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MANAGEMENT INFORMATION SYSTEMS IN INDIAN MICROFINANCE[1]

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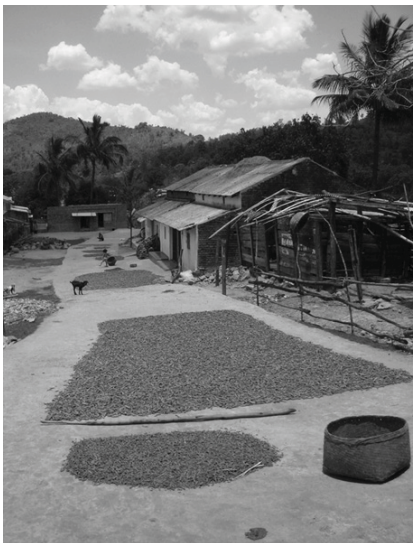


A high quality management information system (MIS) is a key component of any high performing microfinance institution (MFI). Information systems allow MFIs to reduce time spent on rote paperwork, more effectively monitor both staff and clients, and quickly roll out new products and services. An independent survey conducted by the CMF reveals that many Indian MFIs, despite being located in a country with readily available IT talent, suffer from very low quality information systems. Further, a brief analysis of average times required to perform basic functions by MFIs with low quality information systems compared to those with high quality information systems provides strong evidence that the costs associated with having a low quality MIS significantly exceed the cost of upgrading to a higher quality MIS. We estimate that the MFIs with the most basic MISs in our sample could reduce their overall annual cost per client by 38.1 rupees simply by moving to an off-the-shelf MIS and that such an investment would payoff within two years. We propose some potential causes for this apparent under-investment in MIS technology and evaluate prospects for improvement.

BRIEF INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS FOR MICROFINANCE

Management information systems remain one of the least understood aspects of microfinance operations. MFI staff are often unaware of what an MFI MIS should do and thus in what ways their current MIS is lacking. This confusion is compounded by the large amounts of attention paid to the latest "transformational" technology for microfinance operations, such as biometric-enabled ATMs, which often results in MFI managers chasing the latest fad rather than devoting energy to improving their core backend technology.

The best way to learn what functions an MIS can perform for an MFI is to visit an MFI which has implemented a high quality MIS and watch as the employees of the MFI interact with it. For those who may be unable to do so, listed below are a few of the key functions a high quality MIS of a Grameen style lender should be able to perform. It should be noted that the functions listed below are only a subset of the many functions performed by an actual MIS. A more comprehensive description of the types of functions performed by an MIS can be found in the CGAP report Management Information Systems for Microfinance: A Handbook by Charles Waterfield and Nick Ramsing. For those with more time and patience, several software providers, such as the makers of MIFOS, allow users to download free trial versions of their software.

Key functions of an MIS for a Grameen style lender:

- Print credit officer daily collection sheets automatically: The MIS should be able to automatically print a statement listing which centres the credit officer should visit that day and the amount each individual member of those centres should repay. This saves the credit officer time in having to calculate repayment amounts and avoids unnecessary human error.

1. The author would like to thank all of the MFIs which provided information for this report. To protect their identities, the names of these MFIs have been ommitted. The author would also like to thank Mikhail Khaleeli for assistance in data gathering and analysis.

- Generate all necessary reports: Most MFIs are required to report to a broad array of outside organisations from the government to banks to donors. The MIS should have the capacity to generate all of these reports quickly and easily.
- Allow for exception based data entry: The MIS should allow credit officers to record repayment details by only entering in information for those borrowers who have not repaid the full amount on time. Because the vast majority of borrowers do repay the full amount on time, this saves the credit officer countless hours of data entry.
- Allow for seamless data transfer between branches and head office: The MIS should allow users in branch offices to easily send data updates to the head office for aggregation. In the case that some of the branches do not have internet access, the MIS should allow branch users to easily create CDs (or other storage devices) with details of recent updates and allow head office users to easily import updated information from the CD.

