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microNOTE # 31

Client-Focused Technologies in Microfinance

1. Introduction

How can microfinance reach greater scale and improve operational efficiency? Practitioners and donors are increasingly focusing on the use of client-focused technologies as a way to improve the outreach and performance of microfinance institutions (MFIs) by creating new distribution channels and lowering transaction costs. Personal digital assistants (PDAs), point-of-sale (POS) devices, and cell phones are leading the current technological efforts in the microfinance industry. What is the full potential of these client-focused technologies for microfinance?

This microNOTE examines the use of these three types of client-focused technologies by eight financial institutions in Africa and Latin America and provides factors for consideration by other financial institutions when implementing these technologies for microfinance purposes.

2. Personal Digital Assistants as a Tool to Make Microfinance Operations more Efficient

Personal digital assistants represent the first attempt to apply client-focused technologies for microfinance purposes. The experience of Banco Solidario in Ecuador with its PDA application, SiCredito Movil, shows that the use of this technology can contribute to improvements in loan officers' productivity and efficiency and to a reduction in portfolio at risk. SiCredito Movil allows for the following functionalities:

JANUARY 2007

This publication was produced for review by the U.S. Agency for International Development. This microNOTE was compiled by Lauren Mitten from Development Alternatives, Inc. (DAI) based on microREPORT #77 on the same topic written by Susana Barton, Carlos del Busto, and Christian Rodriguez at ACCION International with collaboration from Alice Liu from DAI.

- Loan officers can capture information on potential borrowers and complete applications directly on the device. Electronic transfer of data into the institution's management information system (MIS) also minimize the number of mistakes or incomplete applications.
- Loan officers can see the evolution of their portfolio directly on their PDA so can organize their monitoring visits to prioritize higher-risk clients.
- Loan officers can consult online with local credit bureaus to check the credit history of potential borrowers.

3. Increasing the Scale and Productivity of Microfinance Operations through Point-of-Sale Devices

Because of high set-up and operational costs associated with opening and supporting remote branches, financial institutions are looking at POS solutions as a cost-effective alternative to setting up branches to serve remote areas.

The Colombian and Peruvian Experience with the Correspondent Agent (CA) Model

Several Latin American financial institutions, including BANCOLOMBIA-CONAVI in Colombia and Interbank in Peru, are testing the use of branch-equivalent solutions. The most common model for these solutions is the correspondent agent (CA) model that uses a network of local agents to provide financial services to clients in more remote areas.

Under this model, the financial institution works closely with an external technology provider to identify potential locations for the remote branches, such as retail stores, supermarkets, convenience stores, and gas stations. The hardware requirements for these locations are minimal, consisting mostly of the POS device. Infrastructure requirements, however, can pose problems in rural areas. To operate, this model requires electrical power and a phone line for data transmission, or GSM coverage for wireless communications.

Location owners are referred to as bank agents. It is preferable for the agent to be a client of the financial institution to facilitate the transactional flow and payment settlement in the CA solution. This system can support the following types of transactions: deposits in saving or current accounts (if regulation permits); payments for products and services; transfers between accounts of the same institution and between accounts of different institutions; and card-less transactions allowing the clients to enter their account numbers and respective PINs directly into the POS device.

The experiences of BANCOLOMBIA-CONAVI and Interbank suggest that: 1) the CA model is a cost-effective distribution channel for reaching lower-income clients in remote areas; 2) selection and training of agents is extremely important; 3) agents should be located in high traffic areas with reliable communication system; and 4) regulators have shown flexibility for the use of the CA model.

The Remote Transaction System (RTS) at Uganda Microfinance Limited

The RTS is a solution that allows clients to make savings deposits and loan payments through a network of agents. This system is at the final stages of its pilot phase at Uganda Microfinance Limited (UML). Upon completion, this technology should support a full range of transactions, including withdrawals and account-to-account transfers. With a combination of POS devices, smart cards, and a network of agents, the RTS solution enables MFIs to offer financial services in remote and rural areas at a fraction of the cost of setting up and operating a branch.

