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MOBILE PHONE BANKING FEASIBILITY ASSESSMENT IN EL SALVADOR

microREPORT #146

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EXECUTIVE SUMMARY

Through its Financial Services Program for SMEs project, USAID/El Salvador is supporting expansion of financial services to underserved markets and the introduction of viable loan products that better serve SMEs' needs. Based on discussions on mobile phone banking with many of the program's partner institutions, it was determined that interest exists among both commercial banks and NBFIs in exploring mobile banking applications that would allow them to deliver financial products and services to both new and existing clients more cost-effectively. Building on this interest, USAID's Microenterprise Development office financed this feasibility assessment on mobile phone banking through the AMAP Knowledge Generation project managed by Chemonics International. The objective of this diagnostic was to determine the feasibility of developing mobile phone solutions to expand access to financial services to under-banked and un-banked Salvadorans in all parts of the country. Specifically, the study assesses available technologies and the regulatory and policy environment for m-banking, as well as the existence and basic characteristics of potential partners and distribution networks with whom USAID could work to promote m-banking within its target population. The study consisted of both desk research and field work interviewing financial institutions, IT and telecommunication providers, the financial authorities, and potential clients.

The study finds that there is a generally propicious environment for the ongoing development of m-banking in El Salvador—two initiatives are already operating—though a number of issues need to be addressed to promote m-banking's long-term success and expansion to unserved and underserved populations. There are also a wide-range of parnters with whom USAID/El Salvador could collaborate and a range of activities it could carry out in support of m-banking should the Mission determine that m-banking fits within its programmatic priorities.

KEY CONCLUSIONS

El Salvador Meets Most of the Pre-Requisites for M-Banking. Experience worldwide has determined that there at least six pre-requisites for the development of m-banking: 1) strong core banking systems, 2) a broad telecommunications network, 3) affordable ICT-enabled devices, 4) an appropriate legal and regulatory environment, 5) a secure approach to exchanging electronic transactions between devices, and 6) a network of conversion points for cash in/cash out transactions. El Salvador rates favorably against these pre-requisites, though a number of regulatory, as well as design and marketing issues need to be addressed to promote the long-term success m-banking initiatives.

Supportive ICT and Telecommunications Services are Available. El Salvador enjoys access to first rate ICT firms with any and all of the hardware and software and technical support services necessary to develop m-banking. The regional or global nature of these ICT firms creates the opportunity to import existing mobile phone banking platforms and applications for easier introduction into El Salvador, as well an opportunity for USAID to support a regional m-banking project. However, the unequal development and use of ICT among FIs could slow the introduction of m-banking in some of these institutions, as could the basic nature of cell phones used by low-income populations (though the majority support text messaging), and high cost of internet-work cell phone services.

The Regulatory Environment is Generally Conducive to Development of M-Banking. It does not appear that there are any barriers to introducing mobile banking per se. That which is not expressly prohibited by law—and mobile phone banking is not—is permitted, though the Central Bank does need to authorize any new operation. However, the absence of clear guidelines

for non-bank agents and the concerns of the Superintendent of Financial Institutions regarding the risks of m-banking need to be addressed for the sustainable development of this service.

Various Mobile Phone Banking Models are Viable in El Salvador. Both individual (single bank) and shared (multi-bank) models of m-banking are present and viable in El Salvador. Promoting greater use of a shared model would be advantageous from a cost perspective. However, there is clear resistance to a shared model among many FIs. The key issue seems to be concern about maintaining the confidentiality of each FI's client information, an issue that can, and should be addressed.

POSSIBLE PARTNERS AND CORRESPONDING USAID ACTIVITIES

There appear to be a wide range of potential FI partners for USAID activities supporting m-banking in El Salvador. These include leading banks, second tier banks, integrated, federated NBFIs, and traditional MFIs. While leading and second tier banks may benefit most from activities that expose them to lessons learned and best practices in m-banking worldwide, assistance in designing appropriate marketing and customer service strategies for MSMEs, and possibly support for designing and introducing savings applications, a service none of the current m-banking providers is considering. Federated NBFIs, like those of FEDECREDITO might benefit from assistance linking their MIS's to the federation's core banking system, which would facilitate the introduction of m-banking through the federation. The federation might also benefit from assistance brokering an alliance with a third party m-banking provider. Finally, USAID/El Salvador could assist traditional MFIs in brokering alliances to serve as cash in/cash out conversion points for regulated m-banking providers.

In addition, the Superintendency of Financial Institutions expressed interest in assistance 1) analyzing current laws and regulations to identify their adequacy for managing m-banking risks; 2) developing AML protocols for m-banking and payment systems; and 3) developing appropriate supervisory tools for m-banking and training regulatory and supervisory authorities. USAID could also work with the SSF or the national banking association, to develop non-bank agent regulations.

POSSIBLE NEXT STEPS

1. Disseminate a public version of this report: Many of the FIs and companies interviewed expressed interest in receiving the findings of this study.

2. Develop a business case for a shared m-banking model: Such a study could be used by USAID to help overcome resistance to such a model, which could more cost-effectively and rapidly expand m-banking services to unbanked and underbanked populations.

3. Conduct an in-depth study of the current legal and regulatory framework for m-banking in El Salvador: This study should include analysis of regulation of non-bank agents and would benefit from a comparative analysis of m-banking regulations in other countries.

4. Develop a short, accessible briefing note on regulating m-banking: This could serve as an educational tool for both the financial authorities and other key stakeholders.

5. Explore the potential for developing a regional m-banking initiative to support country-wise implementations: USAID may wish to explore this possibility further given the regional and/or global nature of most of the IT and mobile phone providers operating in El Salvador.

I. INTRODUCTION

El Salvador has a sophisticated banking sector that is increasingly serving micro, small, and medium-sized enterprises (MSME), as well as a wide- range of non-bank financial institutions (NBFIs) serving micro and small enterprises (MSEs) in urban and rural areas. According to at least one indicator—deposits/GDP—El Salvador has one of the highest bancarization rates in Latin America (41.49 percent)[1]. Despite these encouraging signs, access to financial services in El Salvador is clearly still far from universal.

While bancarization rates in El Salvador are low relative to developed countries, the country has been experiencing rapid growth in mobile phone coverage and usage, from approximately 750,000 lines in 2000 to over 6,000,000 in 2007 (See Annex 2). As many key informants observed, "there are more cell phones than people in El Salvador," (according to the 2007 census El Salvador has 5,744,113 inhabitants). Consequently, mobile phone banking (also known as m-banking) may be a cost-effective and potentially profitable new delivery mechanism to help increase outreach to under-banked or un-banked populations in El Salvador, particularly in rural areas, as it is proving to be in other countries.

Through its Financial Services Program for SMEs project, USAID/El Salvador is currently supporting expansion of lending and other financial services to underserved markets and the introduction of viable loan products that better serve SMEs' needs for financing. Of the nine financial institutions (FIs) with which the project works, six are banks, one is a regulated federation of non-bank financial institutions (NBFIs), and two are unregulated NBFIs working to transform into regulated institutions. Based on presentations and informal discussions on mobile banking delivered to many of these partner institutions, there is demonstrated demand among both commercial banks and NBFIs in exploring mobile banking applications that would allow them to deliver financial products and services to both new and existing clients more cost-effectively. Building on this interest, USAID's Microenterprise Development office financed this feasibility assessment on mobile phone banking through the AMAP Knowledge Generation project managed by Chemonics International which highlights the latest innovations and best practices in microfinance worldwide. This is the third mobile phone banking feasibility assessment conducted under the AMAP KG project.

The objective of this diagnostic is to determine the feasibility of developing mobile phone solutions to expand access to financial services to under-banked and un-banked Salvadorans in all parts of the country.

Specifically, the diagnostic assesses:

- Available technologies to support mobile banking solutions within the telecommunications and financial sectors, including the accessibility of these technologies to the target market;
- The regulatory and policy environment to determine if it is supportive or can be developed to support mobile phone banking solutions; and
- The existence and basic characteristics of potential partners and available distribution networks (financial institutions and retail agents) through which mobile banking services would be delivered.

[1] Cordero, Guido, "Modelos de Negocios Exitosos en El Salvador: Los Segmentos de la Micro y la Pequena Empresa," USAID, October 2007.

II. METHODOLOGY

This rapid diagnostic was comprised of three phases:

1. Pre-fieldwork desk research: This included review of documents related to telecommunications sector, IT services, the regulatory environment, and mobile phone usage in El Salvador.

2. Fieldwork in El Salvador conducted from August 11-22, 2008. During the fieldwork in-country the consultants interviewed:

    - Financial Institutions and Associations – Six banks (Banco Agricola, Banco de America Central, Banco Hipotecario, HSBC, Banco Promerica, and Scotiabank); the national banking association (ABANSA); a regulated federation of NBFIs (FEDECREDITO); one soon to be regulated NBFI (Apoyo Integral); and an MFI network (ASOMI).
    - The Superintendency of Financial Institutions
    - Telecommunications Companies: Digicel, Telecom/Claro
    - IT Firms: SIFCO, SYSDE, IDS, Movibanca
    - A Payment system provider: ATH
    - Clients of Financial Institution – a non-representative sample of 26 clients.

A complete list of institutional interviewees is provided in Annex 1.

3. Post fieldwork analysis: At the end of the field work phase the consultants presented preliminary findings to USAID/El Salvador. The recommendations and this report were finalized after discussions with USAID/El Salvador, USAID/Washington, and the Financial Services for SMEs project team.

We would like to emphasize that this diagnostic was indeed rapid and not comprehensive, and hence may include errors. Further, the Salvadoran banking and telecommunications sectors are changing rapidly. Consequently, follow up work may be needed to confirm that the conclusions and recommendations are still appropriate.

III. GLOBAL CONTEXT: ICT TO EXTEND ACCESS TO FINANCIAL SERVICES

In this section we cover the basics of m-banking. We begin by briefly describing the emergence and evolution of branchless banking, of which mobile phone banking is just one option. We then present the "ABCs of Mobile Phone Banking," including the diverse models of m-banking and the advantages it can offer both financial institutions and clients.

A. THE EVOLUTION OF BRANCHLESS BANKING

Both banks and non-bank financial institutions in developing countries have increasingly turned to information and communication technologies (ICT) both to a) increase the convenience of banking for existing clients, and b) profitably expand access to financial services to underserved market segments, such as MSMEs. Automated Teller Machines (ATMs) and point of sale (POS) devices are commonly used by banks, and increasingly by NBFIs to expand outreach without the significant investment generally needed in physical infrastructure for a traditional branch office (See Annex 3 for examples of how developing countries are using ATMs and POS devices to expand access to finance). Personal Digital Assistants (PDAs), like Palm and even mobile banking units[2] have also been used by NBFIs to facilitate access for marginalized market segments.

BANK-TELECOM COLLABORATION: ATM & POS NETWORKS

The first ATM dates back to 1939, though it only came into popular use in the mid 1980s. Modern day POS devices are descendents of stand-alone cash registers. The first computer-driven POS systems were introduced in the 1970s. Today, POS systems can be found in most merchants worldwide. The telecommunications industry played a key role in the development of both ATM and POS systems, enabling these devices to be linked in networks. As a result, clients can access their bank accounts through a debit or credit card at access points worldwide. With the evolution of wireless communications, POS devices have become mobile, increasing the range of branchless banking options.

