about 340 leading microfinance institutions report to Microbanking Bulletin of which 244 are considered financially sustainable.

Therefore, expanding access in a sustainable way to the base of the pyramid, especially those in remote areas, remains a daunting challenge. Gaps exist between supply and demand in several developing countries. An inefficiency gap between the potential supply and current achievements, an insufficiency gap between legitimate demand and potential supply, and a feasibility gap between political expectations and legitimate demand are common (Gonzalez-Vega, 2003). Several factors contribute to these gaps and challenge the efficient functioning of financial markets to expand access to the unbanked. But, the challenges could be addressed to a considerable extent with financial innovations that aim to sustainably expand the frontiers of possibilities to create and add value to financial services for the unbanked to improve their well being. To that end, innovations are required in institutions, products, service delivery and donor (public and private sector) practices. As a result, the expectation is that innovations could increase the value proposition of financial services by improving access on a sustainable basis for causing lasting impacts on the lives of the un-banked.<sup>4</sup>

The good news is that there are many financial product and service innovations underway. They include new type product lines in loans, savings, insurance remittances, pensions, payment systems and leasing (see annex 1). But, these innovative products and services are

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<sup>1</sup> Source: Sam Daley-Harris, 2007, Microcredit Summit Annual Report -<http://www.microcreditsummit.org/pubs/reports/socr/2007.html>.

<sup>2</sup> The base of the pyramid is the largest, but poorest socio-economic group. This is the four billion people who live on less than PPP\$2 per day, typically in developing countries. The phrase “base or bottom of the pyramid” or simply BoP is used in particular by people developing new models of doing business that deliberately target that demographic, often using new technology.

<sup>3</sup> Note that The MixMarket, based on reports in 2006 from 2,207 MFIs around the world, estimates that about 77 million clients are reached by MFIs and they represent about 3% of the population that is considered as poor by national poverty lines (Source: Gonzalez, Adrian, 2007. “How Many Borrowers and Microfinance Institutions (MFIs) Exist?” Microfinance Information Exchange (MIX), Washington, D.C, [www.mixmarket.org](http://www.mixmarket.org)).

<sup>4</sup> Value proposition for clients refers to the sum total of benefits that they receive in return for the associated payment (or value-transfer). Value propositions for clients can be broadly assessed for (i) the relative performance: what the client gets from the service provider relative to a competitor's offering, and (ii) price: which consists of the payment the client makes to acquire the [product](#) or [service](#) plus the [access cost](#)

less used by the unbanked due to bottlenecks in delivery mechanisms that limit physical access. Most financial institutions use delivery mechanisms that are unable to bring banking services closer to the unbanked at a reasonable cost, especially in remote and rural areas. The excellent news, however, is that the exciting and cutting edge innovations are now observed in service delivery. These service delivery innovations strive to reduce (i) direct and transactions costs for providers and users, (ii) risks for providers and users by improving access to information and robustness to uncertainties. In doing so, they aim to reduce the bottle necks for outreach and institutional sustainability. These advances in service delivery appear to have aligned the interests of various stakeholders such as financial and non-financial service providers. As a result, many institutional and strategic partnerships are being fostered to achieve scale and scope economies. For example, collaborations between banks and telecommunication service providers are emerging to provide banking services in rural areas. There is now a huge expectation that service delivery innovations are paramount to improve access to financial services for the unbanked base of the pyramid.

Given the above context, it is crucial to examine the following issues: What types of innovations currently exist in the financial service delivery landscape? What facilitates development and dissemination of financial service innovations? Are the innovations in service delivery indeed expanding access to the less banked poor and remote areas? If so, what are the outcomes of such financial service delivery innovations on the lives of the less banked? Based on recent literature, this paper attempts to focus on some of the above issues in financial service delivery to the less banked base of the pyramid clients. Particular focus is placed on branch-less banking and use of technology that are considered by many for its potential to substantially, efficiently and quickly expand access to financial services in rural and remote areas.

## II. Landscape of Financial Service Delivery Innovations

The current landscape of financial service delivery, observed in the past seven years, is rich with innovations that use information communication technology (ICT) and strategic partnerships with non-bank stakeholders to notch up branchless banking. The current landscape has, however, evolved considerably since 1980s. Indeed, the current landscape features third generation innovations that extended from the first and second generation branchless banking innovations discussed below.

**Branchless banking** includes mobile vans, agents, points of service devices, automated teller machines, internet banking and mobile phone banking are used to provide banking services such as account opening, maintenance and operations. It helps address the two biggest problems of access to finance: the cost of roll-out (physical presence) and the cost of handling low-value transactions. This sharp cost reduction creates the opportunity to significantly increase the share of the population with access to formal finance and, in particular, in rural and remote areas (Ivatury and Mas, 2008).

## 1. First generation innovations: Banks on Wheels and Heels

These innovations began in 1980s, and were led by financial service providers to improve their outreach through branchless banking to rural and remote areas that are costly to serve. These innovations primarily attempted to substitute mobile vans for “brick and mortar banking.” Examples include the mobile vans introduced by Self Employed Women’s Association (SEWA) bank in India since 1978 and Vietnam Bank for Agriculture and Rural Development (VBARD) in 1988 to reach rural areas.

