The Role and Impact of Information and Communication Technologies (ICT) in Microfinance

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ABSTRACT

Microfinance services available to the poorest people, especially investment loans for micro-business development, are recognized as an important part of poverty reduction strategies. As the industry matures, MFIs face a competitive environment, forcing them to balance the goals of outreach and sustainability. However, in spite of its successes, microfinance has not been able to reach to the poorest of the poor particularly in the low density population areas of Madhya Pradesh, Orissa, Bihar, Uttar Pradesh etc. in India. The main reason behind this gap is the cost of credit delivery. Information and communication technology (ICT) is an important driver and the great hope, although it brings with it fundamental changes to the microfinance delivery mechanisms that have become almost sacred for the microfinance sector. This research is at the intersection of inquiry on ICT for development and the digital divide, the impact of microfinance, and the use of ICT in the financial services industry. We discuss the role and impact of ICT on outreach and sustainability at the industry levels.

Keywords: Information and Communication Technology, Microfinance, Outreach, Sustainability
INTRODUCTION

The ideas and aspirations behind microfinance are not new. Actually, they can be traced back to 15th century in Europe when the first pawn shop was created to counter usury practices. And since then, following the evolution of most societies and cultures, variations on the savings and credit theme could be observed almost all over the world. In the 70s in Bangladesh, with the advent of experimental programs aimed to provide very small loans to groups of poor women to engage in self-employment projects, the term microcredit was coined. Subsequently, supported by the success of these early experiences, microcredit programs flourished worldwide all through the 80s. Then, in the early 90s, the broader term microfinance, used to refer to a larger range of financial services designed for the poor, started to be used in place of the narrower term microcredit.

The Consultative Group to Assist the Poor (CGAP), a coalition of public and private development organizations working to expand access to microfinance for the poor, developed a set of key principles meant to guide the implementation of effective, accessible and equitable microfinance services. The principles, presented bellow, were endorsed by Group of Eight leaders at the G8 summit in 2004.

i) Poor people need a variety of financial services, not just loans.
ii) Microfinance is a powerful tool to fight poverty.
iii) Microfinance means building financial systems that serve the poor.
iv) Microfinance can pay for itself, and must do so if it is to reach very large numbers of poor people.
v) Microfinance is about building permanent local financial institutions
vi) Microcredit is not always the answer.
vii) Interest rate ceiling hurt poor people by making it harder for them to get credit.
viii) The job of the government is to enable financial services, not to provide them directly.
ix) Donor funds should complement private capital, not compete with it.
x) The key bottleneck is the shortage of strong institutions and managers.

More recently, as observed at “Blue Book – Building Inclusive Financial Sectors for development”, many development practitioners and financial institutions believe that we are in the midst of a paradigm shift from microfinance to inclusive finance. Inclusive finance recognizes that a continuum
of financial services providers work within their comparative advantages to serve poor and low-income people and micro and small enterprises.

Providing microfinance to poor clients requires innovative operating methods to manage risk and reduce transaction costs. Poor households do not usually have physical assets to offer as collateral for loans, so MFPs have developed substitutes. The most common form of substitute collateral has been the formation of groups of borrowers and the establishment of joint-liability procedures, where loan group members effectively guarantee one another's loans. To reduce transaction costs, MFPs primarily deal with these loan groups rather than with individual clients and they outsource certain administration tasks to the groups. Some MFPs have developed from existing community based savings and loans cooperatives. In India, for example, these are referred to as “self-help” groups. Other MFPs have evolved out of the revolving loan programs of charitable non-government organisations, which offered loans to help beneficiaries develop income-generating activities. Other MFPs have been established by commercial banks or government-owned development banks, either as a response to their observation that providing financial services to the poor could be a suitably viable business opportunity, or as a response to government edict that they provide financial services to all strata of society, including the poor.

Since the early 1990s, a major emphasis within the microfinance sector has been on institutionalization of microfinance activities, including building the quality and capacity of the governance and management of MFPs, and the development of computerized Management Information Systems (MISs). This institutional development is necessary for a number of reasons. First, if MFPs accept client deposits, they are generally required to meet prudential requirements as defined in local banking laws. Essentially, they are required to become licensed banks. Second, institutional maturity is needed to enable and manage growth in client outreach. Growth in the client base allows the MFP to reap advantages of scale, thereby achieving a greater degree of financial sustainability. Third, institutional maturity is necessary to attract capital investment, whether concessionary or commercial, from external sources. The overriding mission of an MFP is to provide financial services to poor households on a financially sustainable basis. While most MFPs have a pro-poor, development-oriented emphasis, they are more correctly understood as banks rather than as (charitable) development organisations. Indeed, many MFPs are licensed, commercial banks.
THE OUTREACH AND SUSTAINABILITY

There are two current imperatives within the microfinance sector – “increasing outreach” and “improving sustainability”. There is, however, a creative tension between these two imperatives. On the one hand, if “increasing outreach” is taken to mean “more clients from a similar demographic”, then “outreach” and “sustainability” are effectively synonymous terms. Increasing client outreach provides economies of scale that in turn makes the MFP more efficient and therefore more sustainable, at least in immediate financial terms. It is a case of “more of the same”, while continually seeking incremental improvements in operational efficiency. On the other hand, if “increasing outreach” is taken to mean “targeting hard-to-reach clients” such as people living in remote areas, then “outreach” and “sustainability” are effectively competing terms. Reaching clients in remote areas is relatively expensive, which makes the MFP less efficient and therefore less sustainable. This is the real outreach challenge for MFPs because it requires new, as yet unproven business models and processes, including technological innovation.