These technologies, along with Internet banking, which allow for financial transactions outside of the traditional bank branch framework—collectively known as branchless banking—are not new, though they have certainly been improved upon over the years. Even mobile phone banking, the newest, and a rapidly growing ICT-based banking solution in developing countries, is grounded in an established tradition of collaboration among financial institutions, telecommunication firms, and payment service providers (See Box above). It is the convergence of these sectors that has made branchless banking a reality.

In Annex 4 readers can find a comparative analysis of the pros and cons associated with these diverse information and communication technologies, as well as the general requirements associated with each., In the following section we provide greater detail on mobile phone banking – how it works, its advantages, and the diverse models of m-banking that exist – followed by a discussion of existing initiatives around the world.

CHEAPER, SAFER TRANSACTIONS

Like ATMs and POS terminals, use of mobile phone technology can significantly reduce the costs of expanding access to finance by eliminating the need for expensive investments in traditional bank branch infrastructure and compliance with regulations for branch creation and operation. According to a Global Mobile Commerce Forum report, the average mobile banking transaction cost is $0.08, compared to $1.07 for a branch-based transaction, and is even more economical than Internet banking. Mobile technologies also reduce the risks of cash transactions in isolated or conflict prone locations. M-banking also has the potential to dramatically reduce banking costs for clients, reducing or eliminating the need to spend time and money traveling to a bank branch.

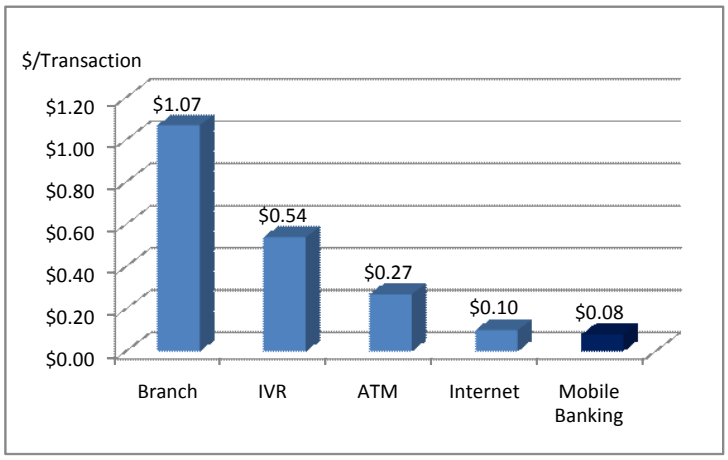
B. THE ABCS OF MOBILE PHONE BANKING

As the name suggests, mobile phone banking makes it possible for customers to conduct virtually any banking activity using their mobile phone. How is this possible? Mobile phones can be equipped with the functionality of bank cards,

[2] By mobile banking units we are referring to banking units on wheels, as opposed to mobile *phone* banking.

POS terminals, ATMs, and computer-based Internet banking, rendering these other devices unnecessary. Like a credit or debit card the memory card or chip in a mobile phone can store both a client's personal identification and account information. In fact, the portable memory card in GSM[3] phones—the subscriber identity module, or SIM card—is actually a smartcard. Like a POS terminal, a mobile phone can be used to request and receive authorization for a financial transaction—most commonly through text messaging. In combination with a merchant's cash register, it can be used like an ATM to withdraw or deposit cash. And when equipped with wireless connectivity, a mobile phone can be used for Internet banking.[4] As noted in the Box and Graphic 1 below taking advantage of the functionality and wide-spread use of mobiles phones can reduce the costs and risks associated with banking for both the financial institution and the client. In fact, it may be the least expensive of all delivery mechanisms for banks.

Graphic 1: Average Transaction Costs of Banking Channels



Source: Global Mobile Commerce Forum

Pre-Requisites for Mobile Phone Banking. In addition to adequate effective demand, which should be assessed carefully, there are six pre-requisites to the sustainable development of mobile phone banking:

1. Adequate Core Banking Systems in FIs – the transactional nature of m-banking, like other branchless banking channels, demands a solid management information system (MIS), preferably one that is centralized and integrated. FIs that lack an adequate MIS may find it more cost-effective could address this problem by outsourcing their MIS functions to a third-party provider (an application service provider, or ASP).
2. A Telecommunications Network – with widespread coverage both in terms of geographic outreach and market penetration among target populations.
3. A Network of Service Points for cash in/cash out transactions, i.e. non-bank agents

[3] "GSM (Global System for Mobile communication) is a digital mobile telephony system that is widely used in Europe and other parts of the world.It is the most widely used of the three digital wireless telephony technologies (TDMA, GSM, and CDMA)," http://searchmobilecomputing.techtarget.com/sDefinition/0,,sid40_gci213988,00.html

[4] Mas, Ignacio and Kabir Kumar, "Banking on Mobiles: Why, How, for Whom?" Focus Note No. 48, CGAP, June 2008.

4. ICT-Enabled Devices – including POS, ATMs, and/or mobile phones in service points and affordable, technologically adequate mobile phones for clients.

5. A Secure Approach to Exchanging Electronic Transactions between Devices

6. An Appropriate Legal and Regulatory Environment – that promotes and encourages responsible, accountable m-banking services, and allows the use of non-bank agents as points of service.

Two other conditions are desirable, but not mandatory: an inter-bank switch and source of stored value cards. The findings of this study indicate that in most ways, El Salvador meets these pre-requisites.

Bank vs. Nonbank Based Mobile Banking Models. Mobile banking models may be bank-based or nonbank based.[5] The defining characteristic of a bank-based model is that the financial transactions occur between bank accounts issued and held by a regulated financial institution. For example, a customer may request a "transfer" from his or her savings or checking account to the bank account of a pharmacy to purchase goods. In a nonbank based model, virtual accounts (electronic money) are issued by a nonbank entity, such as a telecommunications company, and are stored on the server of that company.

All of the m-banking initiatives currently operating In Latin America—including the two in El Salvador (Movibanca, a three-bank initiative), and those in Bolivia (Banco Bisa's Bisa Movil) and Peru—are bank based. In countries in other regions, notably the Philippines (Gcash), and Kenya (M-Pesa), one finds nonbank based models.

While the regulatory issues related to these two models are quite different in many ways (in a bank based model all transactions are managed by licensed, regulated financial institutions, in a nonbank model they are not), there are also important similarities:

- Cash In/Out Conversion or Service Points: All initiatives are being developed in combination with cash in/cash out networks, either using POS-based non-bank agent networks or simply the FI's branches. In fact, the importance of developing an extensive network of conversion points, (including non-bank agents), in order to expand and deepen financial outreach through m-banking is a key lesson learned and best practice gleaned from experience worldwide. Additional lessons learned from m-banking and other ICT-enabled financial service solutions, many of which are reflected in the list of pre-requisites for m-banking described in the previous section, can be found in **Annex 5.**
- The Base platform: All initiatives are based on an SMS platform (text messaging or Short Message Service), which is the simplest and cheapest platform and is the only platform available in all inexpensive mobile phones used by low-income people.[6]
- The Cellular Device Application: While the more advanced initiatives are looking for, and actually trying to implement, more user-friendly applications (e.g. Smart Money and

[5] For simplicity's sake, we describe the "pure" form of each model. However, it is important to recognize that hybrid models do exist.

[6] Wizzit is now using the USSD (Unstructured Supplementary Service Data) platform, which is an enhanced platform either in functionality and security capabilities. And, therefore demands more expensive resources either for implementers (USSD platform should be in place at mobile provider), and for customers as well (more expensive phones should be used).

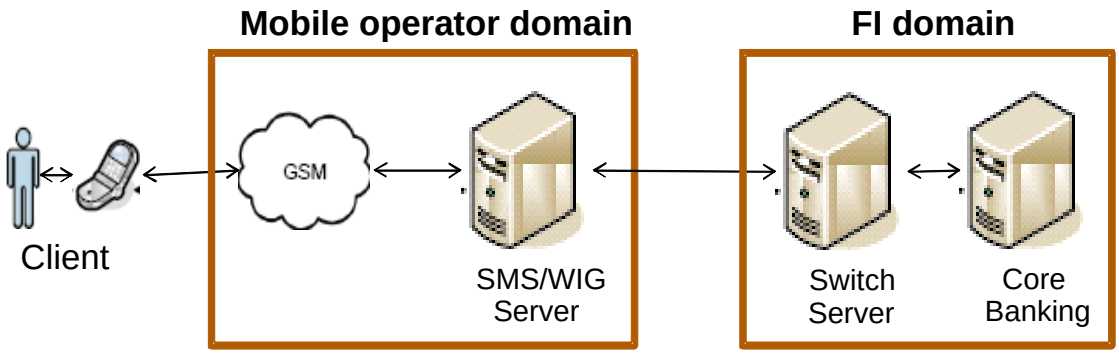
MPesa with a menu-based, STK application[7]), the majority are still text based applications. This is in line with the inexpensive platform and mobile phones widely used. This in the long run could restrain the users' adoption of new technology.

Annex 6 provides a summary of these and other similarities and differences among a sample of m-banking initiatives worldwide, while Annex 7 provides more insights regarding the relationship between banks and telecommunications companies in m-banking initiatives.

Mobile-Banking Implementation Models. In addition to distinguishing between bank and nonbank based m-banking models it is useful to distinguish between shared platform and individual implementation models. We describe some of the key features of each below.

1. The Individual Model: A single financial institution develops its own network either integrating telecommunication companies or simply using their services as carriers.

Graphic 2: Individual Implementation Model for M-banking



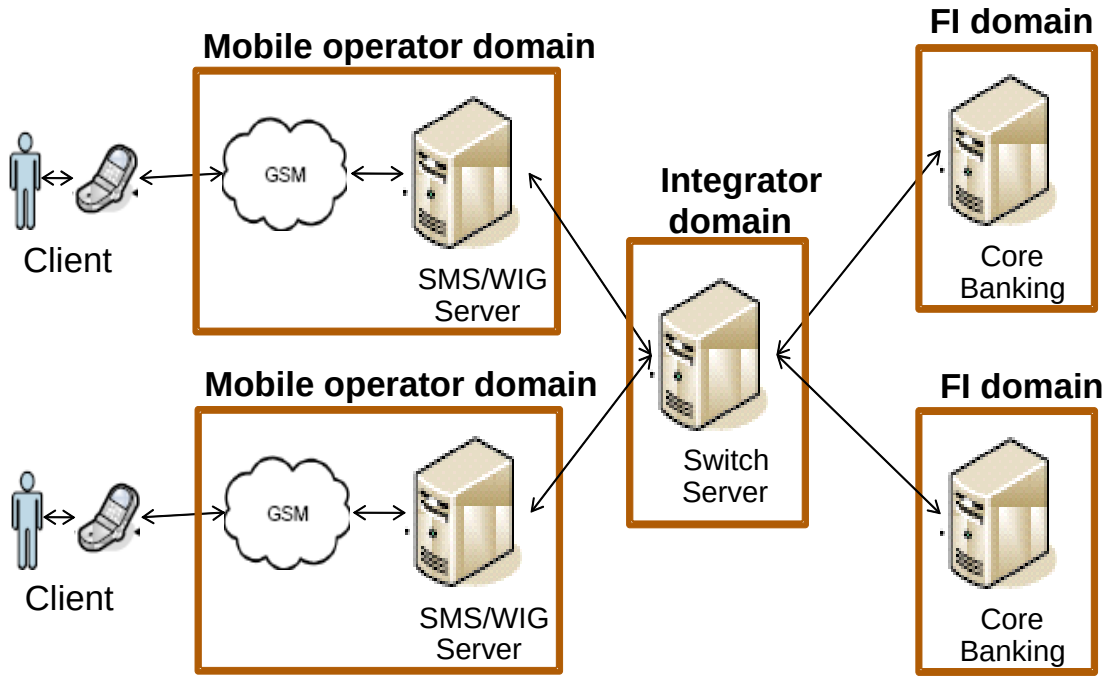
In this individual model the FI itself is in charge of the transactional server which is needed to coordinate the transaction requests flowing from points of service and post it in the Core Banking system. The transactions flow through the mobile operator network from the cell phone to the financial institution's switch server. In this model clients of other banks cannot participate in network transactions. Examples of individual m-banking initiatives include WIZZIT in South Africa[8], M-Pesa in Kenya, Bisa Movil in Bolivia, and BACMovil in El Salvador.