While the above innovations were useful to bring banks closer to their clients and expand their client base, the expected savings in cost of operation were minimal. The cost advantages from reduced brick and mortar bank branches were mainly offset by high initial costs of the vans and operational costs (due to high maintenance of the vans). The majority of small and fledgling financial service providers were unable to compete with such costly delivery mechanisms. Furthermore, the mobile vans were limited in their ability to travel on non-paved roads and the products that could be delivered. Therefore, value offered to rural and remote clients was minimal resulting in minimal outreach. As a result, revenues required to offset the operational costs could not be achieved.

There were also some delivery innovations through use of local commission agents residing in rural areas. It was expected that such mechanisms will reduce costs of building bank branches in rural areas and also will reduce information problems to screen and monitor clients. But, many such pilots were unsuccessful in improving access in rural areas due to lack of skilled agents and high supervisory costs.

## 2. Second generation innovations: E-banking

These innovations were also led by financial service providers and were observed in the 1990s. These also were built on branchless banking but used card-based technologies to deliver banking services. They were commonly referred to as “electronic banking (e-banking)” and primarily used “electronic cards” to store and transmit information.

Innovations included use of Automated Teller Machines (ATMs) and Point of Sale (POS) devices to execute transactions through third-party agents. Some improvements in outreach to rural areas and cost reductions were achieved by leveraging networks of existing third-party agents for cash transactions and account opening, and by conducting many transactions online. However, it was still challenging to reduce fixed and operational costs and to provide a longer menu of services through these outlets, and to reach remote areas due to limited communication connectivity.

During this phase, there were also innovations to improve information management to increase speed of operations. These were achieved through use of Personal Digital Assistant (PDAs) such as Palm Pilots. These innovations improved customer satisfaction and value propositions of financial services, but were costly to acquire for many small financial service providers.

### 3. Third generation innovations: Dial M for Banking

These innovations appear to have started in late 1990s. They also build on branchless banking but with cutting edge ICTs to improve outreach at reduced costs.

The most prominent innovation in this period includes mobile phone banking or m-banking. The innovations benefited from major improvements in wireless technology. It is now shown that while only about 8% of Africans use a mobile phone, about 52% of the population in low-income countries live in areas with wireless reception.

In the developing world, M-banking was first introduced in the Philippines with introduction of SMART money in 2003, G-Cash in 2004 and later in South Africa with the initiation of WIZZIT in 2005. It was soon followed by Kenya (M-PESA) in 2007, India and Brazil, and is now spreading like wildfire across many countries (see annex 2 for details).

#### *WIZZIT in South Africa*

Wizzit, a virtual bank was launched in South Africa in 2005 with support from all the major mobile phone operators in South Africa. Wizzit has no branches of its own. Its customers use their mobile phones to make person-to-person payments, transfer money, purchase pre-paid electricity vouchers, and buy airtime for a pre-paid mobile phone. Wizzit customers also receive a Maestro-branded debit card that enables them to make purchases, get cash-back at retail outlets and withdraw money at any South-African or Maestro-labelled ATM anywhere in the world. Wizzit does not have a minimum balance requirement and does not charge fixed monthly fees. It uses a pay-as-you-go pricing model, with charges ranging from US\$0.13 to US\$ 0.66 per transaction depending on the type. Customers are charged US\$5.26 to sign up.

Wizzit uses an agent model. To open an account, a Wizzit agent is sent to the applicant's home or workplace. The account-opening process is handled by one of the company's WizzKids, very often young South Africans who had previously been unemployed. The account can be used to send money to any other Wizzit account holder in South Africa, and overnight to any other bank account holder. To transfer money Wizzit uses the South African inter-bank clearing house system. It accesses the clearing system as an autonomous division of the South African Bank of Athens Ltd. This feature gives Wizzit account-holders the ability to transact with any mobile user regardless of the identity of their network operator or their bank. One of the main advantages of the service is that the mobile banking technology works on any handset, and SIM card and across all the networks.

Source: The Economic Intelligence Unit, "South Africa: From mattress to mobile banking", July 13, 2007. <http://www.eiu.com>.

*Crystal Ball gone wrong? "This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us." - Western Union, internal memo, 1876.*

In the initial stages, these m-banking innovations, in sharp contrast from the previous ones, were pioneered by mobile phone operators who are driven by their need to increase their market share by improving the functionality and utility of their services. These innovators consider banking as a lucrative additional service to retain and expand their marker share. Examples include GXI in the Philippines (G-cash) and Safaricom in Kenya (M-PESA). The financial service providers tended to lag behind, but are now beginning to partner with and piggy-back on these mobile phone operators, as in the case of SMART Communications in the Philippines, which provides branchless banking in partnership with banks to maintain customer accounts. There are also some independent non-mobile phone operators, such as WIZZIT in South Africa, which has partnered with the South Africa Bank of Athens to provide m-banking to clients (Ivatury, 2008). There are now plans to introduce mobile phone

banking, called M-Paisa, in rural Afghanistan through partnerships between banks and Roshna, the cell phone provider.

Mobile phone banking is now shown to reduce costs of providing financial services. For example, in the Philippines, a typical transaction through a bank branch costs the bank US\$2.50, while it costs only US\$0.50 if it were automated using a mobile phone (Asian Banker 2007). In some cases, outreach has been enormous. For example, since its introduction in March of 2007, M-PESA has grown significantly in Kenya. There are currently over 2.3 million registered users and over USD 280 million had been moved through the system, via person-to-person (P2P) transfers.

Observations of many mobile phone banking pilots are now offering initial lessons on two key features that could facilitate mobile banking to reach the unbanked in rural areas: use of third party agents and role of financial and telecommunication providers.