ICT INNOVATION IN MICROFINANCE

The continuous and growing penetration and implication of information and communication technologies (ICT) into the financial services industry during these last decades are a well documented and undisputable reality. Nevertheless, different categories of financial service providers have obtained very distinctive results concerning the expected increase in productivity and in business performance due to large investments in ICT. In one side of the spectrum, institutions like investment banks and insurance companies have successfully capitalized over their ICT expenditures contrasting with retail banks that have not fared so well. The retail bank sector, studied by Harris (2001) as an example of the IT productivity paradox, faces the consequences of a banking technology that becomes constantly more affordable allied with the broad erosion on entry barriers into banking business.

This disparity in results among the different financial institutions are in most part resultant of different levels of understanding between the organizational innovations necessary to complement new investments in technologies as observed by Castello and Danel (2006).
Without disregarding the differences between microfinance and traditional financial services providers, the previously presented conclusions are totally transposable to the microfinance universe. Defined by Brigit Helms as “meso level”, the well-functioning financial infrastructure or architecture and a network of other service providers necessary to the operation of Microfinance Institutions is possibly the least understood component of the financial system within the microfinance community.

Figure 1 depicts the “meso level” dividing it into four tiers: financial infrastructure, transparency and information, technical support services and business associations and networks. Observing Brigit Helms’s model, it is impossible to not perceive ICT as a major component of the so called “meso level” and consequently a key component that must have its role and implications well understood.

**Back-Office Management Information Systems:**

Many microfinance practitioners see ICT innovation as a key strategy to take microfinance to the next level in terms of outreach and sustainability. The most fundamental ICT application is the back-office MIS. A suitably sophisticated MIS is prerequisite for the MFP to monitor the quality, sustainability and efficiency of its loan portfolio, to monitor development impact, and to manage general administrative tasks. It is not possible for an MFP to upscale significantly without an MIS that can grow with the institution. The larger MFPs have sophisticated back-office systems based on the same...
functionality provided by mainstream banking software. Indeed, some MFPs use off-the-shelf packages that might be found in any commercial bank. There are, however, a number of difficulties that arise when using these packages. Microfinance differs from traditional banking in a number of fundamental ways, with respect to products offered, clients served, the environment in which it operates, and the non-financial information that needs to be recorded and tracked. Many off-the-shelf software packages lack the functionality or flexibility to deal with these realities and requirements. This raises the need to either modify off-the-shelf software or develop in-house software, which assumes that the MFP has the internal capacity to develop and maintain software or the financial resources to outsource this work. More needs to be done to make standard and affordable MIS software accessible to smaller but expanding MFPs.

In the “Microfinance and ICT Innovation” discussion, these MISs are not considered the most exciting innovation – indeed, they are hardly even referred to as innovative. They are, nevertheless, the most critical and fundamental aspect of an MFP’s hi-tech infrastructure. Further ICT innovation, of the type discussed below, is not possible without a sophisticated and appropriate back-office MIS. With this understanding, it is now possible to explore opportunities to apply ICTs closer to the client interface, to create significant new efficiencies and allow MFPs to serve the hard-to-reach clients in more remote areas.

Mobile Computing:

While the back-office MIS enables the MFP to monitor its loan portfolio, this functionality is undermined if the data analysed by the MIS is not up-to-date or contains errors. With dispersed branch offices, paper-based transaction records and manual data entry, there can be a data delay of days and even weeks, and the possibility of introducing errors during the data entry process is high.

A recent innovation that serves to overcome these issues is mobile computing systems – palmtop computers that loan officers take to the field so that financial transactions can be recorded directly into the MIS, without the need for intermediary data entry at the branch office. The data entered in the palmtop computers is typically uploaded to the MIS at the end of the day, either directly in the branch office or via a remote communications link. Furthermore, the roll-out of wireless broadband
infrastructure will enable these systems to be “always online”, resulting in true real time data collection and monitoring of the loan portfolio at branch and institutional levels.

These mobile computing solutions also have significant implications with respect to data accuracy and integrity. Electronic data entry at field level, with on-the-spot, system-generated receipts for clients, significantly reduces data entry errors. Data accuracy is a fundamental requirement for any bank. An MFP will quickly lose credibility with its clients if errors are introduced during data entry, and client confidence is of paramount importance to any bank.

**The Branch Office Franchise Model:**

Serving new clients from remote locales is a key outreach challenge for MFPs. These locales include rural areas where the population density is low, the market is smaller and service provision is more expensive. MFPs find it difficult to serve these areas, especially when the overwhelming pressure is to reduce transaction costs and increase profit margins. One approach to meet this challenge is the “branch office franchise model”, where an MFP links with third-party merchants in remote areas. This is an extension of the mobile computing solution discussed above.

