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PRODEM's Automated Teller Machine and Point of Sale Network in Bolivia

In 2003 IFC provided a grant to the Bolivian Private Financial Fund of the nonprofit microfinance institution PRODEM (FFP PRODEM) to have automated teller machines (ATMs) built and customized for illiterate populations speaking three native languages and to launch a point-of-sale (POS) network. The goal was to increase the number of clients by offering greater access and convenience, particularly to the rural population in Bolivia

This issue of Monitor summarizes the successes and lessons learned from this information technology project. In general, the collective benefits of the ATM network demonstrated its value and the need to extend the infrastructure by linking to other systems and adding products. The ATM network attracted a significant number of clients, including previously "unbanked" populations. The ATMs also saved PRODEM money, while allowing nationwide access to remittances. If lessons on marketing, technology down-time, product offerings, and pricing were applied, this delivery channel could succeed even more. PRODEM's POS network, in contrast, proved unsuccessful due to (a) technology challenges, (b) lack of a user-friendly interface and properly aligned agent incentives, and (c) insufficient product features and transaction limits. The POS network required an entirely different technology and more deliberate planning and services, which the project failed to achieve.

FFP PRODEM is a regulated, privately held fund launched in 1999 with 10 years previous experience as a nonprofit microfinance institution in Bolivia. Many of its customers are rural and illiterate, speak only a native language, and are not familiar with modern banking services. PRODEM has sought to increase the number of clients in rural areas with access to saving services, and thereby extend their access to capital, by expanding PRODEM's existing ATM network and introducing POS terminals at nearby selected shops. PRODEM addressed the unique challenges presented in rural areas and by illiterate customers by incorporating voice commands in three local languages (Aymara, Guarani, and Quechua), using biometrics for customer authentication, and other innovative approaches.

The Program and its Impact

PRODEM's new ATMs involve dial-up connections, decentralized database copies, daily uploads, and semi-manual card updating. Customers hear voice-over prompts and screen guides in a choice of three native languages. Authorization is achieved through digital recognition of biometric thumbprints. The smart cards store account balance information. The ATM network enables withdrawals, purchase and sale of dollars, and balance inquiries, whereas the POS network enables purchase of products, withdrawals, and balance inquiries.

Monitor shares key findings from in-depth reviews of IFC programs and projects conducted by external evaluators. The reviews address the relevance, efficiency, effectiveness and sustainability of these programs. For more information about the evaluation of IFC programs visit http://www.ifc.org/results.

A private company INNOVA customized and built the state-of-the-art ATMs for the project.

IFC granted PRODEM $200,000 for the ATM and POS project, specifically to support the following four objectives:

- Develop technology for rural areas, largely for indigenous populations
- Construct and install 9 of 18 ATMs
- Construct and install 20 POS devices in rural areas, at such places as gas stations to expand services without extending agency
- Train rural users in use of intelligent debit cards.

In early 2006 IFC commissioned an independent consulting firm, eChange LLC, to conduct an evaluation of the FFP PRODEM ATM and POS project. The purpose of the evaluation was to determine the relevance, effectiveness, impact, efficiency, sustainability, and potential for replication of PRODEM's information technology project for extending delivery of client services. Key indicators included (a) impact of the implemented technology on rural populations, microentrepreneurs, and the institution itself, (b) commercial viability of the technology, and (c) replicability of the delivery channel. The latter was measured by comparing PRODEM's solutions and model to the technology and approaches employed by other technology-based innovators targeting rural and remote communities, microenterprises and small businesses. The evaluators relied on responses by FFP PRODEM and INNOVA to specific information requests and on customer interviews, IFC reports, and relevant industry documentation.