*Third party agents are an important linchpin for successful mobile phone banking:* The use of third-party agents tends to reduce costs of operations for the service provider and also for the clients. It was estimated that a cash transaction at a branch of Banco de Credito in Peru would cost about US\$0.85, while the same transaction at the bank's mobile phone agent would cost US\$0.32. Tameer Bank in Pakistan estimates that, in the Orangi slum of Karachi, the setup cost of a bank branch would be 30 times more than the setup cost per bank agent, which is about US\$1,400, and the monthly operating costs average about US\$28,000 for a branch, compared with US\$300 for an agent.

#### M--PESA in Kenya –Using Agents to Deliver Services

M-PESA is a Safaricom service that allows money transfer using a mobile phone. This is offered in partnership between Safaricom and Vodafone, and offered through agents. M-PESA does not require the client to hold a bank account or a bankcard.

HOW TO REGISTER FOR M-PESA: 1. Upgrade your SIM for free, 2. Register for M-PESA at an M-PESA Agent, and 3. Activate the M-PESA menu on your phone. You will need your Safaricom SIM and National ID/Passport, . You do not need to have a bank account.

HOW TO SEND PESA: Go to an M-PESA Agent and: 1. Buy M-PESA value by depositing cash, 2. You and your Agent will receive SMS confirming the transfer, 3. On your M-PESA phone menu, select "Send Money", 4. Enter recipient's phone number, the amount and your PIN, 5. You and the recipient will receive SMS confirming the transfer

HOW TO GET CASH : If you are a registered M-PESA Customer, Go to an M-PESA Agent and: 1. Give your phone number and show your ID / passport, 2. Go to your M-PESA menu, select Withdraw money, 3. Enter the Agent number, the amount and your PIN, and 4. You and your Agent will receive an SMS confirming the transfer, 5. The Agent will then give you the cash

If you are not a registered M-PESA customer: Go to an M-PESA Agent and: 1. Give your phone number and show your ID/Passport, 2. Give the code in your SMS from M-PESA, 3. The Agent will do the transaction on your behalf using his phone, 4. You and your agent will receive an SMS confirming the transfer., 5. The agent will give you the cash.

To register or transact at any M-PESA agent, you will need your original identification document: National ID, Passport.  
Source: Safaricom. <http://www.safaricom.co.ke/index.php?id=228>

Third party agents are also observed to help quickly scale up operations. For example, M-PESA was able to reach two million clients within a year of its launch; in contrast, about a million retail bank clients were acquired over the three prior decades in Kenya. The breathtaking outreach was achieved through a network of 850 agent locations, a network larger than the entire network of bank branches (550) in the country.

These agents need not only be individuals. Tameer Bank in Pakistan is considering partnering with the postal network, a government-run food distribution system, and direct distributors of one of the major telecoms to reach remote areas. In India, the Andhra Pradesh state government is planning on using federations of up to 30,000 self-help groups to act as cash agents for payment of social services in interior villages. Such initiatives need to be monitored and evaluated to draw lessons on reaching remote areas with m-banking.

*Mobile banking service providers can include financial service and non-financial service providers.* Most mobile banking phone projects are observed to be led by telecommunication operators. Their wide network of agents and ability to penetrate into rural areas that could be reached with wireless technology has offered them a first-mover advantage in this field.

However, a recent survey conducted in South Africa shows that fewer people would trust a mobile banking service if it were backed by a mobile operator rather than a bank (Ivatury and Pickens, 2006). This offers opportunities for financial service providers to counter the first-mover advantage of telecommunication service providers. Many financial service providers are now catching up. Big microfinance banks such as Tameer Bank in Pakistan and Xac Bank in Mongolia are developing their own mobile banking channels and are partnering with mobile operators to reduce delivery costs and to reach unserved urban and rural areas. Medium-sized MFIs are partnering with big banks to expand their market among the unbanked. For example, SKS Microfinance in India has developed a mobile banking initiative in partnership with Andhra Bank, in which customers use designated SKS banking agents to deposit money into Andhra Bank accounts and use a mobile phone to repay SKS microloans. Smaller MFIs are teaming up to provide services as a group, as observed in Ecuador, where the Red Financiera Rural association of MFIs and cooperatives are joining hands to contract a technology provider to build and maintain core banking systems and branchless banking channels in rural areas.

*Mobile banking is not yet used for full banking services.*

M-banking is not a "solution" for every context.

Mobile phone banking is observed to be mainly used for payment services and not for savings or credit, even when they could offer a broader range of services, including account opening, cash deposits, and cash withdrawals. Most clients are observed to not store money in their m-banking accounts and also may not open a savings account if it is not a requirement.<sup>5</sup> The trend could be attributed to two main reasons: (i) limited marketing by the providers, since they presume that it could attract regulators' attention to mobile phone banking, and (ii) the high value attached by clients to reduction in direct costs and transaction costs for recurrent transactions such as utility bill payments, receipt of remittances, pensions, welfare and salary. In addition, electronic money has yet to appeal to many as real money to store value that could be easily liquidated to meet contingencies. Many of the unbanked do not save even in real money in formal financial institutions. McGuinness (2008) observed that the majority of rural Malawians save under their mattress rather than in a formal financial institution. It is expected that as clients gain experience with mobile phone banking and trust formal agents for placing their savings, they

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<sup>5</sup> Research in Brazil found that, of the 750 people who responded to a survey in Pernambuco State, 87 percent of those who had opened an account stated that they had done so just to receive welfare or salary payments only (CGAP, 2006)..

would begin using mobile phones for accessing more services, including savings and loans. But it is important to document lessons from use of mobile phones to effect banking services besides utility payments. In Kenya, an MFI that substituted group loan cash repayments with repayments in M-PESA experienced higher delinquencies, since the clients no longer attended the group meetings that exerted peer pressure to maintain good repayment ethics (Ivatury and Mas, 2008).