1. The Shared Model: A third party functions as an "Integrator" of multiple financial institutions and telecommunications providers.

[7] STK application is a software embedded in SIM cards which has the capability to launch and even manage software loaded in the SIM card, e.g. STK can launch a mobile banking application

[8] While Wizzit was developed with one bank partner, according to at least one source Wizzit is open to additional FI partners.

Graphic 3: Shared Implementation Model for M-Banking



Source: Developed by this study

In this shared model, the integrator ensures the security of transactions and the confidentiality of information. Unlike in the individual model, in this model clients of different FIs and mobile phone operators can participate, even conducting inter-bank transactions. Examples of this model include Gcash in the Philippines, and Movibanca in El Salvador

In Table 1 we summarize the key advantages, disadvantages and risks associated with both models.

Table 1: Individual vs. Share M-Banking Implementation Models

Advantages	Disadvantages	Risks
Individual • The FI has full control in service development	• Limited capacity to expand services to a broad range of potential customers • Expensive infrastructure investments • ICT resources requirements to provide the service • Inter-banking transactions are complicated	• Potential loss of clients due to limited transactional options (e.g. fewer cash conversion points) • Potential breaches in ICT security due to lack of expertise
Shared • Potential of broad and quick expansion of points of service • Lower investments in infrastructure and marketing for FIs and Telecom companies • Possibility of standardization of services • Possibility to create ACH services	• Has to negotiate initiatives to expand services and service development	• Potential exposure of information to third parties • Potential loss of clients due to standard services (if FIs do not focus on improving financial services)

IV. IT AND TELECOMMUNICATIONS IN EL SALVADOR

In this section we describe the information technology and telecommunications sectors in El Salvador. While our analysis of the sector was rapid, we find that both are well developed, competitive, and conducive to the expansion of m-banking.

A. THE TELECOMMUNICATIONS SECTOR

Telecommunication services in El Salvador have been expanding rapidly in recent years, especially in mobile telephony. According to the World Bank, mobile phone access increased from 12 percent of the population in 2000 to 57 percent in 2006.

While comparable data on cost trends for these two years is not available, El Salvador appears to compare favorably to other countries in the region with a below average cost for cell phone use: $8.5/month (see Annex 8). Moreover, key informants noted that service rates have been declining as a result of increased competition. According to a Superintendencia General de Electricidad y Telecomunicaciones, SIGET's bulletin in 2007 there were 107 mobile phone lines per 100 people (see Annex 2).

There are four mobile operators in El Salvador covering 98 percent to 100 percent of El Salvador's territory. These operators offer GSM based services with SMS and GPRS capabilities throughout their networks; some even offer EDGE and 3G capabilities. Eighty to ninety percent of users are pre-paid customers, and most Salvadorans use inexpensive mobile phones with SMS capabilities.

Though mobile technology is broadly available to Salvadorans, and prices have been dropping, service costs could be a potential hurdle to expanding m-banking services. For inter-network services, pre-paid minutes cost between $0.30 and $0.35, while post-paid minutes cost between $0.20 and $0.24. The rates for in-network connectivity are far cheaper; on average all companies

are charging half the inter-network price for in-network service. This potential hurdle is more evident for GPRS package prices, which range from $3.4 to $8.0 for 1 Megabyte / Month. In contrast, the less expensive SMS service ranges from $0.0500 to $0.0565 per message. On the positive side, all companies are willing to negotiate group rates. In fact, it is our understanding that MoviBanca, which is offering m-banking services with three banks, (HSBC, Banco Agricola, Banco Uno), has negotiated a lower uniform price for the service with three mobile operators (Claro, Tigo, Movistar) and is negotiating with the forth (Digicel).

With respect to cell phone prices, basic units range from $15 to $50, to more than $100 for more sophisticated phones. Phones in the less than $50 range generally do not have GPRS capabilities. In one telecom executive's opinion, Salvadorans could be willing to change their basic units for at least one with GPRS capabilities if the services prove to be useful to them. However, a number also observed that lower-income Salvadorans may not be willing to pay high costs for mobile phones and services.

Finally, m-banking is an option aggressively embraced by telecom companies in El Salvador. Most are already engaged in an m-banking initiative with different degrees of development. Please name telcos here have been offering a limited range of m-banking services for more than two years, others are just beginning to offer or develop the service.

In summary, the Salvadoran market offers a broad range of mobile services and mobile phones. The majority of mobile phone clients are using the least expensive services and phones. It is therefore recommended that m-banking solutions be developed around inexpensive phones and services with user-friendly interfaces. In addition, negotiating lower, uniform rates for texting with participating mobile phone service providers is likely to be critical to user uptake. Annex 9 summarizes the technical characteristics and prices of the main telecom providers offering mobile connectivity in El Salvador.

B. INFORMATION TECHNOLOGY SERVICE PROVIDERS

El Salvador has a wide-range of highly professional and quality information technology infrastructure and services. Although in the current globalized world the physical proximity of IT service providers is not necessary, El Salvador has several providers competing in the region and specifically in the country. Several of them, such as GBM, Sysde, IDS, and SIFCO are currently providing products and services to financial institutions and telecom companies, as well.

The IT offerors in El Salvador covers small, medium and large infrastructure needs. Available software platforms range from Open Source (i.e. Linux, Java) to proprietary ones (e.g. Windows, Unix). The hardware offer ranges from personal computing devices to non-stop high-end servers, as well as small devices (e.g. PDA, POS). At the same time, available communications technologies are based on renowned providers (e.g. Cisco, 3M). Core Banking platforms are adapted to the specific needs of MFIs, Cooperatives, and Banks. Some specialize in one or more of these market niches.

The IT providers in El Salvador also currently offer switching and system integration solutions, and even m-banking platforms. Switching and integration solutions[9] have become essential to providing transactional services linked to core banking systems and becoming central to m-

[9] Switching and integration systems are platforms largely used by banks to integrate their transaction channels to their core banking systems, they are used to integrate diverse transaction channels, such as ATM and POS networks and e-banking channels.

banking transaction systems. Some of these solutions are being used by payment networks (ATM, POS and e-banking networks), as well as m-banking initiatives. While an in-depth analysis of the costs of these services was beyond the scope of this study, it is possible to report that service providers offer a wide-range of pricing plans.

Annex 10 shows an example of what IT companies are able to offer in El Salvador.

C. INTEGRATORS AND PAYMENT SYSTEMS

The Salvadoran financial sector has been using payment systems for many years. There are several payment and financial transactions networks providing transactions processing for financial institutions and merchants, mostly based on ATM and POS devices as transaction channels. During the last five-plus years e-banking (internet banking) has been developed as well. Some networks are outsourced to third parties (integrators) while some are implemented by financial institutions themselves. During this study two integrators were interviewed: ATH and MoviBanca, both are engaged in group initiatives with financial institutions operating shared models. Recently, both started providing m-banking services as well. Based on their experience providing financial and payment transaction processing as Integrators to both telecoms and FIs, both service providers considered in this study are potential partners in supporting a group initiative to implement m-banking services in El Salvador.

The transaction processing services offered by these integrators are based on industry standards for messaging[10] and encryption features for security[11]. The main features in their solutions include multi-channel, multi-entity switching services, for end-to-end transaction flows. Both are also willing to adopt security measures that more demanding banks may request, though they are aware that adopting more sophisticated security measures may also make the technology more expensive for all participants (i.e. banks, telecoms, and ultimately users).

Both companies apply various business models depending on what channel service is provided. For ATM and POS networks, for example, they charge commissions per transaction. For other channels they are piloting other models, such as shared revenue streams.

Annex 11 describes the features and capabilities of the two integrators and their products/services.

V. FINANCIAL SERVICES IN EL SALVADOR

The Salvadoran financial sector is comprised of approximately 11 commercial banks,[12] 2 public banks, and roughly 300 registered non-bank financial institutions (NBFIs), including non-governmental organizations (NGOs), open and closed cooperatives,[13] and workers' banks. In this section we describe their general characteristics and market foci.

According to a recent survey of bank usage, 37.4 percent of the population is served by the banking sector. Access (or use) is highest in the central region (41.1 percent of the population), fol-

[10] e.g. ISO 8583

[11] e.g. SSL 128 and 3DES encryption protocols

[12] The process of mergers and acquisitions is ongoing.

[13] Open cooperatives have authorization from the Central Bank to capture deposits from the public. Closed cooperatives may only capture deposits from their members.

lowed closely by the western region (39.8 percent). The level of bancarization drops significantly in the eastern region of the country (29.6 percent).[14]

In addition, El Salvador's NBFIs serve approximately 350,000 clients, according to Franklin Montano, President of ASOMI, an association of microfinance institutions (MFIs), though he notes that this number undoubtedly includes some double counting. The majority of these clients are served by approximately 180 NBFIs.

FEDECREDITO, the regulated federation of NBFIs is the most important provider of credit to MSEs, accounting for 54 percent of loans disbursed, followed by banks (31.1 percent), ASOMI (12 percent), and FEDECACES, an unregulated federation of NBFIs (2 percent).[15]

General Characteristics of Banks. El Salvador has a relatively well developed banking sector. Commercial and public banks offer a wide range of products, services, and delivery channels, including m-banking, in at least four cases, even m-banking. These initiatives will be discussed further in Section VII.B. The current level of sophistication of El Salvador's banks, and the expectation that the banks' foreign owners[16] will continue introducing new technologies and products, combined with banks' increasing focus on MSMEs create positive conditions for the promotion of m-banking among USAID's target population.