OVERALL FINDINGS

From 2001 to 2005, PRODEM deployed 50 ATMs, exceeding the project's original target of 18. All ATMs were installed adjacent to branch buildings. Twenty-five ATMs were located at rural branches and 25 in urban branches. With the location of ATMs mirroring the footprint of the existing network, the ATM strategy failed to reach a more remote, poorer, and less educated population; however, the ATM network helped to reach previously unbanked populations for whom ease of access, quick response, low cost, and national reach were important drivers. During the project period, PRODEM's client base grew tenfold in those branches with ATM service and only tripled in branches without ATMs.

The evaluation found that the collective benefits of ATMs for both customers and PRODEM demonstrated the value and need to extend the infrastructure by linking with other systems and offering additional products through the ATM delivery channel. Many lessons, however, were learned around marketing, technology down-time, product offerings, and pricing that, if incorporated, would make this delivery channel even more successful and profitable. Some examples include the following :

- Linking with the country's existing ATM networks to give customers even greater national coverage and raise additional revenue for PRODEM
- Reducing the annual fee for the cards and providing them to all PRODEM customers to help reach poorer populations
- Reducing machine down-time and improving timely cash stocking to increase customer satisfaction.

During the same period, PRODEM also rolled out 30 POS devices in gas stations, phone offices, and supermarkets. The POS devices were located within a roughly 10- to 20-minute drive from a PRODEM branch, thereby slightly extending the reach of PRODEM's network of services. In contrast to the ATM network, the POS network proved unsuccessful, with only 14 remaining at the time of the evaluation. Transaction level through POS channels has been very low, an average of only nine a month, not including a significant number of errors on the part of the agents.

Problems cited in the evaluator's survey of six branches that had installed POS devices included (a) technology challenges, (b) lack of both a user-friendly interface and effective rollout design and planning, (c) insufficient promotion of the services and weak incentives for the agent, as well as (d) limited services available through POS. PRODEM is currently rethinking its strategy for this delivery channel, including the technology, locations, and even products offered. Much could be learned from global experience on such networks to inform strategy development, especially on current communication technology, devices, agent models, and cost structures allowing financial transaction costs to be kept at affordable level for low-income populations. Due to PRODEM's lack of success in POS devices, the rest of this brief focuses on evaluation of the ATMs.

There may be value in other institutions taking up PRODEM's ATM technology and replicating this business model to reach more markets. This would require, however, significant business rigor, focus, and planning by either INNOVA or some other entity to make such an effort viable. Opening PRODEM's network to others by joining one of the existing ATM networks in Bolivia would require further changes to the software to make it more universal and interoperable. This might expand the value for customers, significantly increase the volume of transactions over the ATM channel, and increase the return on resources already invested to build this network infrastructure.

OBSERVATIONS AND PATTERNS

Between December 2001 and December 2005, PRODEM grew its client base from 14,555 to 187,844 clients. Nearly 50,000 of the customers opted for smart cards to take advantage of the ATM network, which now covers 57 percent of the 88-branch network. Of those, 53 branches are in rural and 35 are in urban areas. In addition to the growth of the number of savings accounts, the evaluators observed a number of patterns and trends in the data they collected:

- The volume of transactions completed through the ATM channel was so high in 2005 that it would have required PRODEM to hire an additional 55 tellers to meet that demand through branches.
- In ATM-equipped branches, the number of loans to rural clients with smart cards was greater than loans to urban clients with smart cards.
- Rural customers were found to maintain higher savings balances.
- Fewer women opted to have smart cards than did men.
- Those living or working closer to a branch were more likely to become card users.

Use by entrepreneurs. Only 40 percent of clients with smart cards are microentrepreneurs; whereas 71 percent of clients without smart cards are microentrepreneurs. Additionally, only 39 percent of microentrepreneurs prefer to use the ATM channel. More investigation could uncover the reasons why current microentrepreneurs clients are not choosing to use the service.