Mobile phone banking is also found to be very challenging to implement. Faulty technology and implementation have led many m-banking pilots to fail (Mas and Kumar, 2008). Primary challenges include limited capability of mobile phones to provide a wide range of banking services and limited ability to replace cash that functions as a medium of exchange and stored value. These lead to limited value for the clients. In addition, many clients, especially less-banked clients, are found to be uncomfortable interacting with faceless technology to conduct financial transactions such as depositing savings and repayment of loans.<sup>6</sup> In addition, many remote areas are still outside the reach of wireless technology. However, the latest news from Mongolia raises some optimism regarding the scope for m-banking in remote and less populated areas. For example, Xac Bank in Mongolia has recently announced that it will soon introduce m-banking to rural areas (more on this later). Also, uncertainties with regulations, security, and technological issues that restrict interoperability seem to delay success of mobile phone banking even in urban areas.

#### **4. Retrofitting earlier innovations: Old Wine in New Bottle?**

Some of the innovations observed in the current third generation era also include re-engineered delivery mechanisms from the financial service providers in the last two generations. For example, mobile vans are still observed in the landscape of third generation innovations. However, they now use advanced ICTs to improve speed and cut costs. For example, since 2007, Opportunity International Bank in Malawi (OIBM) is using mobile vans fitted with ATMs to bring the bank to rural areas in Malawi.<sup>7</sup> Carrying two bank employees, two armed Police Mobile Force guards and decked with solar power, a GPS tracking system and satellite technology allowing real-time transactions, these vehicles now cover six service points in three rural districts on a weekly basis. They visit designated trading centers on market days and operate through open windows. For a small fee that is less than a bus fare to the nearest town, clients are able to deposit or access funds using a biometric card (McGuinness, 2008). Similarly, Pak Oman Microfinance Bank in Pakistan, in collaboration with the National Database Regulatory Authority (NADRA), started mobile van banking operations in 2007 in rural Sindh's central market areas that were un-banked.

These new types of mobile vans offer services of opening savings and current accounts on the spot, cash deposit and withdrawals and investment in certificates of deposits. NADRA, the partner, is extending the service of issuance of new identity cards at the door steps that

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<sup>6</sup> See study conducted in urban areas of South Africa (Ivatury and Pickens, 2006).

<sup>7</sup> Surveys of Opportunity clients in Malawi revealed that many travel as much as 600km just to save with the bank. Indeed, 85% of Malawi's 12 million population live in rural areas.

are essential to open and maintain bank accounts (Allahar, 2007). Credibanco Visa van in Colombia, started in 2007, connects to the information system of its partner bank, Banagrario, using satellite technology to allow rural clients open accounts on the spot and process debit/credit card transactions in remote and underserved communities. Credibanco also helps the bank contract and train local banking agents that can immediately accept customer deposits, disburse new loans, and conduct bill payment (The World Bank, 2008).

Successful use of these new mobile banks is, however, context specific and depends on the status of security, law and order in rural and remote areas, the availability of good roads for transport, good satellite connections, and regulatory issues regarding the collection of savings. Furthermore, it is important to establish confidence with unbanked clients before using mobile vans. Clients in remote areas of Rwanda have raised concerns about mobile units that drive away with their deposits and then visit them only occasionally and at times that may not coincide with the times they need to withdraw their savings. Also, these new vans cost over USD25,000 and involve high maintenance costs. As a result, outreach to remote areas through new-generation mobile vans may prove to be limited.

Many card based mechanisms used during the second generation are now improved to attract a wide variety of clients. ICICI Bank in India has launched special ATM machines for visually challenged people. This has been made possible by voice guided system and specially made functions display keys which guide a visually challenged person to operate the ATM. These ATMs are equipped with video surveillance devices to reduce frauds. Regular customers can also use this ATM (Source: ICICI, August 2008). Many ATMs in South Africa and Bolivia are guided through local language voice activated menus to attract less educated clients. These ATMs are easy to operate and can be easily installed. Costs for installing ATMs have also come down by about 60% - the new ATMs can cost about USD8,000 - 10,000 each. However, these ATMs require good connectivity with the head / branch office to reconcile transactions, and ready accessibility for the branch/head office to replenish cash on regular basis should the local economy operate in a cash economy.

The debit cards and smart cards introduced as part of the second generation innovations are also being re-engineered. For example, the Malswitch card used by OIBM in Malawi uses the cutting edge biometric technology. Every client receives a smart card called the “Malswitch” that has their fingerprint embedded on a chip within the card. They can prove their identity by scanning their finger at a teller’s station or an ATM. Security is guaranteed because the biometrics can only be used by the authorized person. State-of-the-art technology has meant for the first time, clients are able to simply and safely access savings accounts. They also hold more information on the client’s banking history than just account balances. This increases the functionality of these cards to be used with other partner banks and as an identification card to access services such as food aid, health and education services (McGuinness, 2008). The costs of production of these cards have declined significantly. For example, Malswitch cards in Malawi costs about US\$9 as compared to smart cards used in mid 1990s in Swaziland that costs USD 50 -75.