In recent years, partly as a result of support from USAID, many banks have developed strategies and products to expand into the SME sector, as well as the microenterprise sector. Of the six banks interviewed, four serve MSMEs, while the remaining two (Scotiabank and Banco Hipotecario) serve SMEs, but not microenterprises. As demonstrated in Graphic 4, HSBC, Procredit, Banco de Fomento Agropecuario, Banco Hipotecario[17] y Banco Agricola were the leaders in microlending during the first trimester of 2008. With respect to financing for small enterprises, Banco Agricola, Banco de America Central (BAC), Banco Cuscatlan, HSBC, and Scotiabank stand out.[18]

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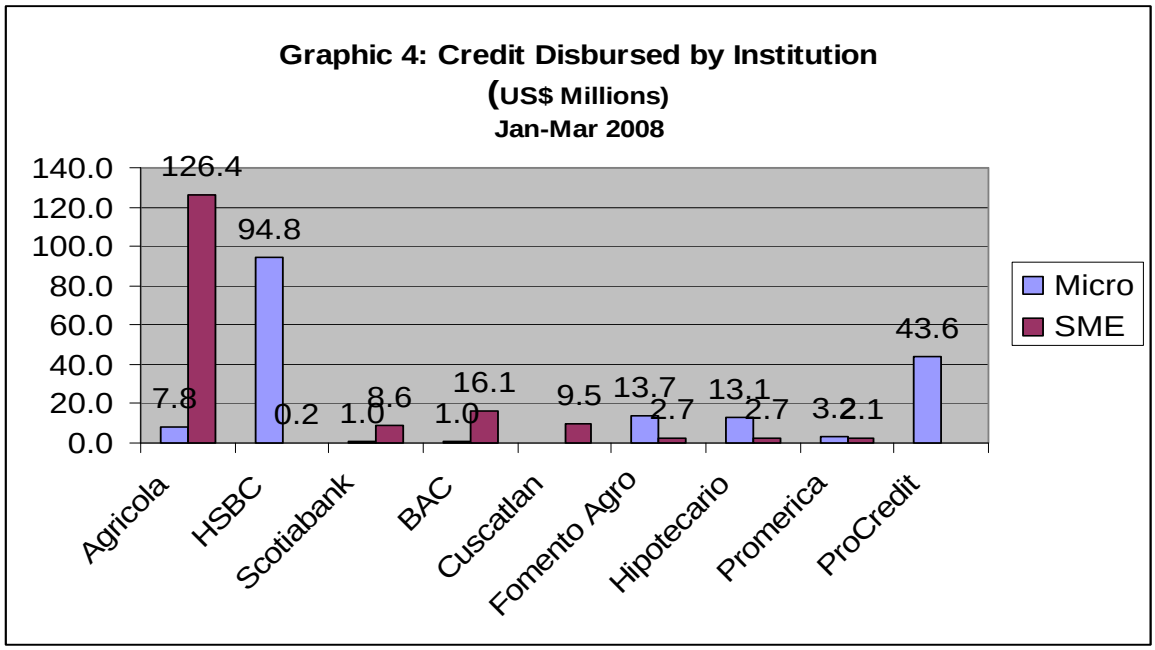
[14] ABANSA, no date.

[15] Cordelo, Guido, "Modelos de Negocios Exitosos en El Salvador: Los Segmentos de la Micro y la Pequena Empresa," USAID, October 2007.

[16] One hundred percent of the banking sector is currently foreign owned.

[17] According to representatives of Banco Hipotecario the bank does not serve the microenterprise sector because it lacks a specific methodology for the sector and its mandate is to serve the SME sector. Nonetheless, a relatively high volume of their loans are classified as micro.

[18] Multisectoral Investment Bank, 2008.



With regard to expansion plans, five banks—BAC, HSBC, Banco Agricola, Promerica, and Scotiabank—noted that they are planning or seeking to expand in the MSME sector in the near future.

- BAC began serving the SME sector last year, with USAID support, and has aggressively entered the MSE sector with the recent purchase of PROPEMI (an MFI).
- HSBC increased its lending to microenterprises significantly during the first quarter of 2008, relative to the same period last year, (from 26.9 to $98.4 million), according to BMI data.
- Banco Agricola was purchased by BanColombia last year, a bank with extensive experience in SME finance. BA is currently designing a strategy for the MSME market that will be implemented in 2009.
- Promerica expressed significant interest in expanding into the small business market, including a willingness to quickly introduce new technologies to distinguish itself from the competition and rapidly increase market penetration.
- Scotiabank representatives commented that increasing their penetration in the small business sector is among the banks principle objectives currently.

General Characteristics of NBFIs. The vast majority of El Salvador's NBFIs offer only credit or capture savings only from their members. Currently, there are only seven regulated NBFIs: four workers' banks, two cooperatives, and one federation of NBFIs. An eighth, Apoyo Integral, expects to receive authorization to operate as a regulated, deposit taking institution in September. The delivery channels used by these institutions to serve their clients are generally limited to branch offices and/or credit officers that visit clients, with little use of ICT. However, FEDECREDITO has a sophisticated management information system (MIS) designed for commercial banks.

VI. HOW EL SALVADOR'S FINANCIAL SECTOR CURRENTLY USES ICT

In this section we provide an overview of the level of sophistication of the systems and ICT use of Salvadoran financial institutions. We follow this overview with a description of the two current m-banking initiatives in the country.

A. IT INFRASTRUCTURE IN EL SALVADOR FINANCIAL INSTITUTIONS

The financial institutions envisioned as potential partners to expand services to more Salvadorans include banks, cooperatives, workers' Banks, and microfinance institutions. While the last two groups are more MSME focused, banks are aggressively targeting these market segments, as well. As would be expected, the IT capabilities differ widely among these types of FIs, ranging from highly sophisticated, with extensive use of ICT, to very basic with minimal use of ICT. While the different levels of ICT sophistication among FIs could represent an important challenge, an opportunity exists to integrate diverse financial institutions into a shared m-banking model to reach the broadest possible range of clients.

The banks in general are quite sophisticated in their use of ICT resources. Almost all banks offer their clients access to ATMs (some exclusively in their branch offices, others in non-branch locations), POS-merchant networks, Inter-Active Voice Response (IVR) services, e-banking (Internet banking), and Kiosks services. Recently, some of them have even started offering m-banking services (HSBC, Banco Agricola, Banco Uno, and Banco de America Central). Banks also operate as "collectors" for utility companies.

Most banks have centralized core banking systems allowing on-line access from all their branches. The majority also have functional modules integrated in a single technological platform. Some, however, are using different platforms for their various services (e.g. one MIS for deposits, another for credit, and another for back office support). While integrating their core banking systems with channel transaction services is easier for the first group, it is more complicated with the latter.

While cooperatives and workers' banks are generally much less sophisticated than commercial banks, some are introducing increasingly sophisticated information and communication technologies. FEDECREDITO offers a core banking platform through an ASP (Application Service Provider) to its affiliates[19]. In addition, they already have plans to incorporate services using alternate channels in the short-term. They intend to begin with ATMs and POS networks, (and have funding proposals pending), and are also very interested in introducing m-banking in the near future.

At the low-end of ICT sophistication there are those non-governmental organization (NGO) MFIs that do not have centralized management information systems yet. Despite their low level of technological sophistication, NGOs potentially are important players in m-banking services because they offer very specialized microfinance services to a very important under-banked market segment. As such, they could work in partnership with regulated FIs to provide a wider-range of services to this segment. Ultimately, they could serve as points of services (cash in/cash out points), within a non-bank agent network linked to an m-banking initiative.

Annex 12 provides additional details on FIs' services, IT infrastructure and use of transactional channels.

B. CURRENT M-BANKING INITIATIVES IN EL SALVADOR

There are at least two, private sector-led m-banking initiatives operating in El Salvador. One is based on a shared model (led by Movibanca), includes three important banks (as noted previously, HSBC, Banco Agricola, and Banco Uno), and was launched approximately two years ago. The

[19] More information on ASP models can be found at http://technology.cgap.org/2008/09/16/microlinks-hosts-discussion-on-outsourcing-options-for-microfinance-systems/?

other is based on the individual model (Banco de America Central's BACMovil), and was launched during the third quarter of 2008. Both initiatives are trying to integrate all mobile operators in El Salvador; the shared one has already signed agreements with three mobile phone operators.

The two initiatives have started with a similar set of basic transactions, with plans to add more sophisticated ones over time. The currently available transactions are: account inquiries, credit card payments, transfers (one initiative only allows internal transfers, the other includes transfers to third parties), and loan payments (one initiative). The projected transactions already identified are: bill payment and remittances.

The major challenges encountered by these initiatives are potential users' reluctance to try the new technology and developing user-friendly user-interfaces. For example, a leading bank operating under the shared model initiative indicated that only 15% of affiliated customers have become active users. Both initiatives are aware of these constraints and in fact are working on developing friendlier interfaces. The WAP server based applications would be available to those users that could afford more expensive mobile phones and services and enjoy the more graphical applications, while the less expensive SMS application would continue to be available for users who cannot afford such technology.

The banks offering both models should consider designing and launching effective marketing campaigns in the short term to significantly expand usage.

Both m-banking solutions are based on an SMS platform. The user has to input the text message using function aliases and special codes, which reduces the need to input large and complicated text plus codes. The individual initiative currently has a more accessible user-interface than the shared one and includes a help option in the device menu options. In both cases the user has to download the m-banking application from a web address sent by SMS to his/her phone, the same process followed to access many VAS (value added services) applications, such as ring tones.

As both initiatives develop new m-banking applications, ensuring the security of transactions should be a priority consideration. While both currently have reasonable security protocols for transactions flowing from an m-banking switch server to the FI's core systems (i.e. SSL 128 and 3DES encryption techniques), both have messages flowing in clear text between the mobile phone and m-banking switch server. The security measures adopted to mitigate risks in this link include: PIN validation in the mobile phone and storing critical data only in the link between the m-banking switch server and the FI's core system, which makes it difficult to intercept all data needed to get illegal access to customers' accounts.

Despite the relatively limited success of both initiatives to date, (HSBC has 30,000 people subscribed to the service, but only 5,000 active users monthly, and BACMovil was rolled out one month prior to the start of this study), both represent great opportunities to support the expansion of mobile phone banking to reach large numbers of under-banked and un-banked individuals. Both initiatives are generally in line with initiatives developing in other countries; especially with regard to the base technology (e.g. SMS platform, cheap devices). Annex 13 summarizes the characteristics and features of both m-banking initiatives.

VII. THE REGULATORY FRAMEWORK FOR MOBILE BANKING IN EL SALVADOR

Based on the rapid review of the legal and regulatory framework undertaken for this study, it does not appear that there are any barriers to introducing mobile banking per se. That which is not expressly prohibited by law—and mobile phone banking is not—is permitted, though the Central Bank does need to authorize any new operation. Moreover, while no privately run Automated Clearing House (ACH) exists, regulations permitting its development do. An ACH would facilitate broader implementation of a shared m-banking model. However, the absence of clear guidelines for non-bank agents and the concerns of the Superintendent of Financial Institutions regarding the risks of m-banking need to be addressed for the sustainable development of this service.