In addition to this, the MIS should be secure, requiring all users to login with a username and password and tracking which updates are made by which users.

BENEFITS OF A HIGH QUALITY MIS

The most direct benefits of a high quality MIS are straightforward. First, a high quality MIS can reduce cost by doing away with time spent on rote paperwork. Second, a high quality MIS can allow for more effective monitoring of customers and MFI employees. Credit officers no longer have to sort through lists of repayment records to identify problem borrowers and MFI management no longer must wait for months for repayment and customer acquisition to filter up to them in the form of paper reports before they can get a good picture of what is going on in branch offices.

In addition to these obvious benefits there are also several less obvious and often overlooked benefits of having a high quality MIS to an MFI such as…

- By increasing transparency of operations, an MIS can reduce the risk of outright fraud.
- A quality MIS allows MFIs to modify existing products or add new products by making minor changes to the back-end software. MFIs that rely on paper-based processes often have to design entirely new forms each time a product is changed.
- A quality MIS may lead to more, and cheaper, access to capital as banks are more willing to lend to MFI with a stable and transparent reporting system in place. (This reason is especially salient in the case of Indian MFIs as the Reserve Bank of India (RBI) has effectively prohibited banks from lending via the "partnership model"[2] to MFIs which do not have the capacity to meet the RBI's customer identification requirements know as the Know Your Customer (KYC) requirements.)
- Lastly, a stable and robust MIS is a necessary foundation for MFIs that want to experiment with more advanced technology options such as ATMs, POSs/smartcards, or credit scoring. MFIs which adopt any of these new technologies without already having a high quality MIS in place inevitably find themselves awash in a flood of useful, yet unmanageable data.

IMPLEMENTATION OPTIONS FOR MFIs SEEKING AN MIS

2. In the "partnership model," MFIs act as agents for banks with all loans being on the banks' books rather than the MFIs'. The partnership model was originally designed by ICICI Bank as a way of circumventing the capital adequacy requirements which prevented MFIs from borrowing more than ten times their initial equity in loans.

In the early days of microfinance, MFIs had few options available to them when implementing an MIS other than to directly hire programmers and build a custom-designed system. Software packages originally designed for mainstream banks proved ill suited for MFIs as they were unable to accommodate key features of microfinance such as group lending, flat interest rates, or the waiving of fines on an ad hoc basis. In the thirty years since the birth of the microfinance movement, a variety of organizations, from MFIs such as BASIX to non-profit organizations such as Grameen Foundation to purely commercial companies such as FINO, have developed a plethora of software packages specifically designed to handle the information management needs of MFIs. Some of these companies, such as FINO, allow MFIs to completely outsource their MIS needs by offering a hosted solution.

Listed below are just a few of these software packages:

SOFTWARE PACKAGE	COMPANY/ ORGANISATION	COST	APPROX # OF MFIs USING SOFTWARE*	APPROX # OF INDIAN MFIs USING SOFTWARE*
FINO Core Banking Solution	FINO	For core banking solution only: Rs.25 per account annual maintenance fee	15	15
MIFOS	Grameen Foundation	Free	5	2
Delphix	BASIX	Free	50	50
Bankers Realm MFO	Craft Silicon	15,000 USD (minimum license cost)	34	0
Micro Financier	Java Softech	Not listed on website	10	10
Salesforce.com	Salesforce.com	Free	Still in pilot stage	Still in pilot stage

* Based on best available information. Actual number may be higher.

Furthermore, in the case that an MFI feels that its needs are too specific for an existing software package to accommodate, it can of course still build its own custom-designed solution. Now, an MFI is more likely to find a programmer knowledgeable about microfinance operations or who even has experience in designing and building MFI MISs to design and build such a system.