The POS devices are now upgraded to provide electronic funds transfers instantly as noticed in some Pacific Island countries such as Vanuatu and Papua New Guinea. For example, a

person living in a remote area opens an account and is issued an electronic funds transfer point of sale (EftPOS) card. The bank client then makes a deposit, withdrawal, or payment to another account by presenting the card to an agent—a local store owner—who swipes the card on an eftPOS device, which is connected via cell phone to the bank’s system by a special purpose router known as a switch. The bank’s system approves the transaction, and the agent exchanges any cash with the client and provides a record with a confirmation code. The bank’s system then adjusts the client’s and the agent’s accounts. Periodically, the agent travels to a bank branch to manage cash on hand with the agent. In a variation of this model, a client may use a cell phone to check account balances, make payments to other accounts, or receive confirmation of a deposit to an agent.

*E-banking in Vanuatu*

In Vanuatu, the third poorest country in the Pacific region, only 13% of the rural adult population is found to have bank accounts while an estimated 92,000 demand such financial services. Donor efforts to scale up services through establishment of bank branches were found to be less cost effective to reach remote areas and outer islands. Therefore, to serve smaller and more remote populations, new and innovative approaches were required. A large international commercial bank in the country, ANZ recently introduced a banking van to provide mobile banking services to rural areas on the main island of Efate. These mobile banks also provide child savings accounts. In addition, the National Bank of Vanuatu (NBV) is introducing electronic funds transfer point of sale (eftPOS) cards, or SmartCard technology in rural areas to provide services such as opening and operating savings accounts, and money transfers. It also intends to extend the delivery mechanism to microlans. The new delivery technology is expected to expand banking services to rural and remote areas. The delivery model uses bank agents, such as local store owners, in rural communities that are provided with the necessary technology and communications equipment to help clients open and operate savings accounts and effect transfers.

The current telecommunications system in Vanuatu is characterized by relatively low levels of access to rural and remote areas, and by high costs. It is expected that alternatives such as VSAT (Very Small Aperture Terminal) and Iridium (satellite-based) technologies can bring connectivity to remote areas.  
Source: ADB, 2008.

### **III. Reaching the unbanked and remote areas with innovative financial service delivery – Mirage or Reality?**

Branchless banking is indeed coming of age and is now considered as an effective mechanism to reach rural and remote areas. While many branchless banking options exist, enthusiasm remains high for mobile phone banking to reach the unbanked in rural and remote areas.

But, evidence shows that while few unbanked have begun using branchless banking including mobile phone banking, it is yet to demonstrate pro-poor, pro-growth impacts for households, communities and national economies (Ivatury and Mas, 2008). Results from recent studies show that less than 10% of all mobile phone banking customers in South Africa can be considered as poor and unbanked and live in rural areas (Ivatury and Pickens, 2006). In areas served by WIZZIT in South Africa, it was observed that users of WIZZIT’s mobile banking service on average had a higher income and higher education levels and were more often formally employed, urban, and older compared to the banked but non-mobile bank users. In Brazil, only about 5% of previously unbanked clients in rural Brazil use a banking agent linked to branchless banking to make payments. M-PESA clients are found to

be the young, male, urban migrants (Ivatury and Mas, 2008). It, therefore, appears that mobile phones are not yet used as a financial service delivery mechanism in rural and remote areas.

Many unbanked and rural poor, however, tend to use prepaid mobile phone airtime. Examples include pre-paid airtime that is used as a remittance mechanism in Uganda, Democratic Republic of Congo and Kenya. These are generally used by the unbanked poor to affect money transfers. For example, a son working in Kinshasa can remit US\$10 to his mother in the village by buying a \$10 prepaid airtime card. But, instead of entering the code into his own phone, he should call the village phone operator (“phone ladies” operating out of small kiosks) and read the code to her. She will then use the airtime for her phone but will complete the transaction by giving the man’s mother the money, minus a small commission. Whereas this provides an option to swiftly remit money, it also underscores the costly methods that are in place for the unbanked in rural areas. An estimate of the costs of prepaid airtime in Uganda shows that it is at least 25% of the value sent due to VAT, operator’s discount, and a commission for the phone ladies (Pickens, 2007).. While the pre-paid option is better than the informal remittance mechanisms, it still is costly and erodes the benefits for the unbanked in rural areas.

*The above findings could dampen our enthusiasm for using m-banking to expand into remote areas, but, potential exists.....*

The new generation of m-banking as a service delivery model hinges on wireless communication technology. It is now estimated that with improved technologies, wireless penetration rates will reach about 30% in Africa and 40% in Asia Pacific from the current 4 and 13%, respectively (Mas and Kumar, 2008). Some predict that there will be close to 200 million mobile subscribers in Africa by 2010 of which one third will reside in rural and remote areas. This will create competition for the mobile subscribers. CGAP now predicts that, in three years, mobile phone banking will be used by large numbers of unbanked as a result of such competitive market entry. The competition is expected to motivate many existing and new service providers to expand beyond urban areas and move into rural and remote areas. There are some early signs of such trends. Globe Telecom’s GXI Inc., which offers the G-Cash mobile wallet service in the Philippines is now moving beyond the pilot phase of registering outlets to accept or dispense G-Cash in rural areas. In Mongolia, it was recently announced that Xac bank will reach about 300,000 Mongolians through a new mobile phone banking service to be launched by XacBank. This is expected to be offered through a network of local merchants that will handle the cash, and to provide banking services to about forty percent of Mongolians, mostly farmers and nomadic herders, who use only cash today to take advantage of secure financial services. The service is expected to extend services such as deposits, withdrawals, loans, remittances, and cash transfers in rural and remote locations. Government programs in India, Russia, Malawi, South Africa, and Brazil now distribute social protection payments to rural beneficiaries through branchless banking channels using POS agents and post offices. These initiatives raise optimism for using m-banking to reach the unbanked and remote areas.