According to the financial institutions interviewed, there are no restrictions on the type of entity that may be an agent of a financial institution and a revision of the banking legislation and regulations produced nothing to the contrary. In fact, there do not appear to be any written guidelines defining an agent or the operations an agent is allowed to perform. This suggests that creating a network of non-bank cash in/cash out points as part of a mobile phone banking model is possible in El Salvador. This also suggests a need to develop clear guidelines for non-bank agents to protect consumers, FIs, and the agents themselves. Additional research is needed to confirm these findings.

Despite the generally conducive environment for mobile phone banking, there are indications that at least for now the financial authorities are unwilling to permit telecommunications firms from directly offering an m-wallet, such as Globe Telecom does through G-cash in the Philippines. According to a representative of one of the telecommunications companies interviewed the Central Bank would not approve their proposal to offer an m-wallet without an alliance with a local bank.

This restriction may be related to an important finding of this study, mainly that while currently there appear to be few formal regulatory obstacles to expanding m-banking in El Salvador, the Superintendent is concerned that the current legal and regulatory framework may not adequately address the risks of mobile banking. The appropriateness of Anti-Money Laundering (AML) protocols were a particular concern. While AML and Know Your Customer (KYC) requirements should not be an issue for the bank-based mobile phone banking model, as m-banking is simply another delivery channel, if non-bank agent networks are introduced, this may well need to be addressed.

VIII. CONSIDERATIONS REGARDING DEMAND FOR MOBILE BANKING IN EL SALVADOR

As noted above, in-depth market research on demand for mobile banking services among end-users was beyond the scope of this study. However, interviews with key informants—representatives of FIs, telecommunications enterprises, Financial Services for SMEs and USAID staff—as well as26 interviews with a non-representative sample of current FI clients—provide some tentative indications regarding the target market. Any financial institutions wishing to promote mobile phone banking should confirm these tentative indications through a market study.

First, according to our informants and our interviews with clients, and as suggested by the data in Annex 2 on mobile phone coverage, the majority of microentrepeneurs have cell phones. In fact, it is not uncommon for all family members to have a cell phone. However, as is often the case with "new technology," while texting is common among youth (as is use of internet), it is much less common among adults, perhaps particularly among the lower economic classes. Moreover, even among the younger FI clients interviewed there is a great deal of hesitance around using a cell phone for financial transactions. This hesitance appears to be partly the result of a lack of

familiarity with texting itself. But the security of cell phone based transactions—in fact any non-face-to-face financial transactions—seems to be an even greater concern. Of course, it is not uncommon to encounter anxiety toward and resistance to the adoption of new technologies or new uses of existing technologies. Effective marketing and client support services[20] will likely be critical to overcoming this resistance, as well as consumer protection mechanisms.

Similarly, ease of use is likely to play a significant role in user uptake. The more accessible the user-interface, the more attractive the technology will appear. As noted previously, HSBC, the bank that has offered mobile banking the longest (over two years), has 30,000 subscribers, but only 5,000 users. Low usage levels appear to be partly attributable to the current user-interface and HSBC is currently developing a more user-friendly platform. The new user-face will be web menu based, rather than text based. While this will undoubtedly make the technology easier to use and encourage uptake among all market segments[21], an Internet-based system will have more limited geographic coverage than a text based technology, and might be more expensive. It is important to note that the ease of use of an SMS based system is not simply a technological issue, but also a design issue, with some SMS based user-interfaces being easier than others.

Finally, it is possible that the security measures established by the Superintendency and/or participating financial institutions, including maximum transaction amounts, could affect the target market for mobile banking. For example, our client interviews, which again, did not make up a representative sample, indicate that at least some of the small enterprises regularly make payments to suppliers or deposits in excess of $1,000. That said, SMEs might still find mobile banking attractive for paying utility bills, consulting account balances, etc. Again, the demand for mobile phone banking within different market segments needs to be analyzed in greater depth through detailed market studies.

IX. CONCLUSIONS, RECOMMENDATIONS, AND POSSIBLE NEXT STEPS

In this section we summarize our conclusions regarding the ICT, telecommunications, and regulatory environments for growth of mobile phone banking services, as well as our observations regarding appropriate mobile phone banking models for the country. We then present our recommendations regarding potential partners and intervention points for USAID. We conclude the section with a list of possible next steps.

A. CONCLUSIONS AND GENERAL RECOMMENDATIONS

Supportive ICT and Telecommunications Services are Available. Our first conclusion is that the technological and telecommunications environments seem to be propitious for the expansion of mobile phone banking. El Salvador enjoys access to first rate ICT firms with any and all of the hardware and software and technical support services necessary to develop m-banking. Many, if not all of the firms are regional or global in nature, creating the opportunity to import existing mobile phone banking platforms and applications for easier introduction into El Salvador, as Ebclosion/Movibanca has done for HSBC, Banco Agricola, and Banco Uno, and BAC's regional headquarters in Costa Rica has done. As discussed below, this also creates an opportunity for USAID to promote a regional initiative with country by country implementation for greater

[20] HSBC tellers market their mobile banking product only to individuals that already use texting. If they respond that they do not, when asked, the teller moves on.

[21] An SMS-based system is likely to be less attractive to individuals with access to Internet banking, with its easier to use menus and graphics.

impact. That said, the unequal development and use of ICT among FIs could slow the introduction of mobile phone banking in some of these institutions. Similarly, the basic nature of mobile phones generally used by low-income populations could slow the spread of m-banking, though the majority of phones support text messaging.

The existence of five mobile phone operators—also with regional and/or global presence—at least four of which are already involved or interested in mobile phone banking is also propitious. Competition has brought the costs of mobile phone services down in recent years, and creates an opportunity for financial institutions to negotiate rates that will be attractive to potential m-banking clients.

The Regulatory Environment is Generally Conducive to Development of M-Banking. The regulatory environment also seems to offer relatively few obstacles to the continued growth of mobile phone banking. However, it is the opinion of the authors that the concerns of the Superintendent of Financial Institutions should be addressed in the short-term to avoid the emergence of unnecessarily restrictive regulations that could halt the expansion of m-banking. Further, clear guidelines on non-bank agents or correspondents—the type of entity that may operate as an agent, the operations they can legally engage in, etc.—appear to be needed to support the secure and wide-spread development of m-banking. El Salvador is not a country accustomed to the use of electronic cash. A large network of conveniently located cash in/cash out agents will be critical to the wide-spread adoption of mobile phone banking. In addition, there is a need to clarify if mobile phone service providers or only regulated FIs can or should provide an m-wallet service.

Various Mobile Phone Banking Models are Viable. Both individual and shared models of m-banking are present and viable in El Salvador. Promoting greater use of a shared model would be advantageous from a cost perspective. However, there is clear resistance to a shared model among many FIs. The key issue seems to be concern about maintaining the confidentiality of each FI's client information, an issue that can, and should be addressed. The high prices charged by telecoms for inter-cell network services, as noted in section IV.A, telecoms are charging twice the price for in-network services, could pose another important potential hurdle.

El Salvador Meets Most of the Pre-Requisites for M-Banking. As summarized in Table 2 below, there are few current obstacles to the development of m-banking. The most significant relate to regulatory issues.

Table 2: status of ICT-enabled services in El Salvador

Component	*Mandatory?*	*Status in El Salvador*
Core Banking System	Yes	MFIs affiliated to FEDECREDITO are successfully implementing an ASP model; on the other hand those MFIs affiliated to FEDECACES need to implement robust Core Banking System. Banks, especially those actually engaged in m-banking, have robust Core Banking Systems. There are regional and local providers of such systems.
Inter-Bank Switch	No but strongly preferred	There are at least two providers: ATH and Movibanca. ATH is being used by most of banks and MFIs affiliated to FEDECREDITO. Regulation to allow operations of Automatic Clearing House (ACH) services was recently issued. Introduction of a single inter-bank switch open for all channels would reduce transaction costs for most transactions.
Telecommunications Network	Yes	Cell phone networks cover about 98% of El Salvador.
Source of Cards	No but Preferred	Several options exist for bulk sources of cards that are part of international (or domestic) networks (pre-paid, debit, or credit), including CREDOMATIC.
ICT-enabled Devices	Yes	There are a wide range available, some for service points (at agents, branches) – POS, ATM's, Cell phones; some used directly by clients (cell phone)
Network of Service Points (cash-in/out points)	Yes	Several potential networks (e.g., Telecom resellers, POS devices in gas stations, etc) exist; regulations do not prohibit their use.
Secure approach to exchanging electronic transactions between devices	Yes	There is no regulator-approved approach operational but regulator approves every new service and channel proposed by FIs and alternative approaches are being tested, building on experience elsewhere.
Appropriate legal and regulatory environment	Yes	There is no regulation for non-bank agents. Acceptable secure approaches for e-transactions via mobile phones not yet defined nor test guidelines defined.
Demand	Yes	The current approaches used to affiliate and expand m-banking services have not resulted in large-scale use of the service to date. Neither the availability nor advantages of m-banking are widely known among the target population.

B. POSSIBLE PARTNERS AND CORRESPONDING USAID ACTIVITIES

There appear to be a wide range of potential partners for USAID activities supporting m-banking in El Salvador. These include leading banks, second tier banks, traditional MFIs, and integrated, federated NBFIs.

Leading Banks. Leading banks, i.e. those that already have mobile banking initiatives, may not need significant support for further technological development of m-banking. While the services available currently are limited (see Section VII.B), banks such as HSBC and BAC already have plans to broaden the services to include loan payments, etc., and they are thinking of promoting m-banking among microenterprises. BAC also thinks m-banking will be an effective tool for expanding access to finance among those without access to Internet. The one exception may be in

promoting and/or developing a text-a-deposit application. None of the financial institutions interviewed mentioned adding deposit services. However, these banks could benefit from study tours, exchanges, and dissemination of case studies of initiatives in other countries, particularly in the region, to improve their products based on lessons learned and best practices emerging elsewhere. For example, this might lead to improved user-interfaces. They might also benefit from technical assistance to develop marketing strategies appropriate to the MSME market segments, as well as incentive systems for bank staff to promote the service among the target population.

Banco Agricola may be a special case among banks with existing m-banking initiatives. While Ebclosion confirms that BA has a mobile banking initiative, the representatives of BA's MSME banking division did not consider m-banking a priority, given the bank's extensive branch network, and it is unclear if they were aware that the bank has already introduced this technology. Instead, they are focusing on promoting Internet banking among these market segments.

Finally, other banks considered leaders for their size, such as Scotiabank, are likely to follow their competitors into m-banking investing their own financial resources if these initiatives prove profitable. Nonetheless, their uptake could be hastened or improved through exposure to existing initiatives.

Second Tier Banks. Smaller public and private banks, such as Promerica and Banco Hipotecario, may need more support to introduce mobile phone banking. Such support might include technical assistance to adapt their systems, assistance with market research to assess demand for m-banking among current and potential clients, and/or to negotiate deals with telecommunication firms or third party technological platform providers.

Traditional MFIs. Traditional MFIs, such as those associated with ASOMI, generally have low levels of technological sophistication, and only one is regulated and captures deposits. While these FIs are probably not good candidates for introducing m-banking directly, their proximity to marginalized populations make them potentially very interesting candidates for an agent network, acting as cash-in/cash-out points of service. In Peru Banco de Credito (BCP) is successfully expanding its network using MFIs. USAID potentially could play the role of broker helping to negotiate alliances between these MFIs and m-banking providers.