CURRENT STATE OF MIS USAGE AMONG INDIAN MFIs

In order to more accurately gauge what Indian MFIs are doing in the field of information systems the CMF conducted a short survey of the top management of 11 major MFIs. The survey included basic questions on MIS usage, expenditure on IT, and time required to complete basic functions such as recording repayments or conducting branch audits. The selection of the MFIs included in the survey was not random. Rather, the 11 MFIs were chosen with the goal of creating a broadly representative sample of the largest MFIs in India. All 11 of the MFIs are engaged primarily in Grameen style lending and all had a client base at the time of the survey of over 50,000.

The results from the survey are striking. Ironically, despite the fact that India is an undisputed leader in the field of information technology and Indian companies have produced the two most popular core banking software products for commercial banks, a large proportion of the MFIs surveyed still relied on extremely crude information systems. Three of the MFIs surveyed relied exclusively on Excel for their information management needs. Of these, only one MFI had taken the step of adding internal controls on the spreadsheets used by branches to record loan info to ensure that the layout of the spreadsheets was not modified by users. Out of the remaining MFIs in our sample, a further four relied on custom-designed solutions. While the fact that an MIS has been custom-designed is not in and of itself proof that it is low quality, many of the custom-designed solutions used by the MFIs in our sample were designed and built by a single local consultant who had no experience in microfinance before working with the MFI. As a result, these custom-solutions often lacked the capacity to perform the basic

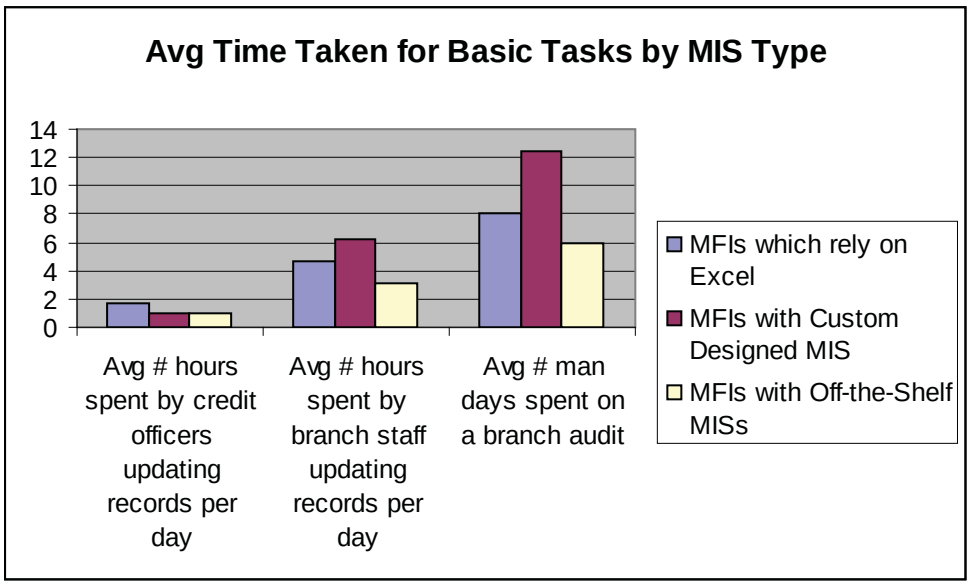
functions described earlier.

Another distressing sign observed during the course of the interviews was that very few of the managers knew with certainty the amount spent on IT within the MFI or had a plan for upgrading their MIS.