The RTS technology works through a combination of smart cards and POS devices in a GSM network. The system uses wireless POS devices running the RTS client software. These POS terminals wirelessly communicate with a central server, which then connects to the MFI's main MIS. Once the information has been transmitted to the MFI's MIS, this system performs the corresponding entries and reconciliations.

Experience has shown that the RTS at UML is a cost-effective distribution channel to reach clients in remote areas; building the network infrastructure for this type of system can be complex and time-intensive; agent selection is a key success factor in this model; and clients are willing to use cards.

Biometrics at Opportunity International Bank of Malawi (OIBM)

One of the greatest obstacles to delivering financial services in Malawi is the lack of an identity card system. To provide banking services to Malawi's low-income population, OIBM has effectively combined biometric-enabled POS devices and smart cards to overcome the identification problem, using fingerprints instead of identification numbers.

As part of this model and through partnerships with small retail outlets, the bank has set up a network of POS agents in rural areas. Also, OIBM uses the POS solution at one of it branches located in a high-transit area. Currently, more than 60,000 clients are using this service on a regular basis. Types of transactions include: payment for goods and services; cash back; deposits; money transfer within own accounts; money transfer between two client accounts; check bank account balances; and in-country remittances.

The POS solution has allowed OIBM to reach rural areas cost-effectively, improved productivity of staff, and increased customer satisfaction as they are able to complete their transaction more securely and quickly. AID templates for success stories, photo captions, before-and-after stories and other items do not include placements or boilerplate text for author credit. Therefore, we had to create our own, which you see at the bottom of the front page. What we created is the same text required for USAID reports authored by non-USAID writers. Please do not change any of the text that appears outside of the V-shaped brackets.

The light blue box at the bottom of the front page is the same width as the front-page text and is placed three-fourths of an inch from the right edge of the page and five-eighths of an inch from the bottom edge. The text in the box is accessible from the front-page footer. Simply move the blinking cursor to any text on the front page, pull down the "View" menu, and select "Header and Footer." Then, scroll down to the light blue box. Move the mouse over the white text and click once. The blinking cursor will appear in the white text.

4. Cell Phones as a New Distribution Channel of Financial Services

As the number of cell phone subscribers increases in developing countries, the potential to offer financial services through mobile phones also increases. There are already some interesting experiments trying to prove the viability of mobile phones to provide financial services. This section presents examples of mobile banking implementations from K-Rep in Kenya, G-Cash in the Philippines, and WIZZIT in South Africa.

K-Rep Bank's Experience with Mobile Solutions

K-Rep's experience with mobile phones was brief and did not prove successful. The main problem with K-Rep's

mobile banking solution was an inappropriate choice of vendor and technology type. The bank's technology provider was not able to provide an unstructured supplementary service data technology capable of reliable transfer of transactional data. Several of K-Rep's mobile transactions were lost between phone and the bank, creating issues with the transaction reconciliation. From this experience, K-Rep learned:

An institution must perform complete due diligence before selecting the technology. It must have a thorough understanding of how the technology operates, the minimum institutional requirements, and the risks associated with implementing the technology.

The technology provider should not only be an expert on the technology, but it should also be able to provide the financial institution with guidance about which technology best suits the institution's needs.

G-Cash

To reach unmet demand for financial services, the Rural Bankers Association of the Philippines (RBAP) partnered with Globe Telecom, through its G-Cash mobile banking solution.

G-Cash is a mobile banking solution offering a range of payment services through the use of unstructured supplementary service data in an SMS-like format type. Started in 2004, G-Cash now has more than 3,100 outlets, providing users with services, including:

- Payment for goods and services at any G-Cash outlet, such as utility companies, schools and grocery stores;
- Cash withdrawals at authorized G-Cash stores;
- Deposits through the Text-a-Deposit (TAD) service;
- Money transfer services;
- Account balances; and
- Airtime transfers between two client accounts.