Integrated, Federated NBFIs. The more organized, technologically networked non-bank financial institutions, such as those that form the regulated federation, FEDECREDITO, appear to have the capacity to directly offer m-banking through the federation. USAID could work with FEDECREDITO to link the remainder of its members to its core banking system (currently, approximately 45 of its 55 members are connected, creating a shared branching network on a national scale). USAID could also assist FEDECREDITO in designing its own m-banking application, or perhaps more cost-effectively and feasibly, assist the federation in brokering an alliance with third party provider (either independently, or through a shared network). At the very least, in the short term FEDECREDITO's affiliates appear to be the best candidates to expand their cash-in/cash-out network to support m-banking services. Whether FEDECACES, another federation (though currently unregulated) that links 32 cooperatives serving 95,000 clients might also be a candidate in the short to medium-term for this type of support is a point for future investigation.

The Superintendency of Financial Institutions. The Superintendent expressed a need for assistance in:

1. Analyzing current laws and regulations to identify their adequacy for managing risks associated with m-banking

2. Developing AML protocols for m-banking
3. Developing protocols for payments systems
4. Developing appropriate supervisory tools for m-banking and training regulatory and supervisory authorities

In addition, USAID could work with the SSF or ABANSA, the national banking association, to develop regulations for non-bank agents.

C. POSSIBLE NEXT STEPS

In this section we present for USAID /El Salvador's consideration a variety of activities to accelerate the development of m-banking and expand its coverage to more unbanked and underbanked populations, a current Mission objective. Each activity will need to be evaluated within the context of the Mission's ongoing programmatic priorities.

1. Disseminate a public version of this report. Many of the FIs and companies interviewed for this report expressed interest in the findings of this study. It is recommended that a public version of this internal report be developed for this purpose. Dissemination of the report may be limited initially until USAID/El Salvador determines if it will finance an m-banking initiative in El Salvador. When and if the Mission decides to initiate a project a broader workshop, such as the half day workshop organized in Mexico to disseminate and discuss the study's findings may be appropriate.
2. Develop a business case for a shared m-banking model. Many financial institutions are very hesitant to enter into a shared model because of concerns about having to share information on clients—and related concerns that that information could be used to steal clients. Following the successful model of the Financial Services Program for SMEs project, USAID/El Salvador could take the lead in developing the business case for a shared model and disseminating its advantages, risks, and risk management mechanisms through ABANSA, FEDECREDITO, ASOMI, and other organizations representative of the Salvadoran financial sector, as well as the telecommunications sector. Under the Financial Services Programs for SMEs USAID/El Salvador did something similar when it financed a national study on SMEs and effectively used it to demonstrate to banks that serving SMEs could be profitable. This could be a stand-alone initiative to stimulate additional private sector activity. It could also be used as a jumping off point for a broader initiative.
3. Conduct an in-depth study of the current legal and regulatory framework for m-banking in El Salvador. This study would include analysis of regulation of non-bank agents. The authors recommend that the study include a comparative analysis of regulations in Peru, Brazil, Bolivia, and the Philippines—countries that have introduced mobile phone banking and/or legislation related to non-bank agents (Brazil). Again, this could be a stand-alone initiative to benefit the sector, or part of a broader project.
4. Develop a short, accessible briefing note on regulating m-banking. During the research for this study the authors sensed a lack of clarity on the part of the regulatory authorities on the nature of the risks associated with m-banking, and consequently who or what needs to be supervised. This is not surprising given the newness of this delivery system for financial services. Drafting of a short briefing note in easily accessible language on these risks—and responses—could be a useful educational instrument not only for the

regulatory authorities but for all stakeholders. This activity could be carried out with activity three or independently.

5. Explore the potential for developing a regional m-banking initiative: As noted in Sections V. and VI., most if not all of El Salvador's banks, IT, and mobile phone providers have a multi-country or regional presence. USAID/El Salvador may wish to further explore opportunities to leverage this fact to simultaneously support the introduction and expansion of m-banking throughout the region, taking advantage of players' current regional presence and infrastructure to deploy country-wide m-banking services reducing start-up and operational costs.

ANNEX 1: LIST OF INTERVIEWEES

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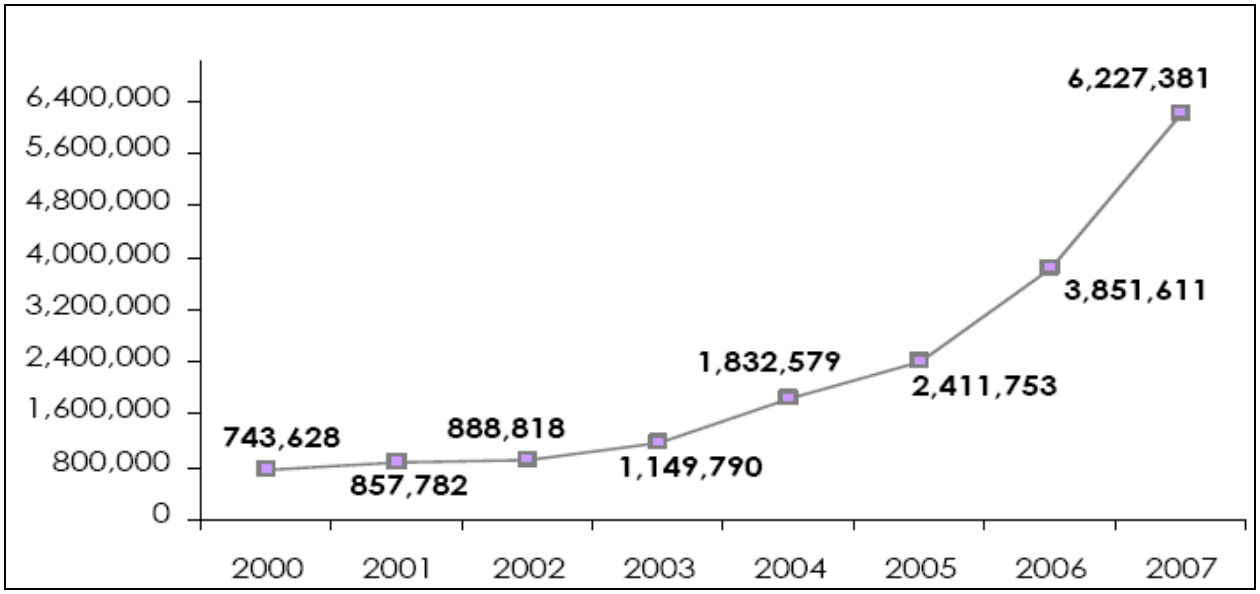
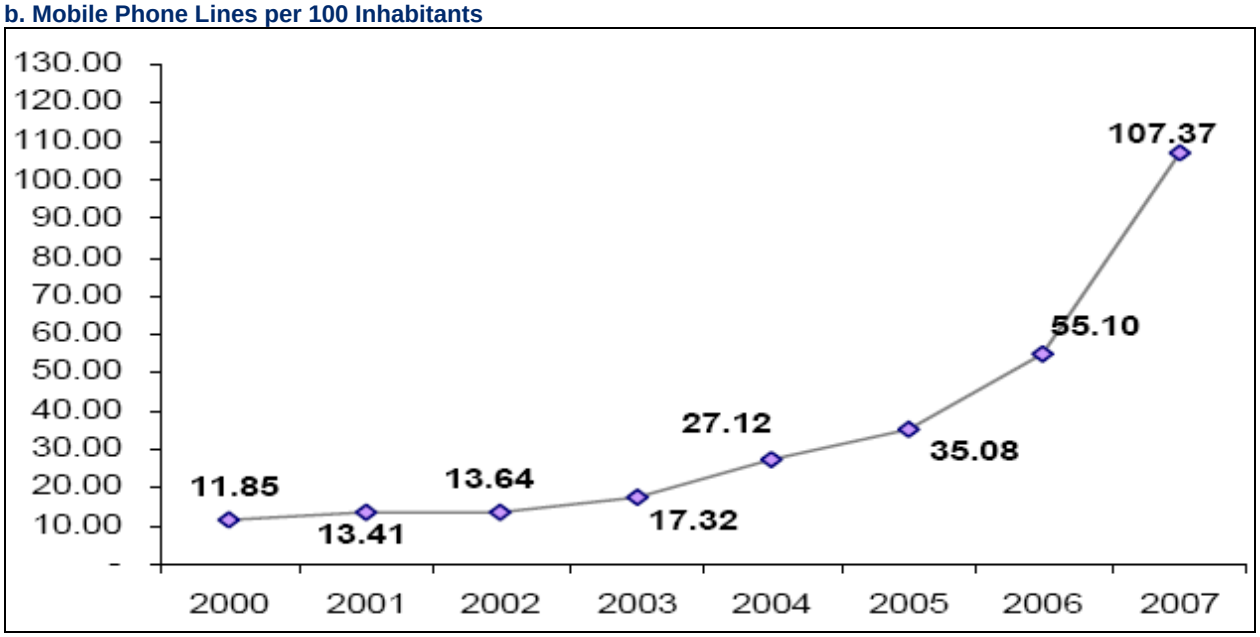
ANNEX 2: GROWTH IN COVERAGE AND USE OF MOBILE PHONES IN EL SALVADOR

a. Mobile Phone Line Growth



Source: Bulletin 2007, 2007

b. Mobile Phone Lines per 100 Inhabitants



Source: Bulletin 2007, 2007

ANNEX 3: EXPANDING ACCESS IN DEVELOPING COUNTRIES THROUGH ATM AND POS TECHNOLOGY

ATM technology implementations in developing countries

ATM technology has been introduced by microfinance institutions in developing countries as a way to reach more customers in a sustainable way, while providing them with better, more convenient services. Banco Ademi's experience in the Dominican Republic and Prodem's in Bolivia are two quite different examples of successful integration of this technology using shared and individual implementation models, respectively.

- Banco Ademi's approach is remarkable in its simplicity. The bank partnered with an experienced EFT service provider called "A Toda Hora" (ATH), which conveniently had points of service near Ademi's service areas. Ademi's investment to introduce ATM technology was minimal (around $70,000), and allowed its customers to carry out transactions in any of the more than 1000 ATMs managed by ATH, even those owned by banks.[22]
- Prodem's experience is interesting due to the adaptation and incorporation of cutting edge technologies. Renowned throughout the world, Prodem's ATM technology incorporates, along with smart card reader technology, fingerprint reader technology to identify customers using fingerprints instead of a PIN code. It also includes voice instructions in local languages to assist illiterate users. To implement its ATM network Prodem used the local ICT firm Innova, which assembled the ATM units with all features mentioned[23]. Today, Prodem has deployed 74 ATMs, mostly in rural areas, and is working on adapting these "smart ATMs" to permit deposit taking. Prodem's ATM technology is being exported to other countries, such as Venezuela in Latin America and Benin in West Africa.