COSTS ASSOCIATED WITH HAVING A LOW QUALITY MIS

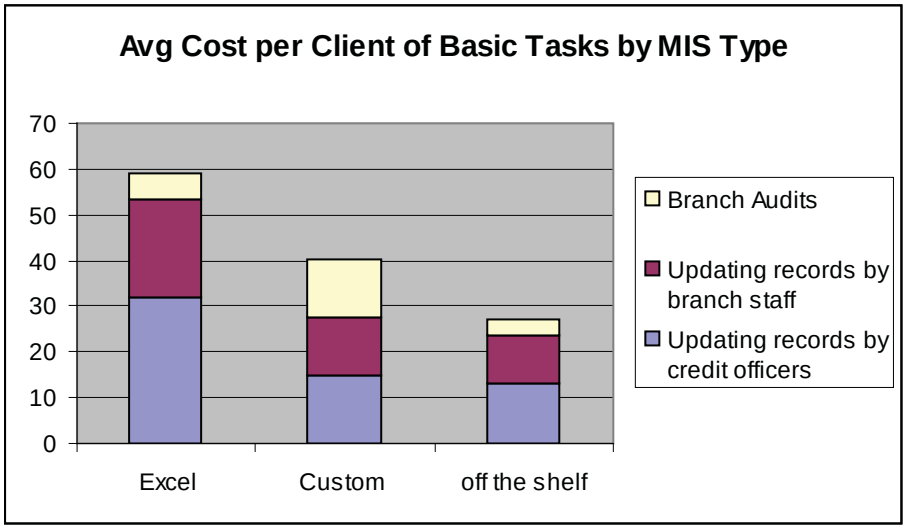
There are several reasons, inherent to the Indian microfinance sector, why Indian MFIs would likely spend less money on an MIS than their counterparts in other countries. First, the relatively low cost of labour in India, even compared to other developing countries, means that the marginal benefit of reducing the amount of time spent on rote paperwork is smaller here than elsewhere. Second, the low product diversity and high degree of standardisation in the terms and conditions offered to each client by Indian MFIs mean that account information is relatively easy to manage. Keeping track of which borrowers in a Grameen-style group in which all of the members have taken out the same size loan at the same time is much easier than keeping track of repayments on a set of individually customized loans. Lastly, the lack of availability of cheap internet access in the rural areas where the majority of MFIs work reduces the marginal benefit of having a high quality MIS as information must still be tediously transferred via posted CDs from branch to head office.

Even taking into account these environmental factors, our survey results suggest that many of the MFIs in our sample are under-investing in their MIS. As a crude measure of the cost incurred by MFIs of having a low quality MIS, we compare the time required to perform three basic tasks – performing a branch audit, data entry and updating of records by credit officers, and data entry and updating of paper records by branch staff – for MFIs which rely exclusively on Excel versus those which employ a custom-designed solution and those with an off-the-shelf software package. It should be stressed that this measure is only intended to be a crude proxy for the actual costs of having a low quality MIS: the measure only accounts for a small portion of the actual ways in which an MIS impacts an MFI's business; actual costs and benefits of implementing an MIS depend greatly on the MFI itself and the local context; and it may be the case that the variation in the performance of the MFIs on these tasks is due to differences other than the quality of their MISs and that these differences are likely to be correlated with the quality of the MFIs' MISs. Further, when considering these costs it is important to keep in mind that we have not accounted for the cost of implementation or maintenance of the MIS. Nevertheless, the magnitude of the differences observed between MFIs with high quality MISs and those using basic Excel spreadsheets for data management is such that an under-investment in MISs by these MFIs seems likely.



Those MFI surveyed which depend solely on Excel for information management spend nearly twice as much time, per branch, on branch audits and over twice as much time on daily record keeping at the credit officer level as those with off-the-shelf MISs . The MFIs which relied exclusively on Excel also spent a significantly greater amount of time on daily record keeping at the branch staff level. Interestingly, those MFIs which rely on custom designed

solutions also fared poorly in terms of the time required to perform these tasks, bearing out our impression that these custom designed solutions were often designed in an ad hoc manner by programmers who lacked the appropriate skills. As an added check, data was also gathered on the overall number of clients per credit officer at each MFI. On this measure Excel-reliant MFIs fared poorly as well with an average number of clients per credit officer 16% lower than MFIs with custom solutions and 11% lower than those with off-the-shelf solutions.



Assuming a cost of labour of 200 rupees per day for credit officers and 300 rupees per day for other branch staff[3], these differences imply that MFIs that rely on Excel spend an extra 38.1 rupees per client per year more than those with off-the-shelf MISs on these three tasks alone[4]. Considering the size of the MFIs surveyed, this means that the MFIs in our sample which rely on Excel could, on average, save 2.1 lakhs per year by adopting an off-the-shelf MIS. While the cost of implementing an off-the-shelf MIS is difficult to predict and depends greatly on a variety of factors, we may take as a conservative estimate 1,00,000 USD as the cost of implementing a typical off-the-shelf MIS for an MFI. By the calculations above, MFIs which upgraded to off-the-shelf systems would recoup their investment in less than two years even without any growth in the number of clients.