G-Cash presents the following advantages to microfinance organizations. First, it provides an inexpensive solution for the repayment of loans. The service only costs $ 0.02 per transaction, making electronic payments very affordable for RBAP clients. Similarly, the service is very easy to use by any type of client. Text messaging is very popular in the Philippines; hence the use of cell phones to send electronic payments has been very well received. Furthermore, the G-Cash service helps participating RBAP banks to better manage their loan officers' time. Loan officers have been very supportive of the initiative due to the time savings they experience from clients text messaging their payments.

WIZZIT, a Branchless Bank

WIZZIT, conceived in 2002 with the aim of providing affordable transactional capability to a previously underserved and mostly unbanked market, was established as a commercial, mobile phone-based bank, operating off a banking license of the South African Bank of Athens. In addition to its strong mobile phone component, the WIZZIT model incorporates more traditional distribution channels to allow clients to perform cash-based transactions. With a combination of ATMs, POS devices, and Maestro cards, WIZZIT clients have access to cash across the country.

WIZZIT is currently looking for ways to offer its services to microfinance clients. Through a partnership with Beehive, a local MFI, WIZZIT is testing the reaction of microfinance clients to its services. Beehive's staff members are trained as WIZZIT agents, and clients who join the MFI are offered WIZZIT accounts. The loans of the

MFI's clients are directly disbursed to the WIZZIT accounts and the clients can use their accounts to directly pay their loans, providing a branchless way for clients to manage their microfinance loans.

5. Conclusions

From the information presented in the case examples, several questions can be answered about the potential of client-focused technologies-- specifically PDAs, POS devices, and cell phones—to help the microfinance industry reach its goals. The responses to these questions are based on the experiences of a select group of MFIs and should not be taken as conclusive for every condition or scenario. Instead, these responses may serve as a guide to factors for consideration when selecting and implementing these technologies.

Question 1: Does Client-Focused Technology Help Microfinance Reach Scale and Efficiency?

Most of the examples indicate that client-focused technologies do help MFIs increase their scale and efficiency. Banco Solidario's PDA application shows positive impact on the efficiency of loan officers by giving them a tool for improving the loan application process. It also demonstrates that PDAs are helping loan officers manage their time more effectively by allowing them to better organize their field visits.

Similarly, POS and cell phone systems offer an opportunity to MFIs to increase their outreach in remote and rural areas. When the country infrastructure allows, POS-based systems are a less expensive solution for providing financial services to remote and rural clients when compared with the expenses associated with opening a new branch. However, as shown in the RTS example, the development of this type of solution can sometimes be slow and complex because it depends upon on good communication infrastructure—not available in every country. ices cannot interpret photographs or bar graphs unless the document creator has made these items accessible.

Question 2: Were the Institutions' Expectations of the Client-Focused Technologies Met?

Experience demonstrates that the institutions' expectations were met. Client-focused technologies enabled the MFIs to: increase client outreach; achieve gains in staff productivity and efficiency; attain competitive advantages over competitors; and reach institutional goals, such as reaching underserved segments of the market.

Question 3: What are the Reasons for Success of Failure of the Different Business Models Used to deploy these Client-Focused Technologies?

Institutional buy-in is critical for successful implementation. It ensures that the technology project will receive the necessary human and capital resources. An institution considering implementing client-focused technologies must be aware that the implementation will divert key personnel from their existing responsibilities and must plan accordingly. An institution should link the technology project to a strategic business goal, such as outreach to underserved clients, which will support the institution's efforts in attaining broad-based institutional buy-in.

Additionally, the choice of technology provider is fundamental to the success of the implementation. The provider should be able to offer the institution a variety of options to allow the institution to select the option that best meets the institution's business needs. The provider must be an expert on the specific technology and should ideally support the institution on both the implementation and the business planning required to make the technology work.