Along with the technological differences in these to cases it is important to note the different implementation models, and the tradeoffs them may involve. While Banco Ademi customers can transact in practically any standard ATM network, Prodem's customers only able to use Prodem ATMs. However, Prodem's decision to develop their own specialized technology may have been the only way at the time to reach less educated and even illiterate customers with ATM technology. Thus, while a shared model may restrict technological innovation to limited but standard capabilities, it may offer a faster, easier way to reach a wider base of customers.

POS technology and the agent model used in developing countries

The POS technology/agent model is being adopted widely by developing countries as an economically viable way to bank poor people. For example, POS/agent networks are growing in Brazil, Colombia, Ecuador, India, Kenya, Peru, Pakistan, Philippines, and South Africa.[24] "An agent network…is similar to the millions of existing Visa, Mastercard, and debit card merchants, except that in this case the card payments at retail stores would be not only for sale of goods but also for handing out and taking in cash on behalf of banks."[25] Typically, agents are equipped with a POS device, either connected to a land line network, mobile network or other telecommunication technology, even satellite based. The type of retail business

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[22] *http://www.microfinancegateway.org/resource_centers/technology/iss_software/list_technologies/1#ex*

[23] *http://www.microfinancegateway.org/resource_centers/technology/iss_software/list_technologies/1#ex*

[24] *Banking through Networks of Retail Agents, Mas Ignacio & Siedek Hannah*

[25] *Banking through Networks of Retail Agents, Mas Ignacio & Siedek Hannah*

used as an agent is varied also: post offices, lottery offices, gas stations, pharmacies, supermarkets, fast food chains, etc.

Many agent networks are being developed based on individual implementation models, such as Peru's Agente BCP, Interbank Direct, and Agente Express networks [Banco Continental], and Cajero Express [Scotiabank]). Ohers are based on shared or group models, such as the Globokas Peru initiative, also called "Agente KasNet." In the latter, Globokas is playing an integrator role, providing a multi-bank agent service to several banks in Peru. In this case the agent belongs to the integrator and provides the agent services to any affiliated bank.

ANNEX 4: HOW ICT IS USED TO EXTEND FINANCIAL SERVICES

For ease of reference, we have grouped these technologies into three categories: 1) those involving direct banking (in which the client handles their transactions directly), 2) those related to mobile or portable banking (taking the financial services to the client), and 3) those that make use of non-bank agent networks.

Approach	*Pros*	*Cons*	*Technical Prerequisites/ Necessary Conditions*	*Examples*
Direct Banking				
Cell Phones	▪ Cell phone networks most pervasive, telecom networks more widely available and cheaper than Internet access. Phone sets relatively cheap. ▪ Inexpensive way to make payments and cash transfers. ▪ Depending on user-interface, may be easy to use. ▪ Can be as convenient and secure as Internet banking.	▪ Still a challenge to develop a secured channel that can be interoperable across devices, telecom providers, and financial institutions. ▪ Risk of fraud and theft higher if phone is used as e-wallet (but approaches to security can help address this.) ▪ Still need network of service points to handle "cash in/cash out" and transactions needing physical presence (e.g., opening an account). ▪ Client uptake can be a concern (general cell phone use may be wider spread than text messaging)	▪ Robust back-end core banking system. ▪ Mobile telecom communications. ▪ Connection to payment switch. ▪ Enabling regulatory framework. ▪ User interface and back-end interface between telecom and financial institution. ▪ Network of service points (e.g., agents).	▪ Standard Chartered and MTN South Africa (bank-led) ▪ Philippines G-Cash, and M-Pesa Kenya (telco-led) ▪ Wizzit South Africa (hybrid model)
ATM's	▪ Provide 24-hour service point for clients. ▪ Reduce traffic at branches. ▪ Facilitate loan disbursement – enable clients to withdraw only amount needed.	▪ Hardware and maintenance can be expensive; even more costly if machine takes deposits. (Most Mexican ATM's do not take deposits). ▪ Need reliable power source and Internet connectivity. ▪ Security concern when transporting cash to reload ATM's, especially in more rural locations.	▪ Robust core banking system with back-end interface. ▪ Reliable power source and Internet connectivity. ▪ Connection to existing ATM network and/or payment switch.	Examples of MFI's include Opportunity Bank of Malawi, PRODEM in Bolivia, and K-Rep Bank in Kenya.
Internet Banking	▪ Can piggyback on Internet security solutions. ▪ Convenient and secure.	▪ Internet access expensive and often absent in rural areas. ▪ Not secure if using shared computer or Internet café for transactions. ▪ Limited types of transactions can be conducted – transfers and bill payments mostly.	▪ Robust back-end core banking system. ▪ Reliable Internet connectivity.	▪ Most regional banks in emerging markets offer to their high end customers. ▪ No known examples of MFI's.
Mobile/portable banking				
Mobile banking unit	▪ Effective client acquisition tool – allow FI (financial institution) to expand perimeter of services beyond branch and ATM networks. ▪ Can be used off-line or on-line depending on connectivity.	▪ Hardware cost and maintenance is high and equipment has short lifespan. ▪ Can only circulate on main roads, too heavy and cumbersome to travel in tougher conditions or bad weather. ▪ Security can be a concern since transporting lots of	▪ Robust core banking system with back-end interface. ▪ Wired or wireless connectivity if want to do real-time transactions.	Equitable Bank in Kenya, Opportunity Bank of Malawi, Ag-Bank in Vietnam.

Approach	*Pros*	*Cons*	*Technical Prerequisites/ Necessary Conditions*	*Examples*
	▪ Can facilitate a wide range of financial transactions – opening accounts, deposits and withdrawals, payments and disbursements.	cash.		
PDAs	▪ Increase productivity and efficiency by decentralizing and simplifying loan process. ▪ Better loan management and monitoring. ▪ Can be used off-line or on-line depending on connectivity.	▪ Device is expensive and has short life span. ▪ Primary benefit is to loan officers and MFI, not to client. Does not facilitate wide range of financial transactions. ▪ Can facilitate payments but loan officers would have to carry cash, unless device can accommodate a card reader.	▪ Robust core banking system with back-end interface. ▪ Connectivity if want real-time transaction.	Banco Solidario in Ecuador
Non-bank agent networks				
POS	▪ Provide multiple points of service for clients. ▪ Can be placed in any local retail outlet that handles cash on a regular basis. ▪ Reduce transaction time and minimize carrying of cash (for clients and MFI staff). ▪ Can support deposits, payments and transfers. ▪ Can be card-based or cardless (clients have to remember PIN).	▪ Agents are non-bank staff so must be trained and controls put in place. ▪ Know Your Customer (KYC) rules must be enforced. ▪ Agents must have good cash management capacity. ▪ Require reliable connectivity which can be difficult in rural areas. ▪ Device needs to be placed in high traffic locales.	▪ Enabling regulatory framework for use of bank correspondents. ▪ Connection to payment switch and back-end system for accounts reconciliation.	Uganda Microfinance Limited (UML), Opportunity Bank of Malawi, Bancafe Guatemala

Adapted from Payne, Judith and Nhu-An Tran, "Excerpts from draft M-banking Report for Mexico, USAID, 2008.

ANNEX 5: LESSONS LEARNED FROM ICT-ENABLED FINANCIAL SERVICE INITIATIVES WORLDWIDE

- **ICT-enabled (i.e., software) core banking system is a key prerequisite.** As mentioned above, this is probably the most significant challenge faced by MFI's today as they try to use ICT. In fact, most MFI efforts at ICT-enabled branchless banking have been small pilots or not very successful.[26]
- **Scale is key: piggybacking on existing networks helps**. Having a wide distribution network is key to scaling up financial services in rural areas. FIs should link with Visa or MC networks for ATMs/POS, retail network of telecom scratch cards, or existing networks of MFIs, credit unions, or banks. Most payment networks are priced based on the number of transactions so the more institutions involved, and the greater the volume of transactions, the lower the cost for everyone involved.
- **Enabling regulatory and policy environment is crucial**. There should be open and flexible rules governing electronic payments, account opening requirements, and correspondent agent relationships. Stringent Know Your Customer (KYC) requirements and Anti-money Laundering and Combating the Financing of Terrorism (AML/CFT) rules could also potentially hamper the flow of small payments and use of alternative delivery channels for financial services. Bank regulators should apply the "proportionality" criterion by explicitly addressing approaches to address risks (e.g., security requirements) that are acceptable by FI type and size of transaction.[27]
- **Banks don't have to lead.** Different types of firms—a bank, MFI, telecom company, or third party—can take the lead in developing an ICT-enabled approach to financial services. In fact, most mobile banking efforts to date have been led by mobile operators.[28] However, experience to date shows that a regulated financial institution (FI) ideally should be involved at the outset so customers' assets are protected. In addition, the involvement of a financial institution would facilitate the cross-selling of other financial products.
- **Solutions have to meet clients' need.** MFI clients and the unbanked are willing to try new technologies once they understand the benefits. Low-income and poor clients are willing to pay the transaction fee in return for convenience, and reduced time traveling and staying in line to conduct their financial transaction. User interfaces for the solution should be simple to use and adapted to different levels of literacy and numeracy.
- **ICT Infrastructure needs to be in place.** There should be reliable, affordable and widespread Internet or mobile phone coverage, with enough capacity to handle a large amount of data transactions. The next section will discuss in more detail Mexico's ICT environment.
- **ICT-enabled solutions do not necessarily lead to more savings or credit.** To date, the branchless banking initiatives elsewhere have been used primarily for payments, not savings and credit. More work needs to be done to figure out how these new approaches can significantly increase savings by the poor and, where needed, access to credit.[29]

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[26] Ivatury, Gautam and Ignacio Mas, **The Early Experience with Branchless Banking,** CGAP, Note 46, April 2008. http://www.cgap.org/p/site/c/template.rc/1.9.2640 , p. 10.

[27] See **Regulating Transformational Branchless Banking: Mobile Phones and Other Technology to Increase Access to Finance**, CGAP Focus Note 43, January 2008. http://www.cgap.org/p/site/c/template.rc/1.9.2583

[28] Ivatury, 2008.

[29] Ibid, p. 2-4.

Source: Adapted from Payne, Judith and Nhu-An Tran, "Excerpts from Draft M-Banking Report for Mexico," USAID, 2008.