But, such trends require accelerated rates of adoption of mobile phone banking by the unbanked. Culture and levels of human capital tend to play a major role. There is a need for positive reinforcements through consumer education to improve adoption of mobile phone banking. Currently, there remain many uncertainties regarding its ability to substitute for human interactions, safety and ability to provide high value for the clients. About half of those surveyed in South Africa tend to prefer human interactions over an efficient electronic device due to limited trust on electronic devices (Ivatury and Pickens, 2006). The many failed pyramid schemes that uses agents have also raised suspicions on agent based branchless banking. The survey also revealed the need for dissemination of information to educate consumers on the modalities, safety features and costs of using such delivery mechanisms to dispel myths.

“I keep reminding myself that remittances have been earned through considerable sacrifice and are helping to build the most cherished dreams of the beneficiaries. We face not only an exciting business opportunity but also a heavy social responsibility”. – Napoleon Nazareno, CEO, SMART Communications (SMART cash), the Philippines, at the Mobile Money Summit held on May 15-16, 2008, in Cairo, Egypt

Mobile banking is not just an additional feature of telecommunications – it’s also a social responsibility (see quote above from Nazareno, SMART communications). This calls for some level of consumer protection and prudential regulations. Regulators have thus far been careful and supportive of branchless banking. But, uncertainties remain as to the future role of regulations. There is trepidation among service providers that regulators may become heavy handed in future that could stall innovations in this area. The recent developments in regulations in India raise some concerns regarding the universal banking services that could be provided through mobile phones - Reserve Bank of India recently halted m-payment schemes initiated by many telecommunication operators and banks including ICICI and Yes Bank. While they are allowed to inform their customers about the credit and debit balances, they are now restricted to offer any mobile phone based money transfers until explicit approval from central bank is issued (Reserve Bank of India, March 2008). There is a need for regulators to keep pace with the innovations and provide an enabling environment for the growth of mobile phone banking in future.

## IV. Where to... from here?

There is no doubt that there exists vast scope for branchless banking as a service delivery mechanism to improve access to banking services for the unbanked and in remote areas. But challenges are also enormous.

Major lessons that are emerging from the current innovations lead us to the following:

*Mobile phone banking and information based technologies to deliver financial services is not for every one and every location.* There is a clear need to understand the cultural context and demand for financial services by the unbanked and in remote areas. What may work in the Philippines may not be feasible in Afghanistan or Mongolia. The availability of reasonably priced tele-net work connections on a reliable basis is essential. Also, younger clients would

be more willing to use m-banking, especially for sending or depositing money, compared to older clients. Some studies also indicate that gender differences may exist in use of mobile banking in some religiously strict countries and communities. While m-banking is used primarily for payments and remittances, in some cultures, delinquencies in utility payments are tolerated thus limiting use of m-banking to effect payments. It is to be remembered that technology to deliver services is only an enabler – it needs to be supported by products and services that clients value the most in a given context.

*The technology should be easy to understand and use, and cheaper to acquire and maintain.* Still, ATM machines and mobile vans are costly to acquire and use for many small financial service providers. But, with technological advancements in fiber optics and telecommunications, mobile phones have become cheaper to acquire even in many rural areas. However, banking is generally daunting for many less educated, and even more so when it involves mobile phones with complicated key pads and literacy required to send short mail messages (SMS). While agent based business models could help simplify the process to an extent, it nevertheless requires the client to develop confidence on the ability of the equipment to transfer funds. The frequent system failures of many mobile phones also reduce clients' confidence in such delivery methods. .

*Scope and scale economies are essential to effectively utilize these new delivery mechanisms.* Effecting larger volume of multiple types of transactions using the same channel is the key to bring costs down and increase the value proposition for the clients. Some mobile banking pilots are observed to fail due to limited scalability. Strategic partnerships with various types of technology and financial service providers will be valuable to achieve scale economies. While the telecommunication providers bring the technology and business model to reach rural and remote areas, the banks bring the expertise, reputation and compliance with regulations to provide financial services.

*Basic to all is, none the less, building trust in banking services to effect transactions and store value.*

*It is important that adequate legal and regulatory measures are in place to ensure consumer protection and public confidence in financial services and markets.* An innovation such as mobile phone banking could aim at financial inclusion of the unbanked. It also involves partnerships with many stakeholders such as telecommunications companies and banks with various objectives. It becomes the responsibility of the regulators to monitor such partnership developments lest they affect the existing financial system's stability. However, existing bank regulations appear to be less suitable for mobile phone banking. New regulatory approach and guidelines are, therefore, required. In doing so, rigidity could stifle further innovations. Also, high costs of compliance would raise the entry barriers thus limiting competition that is essential to improve services at reduced costs. In some extreme cases, some service providers could limit their market to only reaching urban areas and the banked. For example, the recent Know Your Customer (KYC) requirement in Ghana is observed to discourage mobile phone bankers to use agents to reach rural clients.