Local infrastructure is another main success factor. Wherever possible, technology projects should make use of the existing infrastructure. Having to create the infrastructure can be slow, expensive and complex. To best take advantage of the local infrastructure, an institution should carefully examine remote communications networks to assess whether or not these networks can support the data traffic the technology solution will generate. Moreover, the financial institution and technology provider should work together to determine if the technology can be adapted to work with the current infrastructure.

Financial institutions should also pay close attention to local regulations that may jeopardize the implementation of the technology. It is important to educate the regulatory bodies about the technology and how it will be used for microfinance purposes.

Question 4: Do MFIs have a Quantifiable Return on Investment from these Technology Implementations?

It was not possible to determine in quantifiable terms the potential return on investment of these technologies, because the MFIs do not possess the tools or collect the financial metrics necessary to perform pre- and post-investment analyses. However, there is strong anecdotal evidence that the MFIs received significant cost benefits due to the implementation of the client-focused technologies. In the Colombian, Peruvian, and Ugandan cases, the cost of opening branches hindered the ability of financial institutions to reach remote areas. The POS agent solution became a viable solution for reaching such areas. Furthermore, the PDA example shows that using technology can also help to improve the portfolio quality of MFIs, providing important savings in the collection of past-due loans.

Question 5: What are the Technical Prerequisites that an MFI should take into Consideration before Using One of These Technologies?

Two categories of prerequisites exist—1) macro requirements, such as the country's infrastructure and regulatory framework, and 2) micro requirements, or institution level requirements, such as those pertaining to the capacity of the financial institution's MIS and IT departments.

Infrastructure—Country communications infrastructure can be divided into three areas: wired network communications, wireless network communications, and offline capabilities. Different technologies require different types of communications. PDA systems do not require a fully operational wired or wireless communication networks, because the need to perform online transactions is normally low. They do require a full offline capacity, which refers to the device's ability to store information to be later transmitted to the MFI's database.

In the case of POS systems, the network communication needs depend on the type of card implemented with the system. If the POS system is implemented with smart cards capable of maintaining larger amounts of individual account information, they system can support offline transactions, providing a solution for countries in which wireless or wired communications networks are deficient.

Cell phone-based technologies depend on a full wireless network infrastructure.

Regulation—The country's existing regulations and regulatory environment are critical to the proper deployment of these technologies. MFIs seeking to implement these technologies must work closely with the country's regulators and might need to explain to the regulatory bodies how the technology will be uses for banking purposes and how any security concerns about the technology will be addressed.

Institution Level—The MFI's MIS plays a key role in the development of these technologies. The three technologies can operate in either a basic or robust MIS, although a more robust MIS allows for more functionality. [1]

All client-focused technologies require an interface for the applications to communicate and interact with the institution's main MIS. Although the G-Cash solution did not originally require an interface because the number of transactions was low and could be handled manually, an interface will become necessary once the number of transactions increases.

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[1] A basic MIS refers to a system that mostly provides accounting and loan tracking functionalities to an MFI. This type of system will require a high degree of customization to support client-focused technologies. A robust MIS is a system that not only provides the basic accounting and loan tracking functions to an MFI, but is also capable of facilitating fully automated transactions across different hardware and software platforms.

Finally, the MFI's IT department is important for the implementation, because it provides the back office and possibly project management support for the development. Before implementing any of these technologies, an MFI must assess the ability of its IT department to properly manage each step of the implementation. In cases where the institution does not have all the resources required, the MFI must work with the technology provider to identify consultants or external parties to provide the skills and knowledge and to transfer those skills and knowledge to the internal IT department.

Although each of the prerequisites described is essential for the proper implementation of client-focused technologies, other aspects may need to be taken into consideration when implementing technology solutions, given that each technology implementation and each country has unique characteristics.

Information Collection Approach

The information presented in this study was collected using a variety of sources:

- Phone and face-to-face interviews with implementers and providers of client-focused technologies,
- Observations during field visits, and
- Secondary sources.

For the phone and face-to-face interviews, a detailed interview guide was created for each technology in order to help the interviewer collect consistent information for the case examples. Some interviews were more in- depth than others and some included actual field visits for observations.