POTENTIAL CAUSES OF UNDER-INVESTMENT IN MIS TECHNOLOGY

Nearly all of the managers the CMF team spoke to felt that a high quality MIS was key to the success of their MFI. In the case of managers of MFIs with poor quality MISs, what then is keeping these managers from investing in and upgrading their MIS? During the course of our research we encountered several potential reasons for this lack of investment. Some managers were overwhelmed by the dizzying array of new technologies available on the market and preferred to adopt a "wait and see" approach to determine which ones were really worth investing in. Others were not aware that off-the-shelf software packages able to meet most of their needs were available and mistakenly thought that upgrading would require costly and risky in-house development. Some managers, given the challenge of managing tremendous internal growth, felt that investing in an MIS, while necessary, could be postponed until the pace of growth slackened. We also found evidence suggesting that some managers, forced to constantly scrape for funding and thus unaccustomed to making long term investments, came down with a case of "sticker shock" when they learned about the high up front cost of implementing a new MIS.

POLICY RECOMMENDATIONS

3. These figures are averages of daily salaries, calculated from the reported monthly salaries for credit officers and branch staff of the MFIs surveyed along with a small amount added to account for extra costs associated with the employees such as providing office space.
4. The formula used was simply (time spent updating records by credit officers per day) * (# credit officers) * (cost of credit officer man day) * (# of work days in a year) + (time spent updating records by branch staff per day) * (# branches) * (cost of branch staff man day) * (# of work days in a year) + (# of man days spent on branch audit) * (# of times branch audits conducted in a year) * (# branches) * (cost of branch staff man day). This formula actually slightly underestimates the difference in the costs associated with branch audits as MFIs with poorer quality MISs reported conducting fewer branch audits per year – presumably as a result of the increased effort required for each individual audit.

Fortunately, the spectacular growth of the Indian microfinance sector over the past few years has attracted a host of private players into the market for providing microfinance software. Additionally, banks and investors are becoming increasingly cognizant of the need for some of the MFIs they work with to upgrade their information systems.

Yet these two developments do not address one of the most significant hurdles to MIS adoption by MFIs uncovered during the course of this research – lack of understanding about MIS technology on the part of MFI managers. For this hurdle to be overcome, research institutions such as the CMF itself, apex organisations such as Sa-Dhan, and MFIs which have successfully implemented high quality MISs will have to play a role in gathering and disseminating information. One way this could be done is by conducting an Indian specific review of the major off-the-shelf software packages designed for MFIs currently available. The review would complement the existing review of microfinance software packages conducted by the microfinance organization CGAP by adding such localized information as the availability of local programmers familiar with the software, the availability of local support, the capacity of the software to support various Indian vernaculars, and the capacity for the software to deal effectively with Grameen style lending, which still makes up the majority of lending in the Indian microfinance sector. Another potential way of spreading information would be by holding training sessions for MFI managers. Several organisations already conduct training sessions for MFI managers on MIS technology, but there is still a need for more of these types of sessions.

CONCLUSION

The survey results described above reveal that many Indian MFIs suffer from less than adequate MISs. Further, the analysis of the relative effort involved in performing several basic tasks for MFIs with low quality MISs to those with high quality MISs presented above strongly suggests that MFIs are under-investing in their IT systems.

Recent improvements in the quality of MIS technology for MFIs and the increasing awareness of the importance of high quality information systems by banks are encouraging, but for the situation to improve more needs to be done. This research has revealed that lack of awareness is one of the key obstacles to adoption of MIS technology. A campaign focused on increasing awareness and disseminating information on the benefits of MIS technology and how to successfully upgrade an MIS would greatly help in this effort.

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