Many recommend that the best course of action is to follow a wait and regulate approach to incrementally regulate the industry, and also to consider proportionate regulation that addresses the inherent risks without preventing innovative services such as mobile banking from developing. However, developing such a proportionate regulatory framework is difficult for regulators, particularly given the dearth of best practices in regulation of the provision of financial services by non-banks and through nontraditional delivery mechanisms. There are now some diagnostic tools available for analyzing country-specific regulatory frameworks for mobile phone banking.<sup>8</sup> These tools address key legal issues such as:

1. Use of Agents to Perform the Teller’s Function: Much of the cost savings from using mobile phones and other branchless banking services comes from performing basic financial transactions at retail agents instead of bank branches. Using agents is also critical in expanding access in countries where many poor citizens live far from the nearest bank branch. To take full advantage of this delivery mechanism, banks and mobile network operators must be permitted to outsource key financial activities to agents, including cash-in (deposit of cash), cash-out (withdrawal/disbursement of cash), and account opening. However, outsourcing cash handling and customer due diligence procedures to non-bank personnel creates risks, including risks to the customer (fraud by retail agent, inability to seek redress for complaints), risks to the bank (fraud by customer or retail agent, robbery of retail agent, risk to reputation of bank if retail agent underperforms), and risks to the retail agent (robbery, fraud by customer, insufficient/excess liquidity). Therefore, a financial services regulatory framework that permits outsourcing to agents should fully address these risks. At the same time, many countries strictly prohibit the outsourcing of “core” banking services – such as deposit-taking and account opening – under any circumstances. Such an approach can stop innovation in its tracks or significantly limit the potential for these delivery mechanisms to reach the poor.
2. Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT): In response to the heightened attention being paid to money laundering and terrorist financing in recent years, countries have strengthened their AML/CFT frameworks. Generally, banks and other parties engaged in account opening, money transfers, and deposit-taking must know their customers by verifying that the customer is who she says she is. In most cases, country regulations require an official identity document, and in the case of account opening, proof of residence. Such official documents may be difficult for poor people to produce in certain countries, thereby limiting their access to financial services. One way to address this is through a risk-based AML/CFT legal framework that provides for greater flexibility in the case of small-

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<sup>8</sup> For example, the CGAP/DFID report “Regulating transformational branchless banking: mobile phones and other technologies to increase access to finance” offers various recommendations for developing an enabling environment for branchless banking. CGAP and DFID have also developed an in-depth diagnostic tool that enables the user to analyze key legal issues that may affect branchless banking initiatives in a particular country context. This diagnostic tool is available from CGAP upon request.

value accounts. In South Africa, for example, a customer who lacks an official identity document can have his identity verified through introduction by another customer of the bank.

3. Consumer Protection: Consumer protection concerns are heightened in the case of mobile and agent-assisted banking, where customers often deal with a non-bank employee far from a branch. Under such circumstances, it may be impossible for the customer to resolve a dispute directly with an agent. In addition, it is more difficult to ensure that agents comply with requirements with respect to disclosure of interest rates, fees, and other terms of agreements. To ensure that consumers are adequately protected, regulators should hold the principal (whether a bank or mobile network operator) responsible for the actions of its agent when the agent is acting on its behalf. This is the approach taken in many countries. Pakistan, for example, requires that agreements between a bank and its customers “clearly specify that the bank is responsible to the customer for acts of omission and commission of the Agent.”<sup>9</sup>

Other important legal issues include: regulation of the issuance of electronic money (e-money); payment system regulation; regulation of the provision of financial services by non-banks; data privacy regulation; regulation of e-commerce and e-security; and taxation of financial services.<sup>10</sup>

There is also a clear need to engage in constructive dialogue that involves service providers and regulators to build confidence and find ways to comply with AML/CLT requirements. For example, Grameen Phone in Bangladesh and Safiricom in Kenya (M-PESA) regularly interact with the regulators to provide reports and updates on their activities. Smart Communications in the Philippines (offering SMART Money) voluntarily allowed the central bank to audit their activities. While much of the current dialogue has been initiated by proactive service providers, there is a clear role for donors to play in facilitating such interactions between the regulators and service providers.

*Need donor support.* While private sector appear to be motivated to invest in such advances, it is also essential to have independent champions such as donors. The donors should encourage innovations in such delivery mechanisms with special focus on remote areas and to document lessons for refinements. They should encourage systematic study of and documentation of lessons emerging from various technological innovations, partnership innovations and policy and regulatory innovations, and disseminate the learning to wider community. The recent activities by many multilateral and bilateral donors, and private foundations, including CGAP and Bill & Melinda Gates Foundation, are a step in the right direction.<sup>11</sup>

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<sup>9</sup> State Bank of Pakistan, Branchless Banking Regulations for Financial Institutions Desirous to Undertake Branchless Banking,” p20 (March 31, 2008) ([http://www.sbp.org.pk/bprd/2008/Annex\\_C2.pdf](http://www.sbp.org.pk/bprd/2008/Annex_C2.pdf)).

<sup>10</sup> In-depth analysis of all key legal issues related to mobile phone banking and branchless banking is outside of the scope of this paper. For more information on these topics, see CGAP/DFID, “Regulating transformational branchless banking: mobile phones and other technologies to increase access to finance.”

<sup>11</sup> CGAP with the support of the Bill & Melinda Gates foundation has set up a fund to test and financially support a small number of m-banking related pilots to deliver financial services.

The blue print appears to be in place. But, it will be a while before considerable results are achieved in using these innovative delivery mechanisms to expand access to remote areas and the un-banked. Building adequate telecommunication and banking infrastructure to support these mechanisms and a conducive enabling regulatory environment all play a major role in reaching sufficient scale for these mechanisms to be cost effective to reach the base of the pyramid and remote areas.