These branch office franchisees manage transactions on behalf of the bank, and they receive an agreed payment for service on a per-transaction basis. Fees might be shared by the client and MFP, on the basis that the transaction costs would otherwise be significantly higher for both parties if the service were delivered by more traditional models. Transaction data is transferred electronically to the bank either in real-time or, for example, at end-of-day. The key qualities of franchisees are that they are long term businesses, respected and trusted in their communities, with computer skills and connectivity. A recent player in this mix, notably in India, is the rural tele-centre networks that are particularly suited to serving as retail outlets for a distributed microfinance network, because of their innovation-business orientation and their familiarity with IT systems and telecommunications services. Given that these (non-regulated) branch office franchises collect deposits as well as loan repayments, the model requires some consideration by financial sector regulators.
Card Services, EFTPOS\(^1\) and ATMs:

There are many similarities between consumer credit cards and microcredit services. Like microfinance methodologies, credit cards were introduced to reduce the high costs associated with small transaction lending. Common characteristics include unsecured credit for unspecified purposes, small transactions, and predefined credit limits. Other salient features of credit cards, which many microfinance clients would like their providers to duplicate, include on-demand borrowing, a re-draw facility, and repayment flexibility within predefined guidelines. We know that microfinance clients desire these features because they continue to utilize local moneylenders for these very services where they are not provided by their MFP.

Given the similarities between consumer credit cards and microcredit services, the concept of a “microcredit card” arises as a logical innovation. The introduction of card-based services also requires the roll-out of either EFTPOS functionality with third-party merchants (as per the branch office franchise model discussed above) and/or Automatic Teller Machines (ATMs). The former is probably the better solution for microfinance, because it facilitates immediate receipt for repayments and savings, which reduces the possibility of intermediary error or fraud. With ATM solutions, deposited repayments and savings are processed “back at the office” and receipted later, a process that is unlikely to secure the confidence of clients. In either solution, withdrawal of credit or savings is equally straightforward.

The delivery of card-based microfinance offers even more opportunities. MFPs can implement microfinance tuned credit-scoring algorithms, allowing clients who have proven their creditworthiness over time through successful repeat business to have their borrowing limit automatically increased, be given access to additional products and services, and be granted greater borrowing and repayment flexibility. MFPs can also consider smart card technology as part of their “microcredit card” solution. Smart cards have an embedded computer chip that can store client and transaction data, as well as process information. Smart cards function as electronic passbooks, thereby reducing reliance on printed receipts. Because all relevant client data is stored on the card, MFPs can utilize EFTPOS

\(^1\) EFTPOS - Electronic Fund Transfer at Point of Sale
systems and ATMs that do not need to be always online. This is a significant advantage in areas where telecommunications are unreliable and/or expensive.

Finally, smart cards can be used in conjunction with biometric technologies (such as fingerprint scanners) to enhance the process of client identification, thereby enhancing privacy and data security.

**Internet Banking:**

Internet banking provides clients with real-time information about their accounts, and the ability to transfer funds between their accounts. It is an empowering tool because it gives bank clients the flexibility to manage their financial resources deliberately, at their own leisure, and without having to visit a bank office during opening hours. In particular, it is a vital accompaniment to card-based services, allowing clients to keep track of numerous small electronic transactions. From the bank perspective, Internet banking is an efficiency tool because it reduces the work of (human) tellers and therefore reduces labour costs. It is a relatively easy and inexpensive service to offer, and the incremental cost of having 1,000, 10,000, or 100,000 Internet banking clients is negligible. The main constraint to MFPs implementing Internet banking is their clients’ minimal access to the Internet. In some areas, this will be overcome somewhat with the roll-out of rural tele-centre networks. It is also possible for MFPs to develop modified ATMs that provide this functionality.

**CONCLUSION**

The ICT innovation in microfinance are being used or implemented in various MFPs around the world. However, there use is limited to big or medium size MFPs. There is much to learn and more experimentation to take place. Nevertheless, the microfinance sector stands at a junction point, where its business models and processes are going to be challenged by these innovations.

There are many constraints to the roll-out of ICT enabled banking systems. One major findings caution the use of some ICT enabled services, especially card-based services. The card-based services tend to de-personalize and individualize the banking process and isolate the client from his/her peers. These conflicts with those group-based methodologies that are held up as the key reason for the high-repayment rates that are typical in the microfinance business. However, this concern cannot stop the transition to electronic services, but it is something that will need to be monitored closely.
Secondly, there are challenges from the microfinance regulatory perspective as well: financial sector regulation that restricts innovation, technical capacities of MFPs to manage the design, roll-out and maintenance of ICT systems, and managerial capacities of MFPs to manage the necessary changes in business processes that will accompany the ICT innovations.

One has to understand that the electronic banking for the poor will definitely work. Economies and enterprises that have not embraced electronic banking and commerce will find it increasingly difficult to do business with those that have. During 60s and 70s many argued that the poor cannot repay, and cannot save. On all counts they have been proven completely wrong. Perhaps the same will be the case with e-microfinance.

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