Use by women. More women opted not to take cards than men, and of those customers who do have cards, more are men. Women cited two primary reasons for not taking cards: they did not know about the service and they thought they did not have the capacity to save. This points to the fact that women generally have fewer economic opportunities and are poorer then men and therefore, presumably, are unable to benefit from this type of savings service. In the group surveyed, women indeed had lower educational levels and lower incomes than men and more were self-employed or unemployed than men. It also indicates that PRODEM has a great potential to increase its customer base further by focusing its products and marketing efforts on this segment.

Use by native speakers and illiterate people. Seventy percent of those surveyed thought the voiceover prompts were helpful or even necessary. Despite the fact that most of the respondents chose to be interviewed in Spanish, 31 percent said the voiceover prompts in the customer's native language were necessary and 38 percent said they were helpful. This indicates the high value for customers of being able to transact in a language most comfortable to them, which provides a powerful edge in customer service and reach. In addition, customers considered the fingerprint technology to be a key advantage and benefit of the service.

Use by customers in remote locations. Of those surveyed, 78 percent can reach their ATM branch in 30 minutes or less, either by car, public transport, or walking. The remaining 12 percent need more than 30 minutes to an hour to get to the ATM branch. This may indicate that (a) the farther a customer is from a branch, the less likely they are to use the services, due to the high real or opportunity costs associated with traveling to the branch and (b) the 12 percent of cardholders living farther away may be more mobile or use services in other branches as well.

Direct benefits of PRODEM's new ATM and POS services. Due to fragmentation of the data, it was not possible to determine quantitative increases in earnings or reduction in costs to customers using the ATM or POS services. The survey, however, indicated that those using ATM services recognized some direct benefits:

- Customers are keeping less money at home, implying that they are earning interest on this money, which is contributing to family income.

- Customers cited the specific benefits of easy and fast access to accounts, round-the-clock access, a safe place to save, and national coverage.
- Microentrepreneurs cited access to remittances. More investigation is required to determine the economic effect these remittances may or may not be having on micro- and small businesses.
- When microentrepreneurs were asked how ATM services were helping their business, they cited national coverage and, therefore, greater access, as well as being able to save more. Microentrepreneurs have perhaps been able to move from market to market through national ATM coverage with lower risk (personal and financial) by being able to either deposit funds quickly from goods sold or withdraw money to purchase inventory or materials for their business.

LESSONS LEARNED

In summary, the ATM network did not help to reach more remote, poorer, less educated, or disadvantaged populations than FFP PRODEM would otherwise have reached through its branches. However, the ATM strategy succeeded in reaching previously "unbanked" populations, the young less than 30 years old), educated, salaried, microentrepreneurs, and small business owners. Of those who opted to have smart cards, 58 percent had not previously accessed credit from another source; this means they now have access to credit.

Those opting to use the smart cards, are clearly benefiting from this service and could benefit even more with improvements to the service. Some lessons learned from introduction of smart cards, ATM technology, and POS network include the following:

- According to the client interviews, an appropriate ATM design (native language interface, voice prompts, and biometric identification) is a very positive, important, and even necessary component of the service and so were clearly not a factor in limiting access to marginalized population groups.
- Ease of access (anytime of day or night), quick response, low cost, and national reach are important drivers for the cardholders.
- Perhaps the most useful information for PRODEM from the client surveys was learning why customers had not opted to take cards. Clearly more can be done on the marketing side to better promote the value of the service to a broader segment of the population. At the same time, the survey indicated that this service is not reaching women and poorer populations because they feel they do not have enough income to save. Therefore, PRODEM might consider creating alternative saving and/or income-generating schemes or partnerships for reaching these groups.

Recommendations

The evaluator made a number of recommendations, including on how to increase the commercial viability of the ATM network by considering:

- Expansion by joining other ATM networks in the region
- Clarity of intellectual property rights with regard to the software and hardware design
- Ability of INNOVA or other vendors to scale up the manufacturing process for expansion of the ATM network
- Development of a clear strategy, product offers, and roll-out efforts to build a POS network
- Expansion of services and products, as well as introduction of more focused marketing efforts to meet the specific needs of women and entrepreneurs.

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