## Annex 1: Selected Innovative Products, Services and Institutional Arrangements for reaching the Rural and Remote Areas

Items	Examples
<b>I. Micro-loans</b>	
Youth	South Africa, India
Sharia complaint (Murabaha)	Afghanistan (FINCA)
Housing	Rural Housing Loan Fund (RHLF) in South Africa
Micro-irrigation	India (IDE)
Micro-energy	India (SELCO); Uganda (FINCA)
<b>II. Micro-savings</b>	
Group savings	Bangladesh (BT), Peru, India
Individual savings (fixed deposits, sight deposits)	Bangladesh
<b>III. Micro-leasing</b>	
Sharia complaint (Ijara)	Yemen, Malaysia
Equipment leasing	John Deere in Mexico, Uzelmalhosh Leasing in Uzbekistan, AgroMash leasing in Kazakstan, DFCU in Uganda, Net Work Leasing Company in Pakistan, CECAM in Madagascar, ANED in Bolivia
<b>IV. Micro-insurance</b>	
Crop insurance (index based)	Malawi (OIBM), India (BASIX)
Health insurance	Pakistan (AKAM), Uganda (FINCA)
Livestock insurance	Mongolia
Life insurance	SACCO called BISCOL in Nepal
<b>V. Micro-remittances</b>	
	Philippines, Ecuador, El Salvador, Guatemala, India
<b>VI. Micro-pensions</b>	
	South Africa, India, Brazil
<b>VII. Micro-payments</b>	
Utility payments	Malawi, Uganda, Kenya
Salary and wage	Kenya, Malawi
<b>VIII. Institutions</b>	
Apex	Indonesia (Mercy corps's Bank of Banks), Bangladesh (PKSF)
Member owned institutions	Credit unions, Village savings and credit associations, SACCOS, Self-help groups
Linkage banking (formal-informal; formal-semi-formal)	India; Philippines

## Annex 2. Comparison of Selected Mobile Phone Banking

	SMART	G-cash	M-PESA	WIZZIT
Country	Philippines	Philippines	Kenya	South Africa
Exchange rate to 1 USD	42 PHP	42 PHP	64 KES	6.8 ZAR
When started	Dec.2003	Nov.2004	Apr. 2007	Nov. 2005
Who brands the service	Smart communications as smart money	Gxchange (GXI), a Globe telecom, as Gcash	Safaricom, a Vodafone group affiliate, as M-PESA	WIZZIT, an independent company (with stakes at IFC, Africap and Oika credit)
Services offered	Prepaid accounts	Prepaid accounts	Prepaid accounts	Individual exemption 17 accounts
Who issues	Banco de Oro	Held by G-cash	Held by M-PESA	Held by South African bank of Athens
Licensing	Full banking license	Licensed as remittance company	Unlicensed	Full banking license
Account opening requirements and fees	Free for mobile banking plus PHP220 charge for card; no minimum deposit	Free; no minimum deposit	Free; no minimum deposit	ZAR 40 for smarter package (card and user manual); no minimum deposit
Multiple accounts	Permitted	Not on same phone number	Not on same phone number	No
Limits on account size	max.PHP50,000 on wallet	Max. PHP40,000 on wallet	Max. KES 50,000	Max. ZAR 25,000
Recurrent maintenance charge	Annual subscription charge for debit cards	No	No	No
Remuneration for accounts	None; issuing bank keeps float	None; GXI keeps float	None; Saficom keeps float	Interest paid for large balances; float help by the Bank but interest on float is with WIZZIT
Limits on frequency of transactions	Yes. PHP 100,000 per month	Yes. Minimum PHP100 per transaction; maximum 10,000 per transaction, 40,000 a day, and 100,000 a month.	Yes; max. KES 35,000	Yes; Max. ZAR 25,000
Fee for person to person transfers	PHP 2.5	User pays no charge but PHP 1 for SMS	KES 30 plus SMS charge	ZAR 2.99 to other WIZZIT clients; ZAR 4.99 plus SMS charge for non-WIZZIT clients
Can send money to nonusers?	No	No	Yes;	Yes;
Can receive money from nonusers	Yes.	No	No	Yes
Allow payments to third party bank accounts?	No	No	No	Yes to any bank
Devices used by merchants for cash out or purchases	POS or mobile phone	Mobile phone	Mobile Phone	POS
Fee for cash deposits with a merchant / agent	user pays 1% amount deposited through cashier and free if with ATM	user pays 1% amount deposited with a minimum fee of PHP10	Free;	user pays 1% amount deposited (minimum 4.99 ZAR); flat ZAR 4.99 for checks deposited.
Fee for cash withdrawals with merchants / agents	ATM charge of PHP3 to 11, depending on whose ATM is used	user pays 1% amount deposited with a minimum fee of PHP10	KES25-170, depending on size of transaction	At ATM: ZAR4.99 plus ZAR0.99 per ZAR 100; ZAR 1.99 for cash back at merchants
Bill paying	Yes	Yes	Not applicable	Yes
Buy airtime	Yes	Yes	Yes	Yes
Direct salary deposit	Yes	Only for rural bank employees	Not applicable	Yes
International remittances	Yes	Yes	Not applicable	No
Account management	Yes	Yes	Yes	Yes

Source: Mas, Ignacio and Kabir Kumar, 2008, "Banking on Mobiles: Why, How, for Whom?", Washington, DC: CGAP, Focus note no. 48, June 2008. [www.cgap.org](http://www.cgap.org).

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