ANNEX 6: A COMPARATIVE ANALYSIS OF GLOBAL M-BANKING INITIATIVES

m-banking initiatives						
	Smartmoney	**G-Cash**	**MPesa**	**Wizzit**	**Bisa movil**	**MoviBanca**
Country	Philippines	Philippines	Kenya	South Africa	Bolivia	El Salvador
Implementation Model	Shared	Shared	Individual	Individual	Individual	Shared
Branded by	Telco	Telco	Telco's subsidiary	Telco's subsidiary	Bank	Integrator
Base platform	SMS	SMS	SMS	USSD	SMS	SMS
Transacting to/from non users						
Send money to non users	No	No	Yes	Yes	Yes	No
Receive money from non users	Yes	No	No	Yes	Yes	Yes
Cash in/out conversion						
Deposits	Agent network	Agent network	Agent network	Agent network	Bank network	Bank network
Withdrawals	Agent network	Agent network	Agent network	Bank network	Bank network	Bank network
Cellular device application	STK menu	SMS text	STK menu	USSD text	SMS text	SMS text
Mobile wallet						
Balance in cellular account	Yes	Yes	Yes	Yes	No	No
Who keeps the float	Bank	Telco	Telco	Bank	Bank	Bank
Functional security						
PIN security validation	Yes	Yes	Yes	Yes	Yes	Yes
Transaction and balance limits	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Individual model = One bank participant, Shared model = Open to multiple bank participants

ANNEX 7: M-BANKING AND THE RELATIONSHIP BETWEEN BANKS AND TELECOMMUNICATIONS FIRMS

While we refer to bank versus nonbank m-banking models, it is worth noting that both banks and telecommunications companies play a role in both. Banks can implement a mobile phone banking service without an agreement with a telecommunications company, with both the financial institution and customers making use of publicly available GSM services, e.g. SMS, GPRS or USSD, based on standard commercial terms with telecom operators. However, banks may choose to partner with telecoms to benefit from improved access to SIM cards (to activate encryption keys and OTA (over the air) update capabilities), to take advantage of their massive marketing resources, and/or to incorporate their vast network of airtime resellers as cash-in/cash out conversion points.[30]

For their part, depending on a given country's regulatory framework, telecommunications companies may be able to issue electronic or stored value accounts without partnering with a bank. This is the case for Gcash in the Philippines, and M-Pesa in Kenya. However, the telecom does need a bank to keep the float. Even where a telecom can independently issue accounts, partnering with banks has the potential to expand the range of financial services offered to m-banking clients.

[30] Mas, Ignacio and Kabir Kumar. 2008. "Banking on Mobiles: Why, How, for Whom?" Focus Note 48. Washington, D.C.: CGAP, June

ANNEX 8: ACCESS TO ICT IN EL SALVADOR

El Salvador: ICT Access

Access	2000	2006	Low & Medium Income Countries	Latin America & Caribbean Countries
Telephone mainlines (per 100 people)	10.1	15.3	21.6	17.8
Mobile telephone subscribers (per 100 people)	12	57	38.1	54.9
Population covered by mobile telephony (%)	85	95	..	90
Internet users (per 100 people)	1.1	9.6	11.4	18.4
Personal computers (per 100 people)	1.9	5.2	4.3	11.3
Affordability				
Price basket for residential fixed line ($ a month)	16.3	2	8.2	9.5
Price basket for mobile telephone service ($ a month)	..	8.5	9.8	10.4
Price basket for Internet service ($ a month)	..	22.6	10	12.2

Source: World Bank ICT at a Glance (http://devdata.worldbank.org/ict/slv_ict.pdf)

ANNEX 9: CHARACTERISTICS OF EL SALVADOR'S TELECOMMUNICATIONS PROVIDERS

Telecom Companies - Mobile offer in El Salvador				
	Digicel	**Claro**	**Tigo**	**Movistar**
Meeting with us	Yes	Yes	No	No
Market				
Market share	27%	ND	ND	ND
Geographic Coverage	96%	ND	ND	ND
Urban/Rural	100%/100%	ND	ND	ND
San Salvador/Other	ND	60%/40%	ND	ND
Pre/Post - paid	90%/10%	80%/20%	ND	ND
Platform				
GSM/CDMA	GSM	GSM	SGM	GSM
Base technology	Edge	Edge	ND	ND
GPRS	100%	100%	Yes	Yes
SMS	100%	100%	Yes	Yes
3G	No	Urban	ND	ND
OTA update cap.	Yes	Yes	ND	ND
Rates				
Post paid	$0.2300	$0.2280	$0.2000	$0.2400
Pre paid	$0.3000	$0.3500	ND	$0.3500
1MB data/month	$3.4000	$4.0000	ND	$8.0000
SMS (unit)	$0.0500	$0.0565	ND	ND
m-banking				
Integrators	ATH, Movibanca	Movibanca	ATH, Movibanca	ATH, Movibanca
Project	Regional	Regional	ND	ND
Development	Own	Third party	ND	ND
Capabilities in all phone devices	SMS, GPRS, Edge	SMS, GPRS	SMS, GPRS	SMS, GPRS
Capabilities in non basic phone device	SMS, GPRS, Edge	Edge, 3G	Edge, 3G	Edge, 3G
Device OTA cap.	Non basic	Non basic	Non basic	Non basic
Notes: ND =Not determined				

ANNEX 10: IT SERVICES IN EL SALVADOR

IT Infrastructure and Services offer in El Salvador (examples)[31]				
Feature	**GBM**	**IDS**	**Sysde**	**Sifco**
Core Banking				
Centralized (On line)	Yes	Yes	Yes	Yes
Integrated (modules)	Yes	Yes	Yes	Yes
Microsoft platform	Yes	Yes	Yes	No
Unix Platform	Yes	No	ND	No
Open source	No	No	No	Yes
Rating (study)	**Good**	**Good**	**Good**	**Regular**
Transactional module				
Own/Third party	Alliance	Own	ND	No
Messaging standards	ND	ISO8583	ND	NA
Multi-channel	ND	Yes	ND	NA
m-banking application	Alliance	Own	Own	No
Company profile				
Target market	Banks	Banks, NBFI	Banks, NBFI	NBFI
Main services				
Software developer	No	Yes	Yes	Yes
Integrator	Yes	Yes	ND	No
Consultancy	Yes	Yes	Yes	Yes
Integrated solutions	Yes	Yes	ND	ND
Experience				
Years	20+	25+	18+	4+
Presence in El Salvador	Strong	Strong	Small	Small
Region	Strong	Strong	Strong	Guatemala
Clients FI in El Salvador	All Banks, some NBFI	Fedecredito Scotiabank	AFP Confia	Coop. del Bco Cuscatlan
Rating (study)	Good+	Good+	Good	Regular
Notes: ND= Not determined; NBFI = Non Banking Financial Institution				

[31] For more information on these companies see: www.gbm.com; www.ids-ac.com; www.sysde.com; and www.sifco.org

ANNEX 11: INTEGRATOR SERVICES IN EL SALVADOR

Integrators and Payment systems in El Salvador		
Feature/characteristics	**ATH**	**MoviBanca**
Switch server		
Multi-channel	Yes	Yes
Multi-FI/C	Yes	Yes
Messaging standard for channel	ISO 8583, SPDH	ISO 8583
Messaging standard for FI/C	ISO 8583	ISO 8583
Security protocols	SSL 128, 3DES	Standard FI/C
Channel device application		
ATM	Yes	Yes
POS	Yes	Yes
e-banking (Internet)	ND	Yes
Other	ND	Yes
m-banking	ND	MoviBanca
Own/Third party	Own	Own
Platform base	SMS	SMS
Additional platforms	ND	WAP (testing)
Application in cell phone	No	Menu driven
Application not in cell phone	ND	WAP
FI with agreement	HSBC, Agricola, Scotiabank	HSBC, CitiGroup (Banco Uno)
Telcos with agreement	Claro, Digicel, tigo	Claro, Digicel, Tigo, Movistar
Company profile		
Target market	FI/C	FI/C
Main services		
Software provider	No	Yes
Integrator (ASP)	Yes	Yes
Experience		
Years	25+	5+
FI clientes in El Salvador	All Banks using switch services	HSBC, CitiGroup
Telco clientes in El Salvador	All	All
Region clients	170+ FI, 5000 Merchants	Guatemala
Rating (study)	Good	Good
Business model	Share revenues (open to negotiate)	Share revenues (open to negotiate)

ANNEX 12: FIS' SERVICES, IT INFRASTRUCTURE, AND USE OF TRANSACTIONAL CHANNELS

Financial Institutions' Services, TI Infrastructure and Transactional Channels use									
EF	**HSBC**	**Bco. Hipote-cario**	**Promerica**	**BAC Credo-matic**	**Bco Agri-cola**	**Scotiabank**	**Apoyo Integral**	**Fedecredito**	**ASOMI Affiliates**
Type of FI	Bank	Bank	Bank	Bank	Bank	Bank	NBFI	R- NBFI CACs&BT	NR-NBFI
Branches	73	18	23	40	64	59	26	100	85
Clients	ND	80,000	ND	158,000	1,000,000	ND	30,000	500,000	85,000
Target market	MSME	SME	MSME	MSME	MSME	MSME	Micro	MSME	Micro
Main services									
Savings	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Checking ac-counts	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Credit accounts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IT Infrastructure									
Centralized CB	Yes	Yes	Yes	Yes	Yes	ND	Yes	Yes	No
Integrated CB	ND	ND	ND	ND	No	ND	No	Yes	No
Trnx switch	No	ND	ND	Yes	ND	ND	No	Yes	No
Rating (study)	Regular	Regular	Regular	Good	Regular	ND	Poor	Good	Poor
Channels in use									
ATM	210	50	10	170	200	120	No	Proj.	No
POS	Yes	ND	ND	8000	No	ND	No	ND	No
Kisoks	Yes	ND	6	Yes	Yes	Yes	No	ND	No
IVR	Yes	Yes	Yes	Yes	Yes	Yes	No	ND	No
e-banking	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Call Centre	Yes	Yes	ND	ND	ND	Yes	ND	ND	ND
m-banking	Yes	No	No	Yes	Yes	No	No	No	No

Financial Institutions' Services, TI Infrastructure and Transactional Channels Use (continued)									
EF	**HSBC**	**Bco. Hipote-cario**	**Promerica**	**BAC Credo-matic**	**Bco Agri-cola**	**Scotiabank**	**Apoyo Integral**	**Fedecredito**	**ASOMI Affiliates**
ATM/POS Nets	Yes	Yes	Yes	Yes	Yes	Yes	No	Proj.	ND
Rating (study)	**Good**	**Regular**	**Regular**	**Good**	**Good**	**Good**	**Poor**	**Poor**	**Poor**
Potential for									
m-banking ser-vices	Yes+	Yes-	Yes	Yes+	Yes	Yes+	Yes-	Yes	No
Cash conversion point							Yes+	Yes	Yes+
Notes: R-NBFI = Regulated NBFIs; NR-NBFI = Non regulated NBFIs; ND = Not determined									

ANNEX 13: M-BANKING INITIATIVES IN EL SALVADOR

m-banking initiatives in El Salvador		
Feature/Characteristic	**MoviBanca**	**BAC Credo-matic**
Model	Shared	Individual
Starting date	2005	2008 Q3
FI participants	HSBC, Agricola, Citi (Banco Uno)	BAC
Integrated telcoms	Movistar, Claro, Tigo, Digicel	ND
Platform	SMS	SMS
Operation		
Current version	User texts message	User texts mes-sage
New version	Menu driven	Menu driven
Application host for new version	Device/WAP server	Device/ND
Security		
Device to m-banking switch	Clear text (no IDs)	Clear text (No IDs)
m-banking switch to FI Core system	encryption SSL 128	ND
Additional security		
Current version transac-tions	Account inquiries, Credit card payments, Transfers	Account inqui-ries, Credit card payments, Loans payments, Trans-fers
Next version planned transactions	Bill payments, Intra & Inter bank transfers	Withdrawals, Bill payments, Intra & Inter bank transfers

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