Management Information Systems (MIS) for Microfinance

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ICT can be a strategic tool in making Microfinance Institutions (MFIs) more efficient and effective. MFIs can reach more people in a more economic way by implementing the right Management Information System (MIS). While a few MFIs are making good use of technology, the majority are facing difficulties in getting the right solution. Reasons for this include:

- *Insufficient organizational and human capacity*
- *Unavailability of suitable MIS applications for microfinance*
- *Diversity in business processes and frequent changes in procedures*
- *Risk of failure of the MIS*
- *Diversity of geography and language*
- *Unavailability of vendors and their capacity to implement and support IT solutions*
- *High cost of IT solutions for MFIs*
- *Lack of commitment of management and key decision-makers within an MFI*
- *Lack of awareness about the importance of IT*

The back-office MIS is the backbone of any Information System solution and yet it has not received much attention. MFIs, whether large or small, need to have a strong back-office MIS before attempting to deploy any advanced front-end applications or delivery channels. These would be worthless without having a strong and flexible back-office MIS in place.

Introduction

Microfinance is considered to be an effective tool in alleviating poverty by increasing income of poor households and reducing their vulnerabilities. Today, when the majority of the world's population is living below subsistence level, more than 3,000 organizations are providing microfinance services to millions of the world's poor. Yet most of the poor still have little or no access to financial services. Microfinance institutions (MFIs) have reached a mere 70 million out of 2 billion poor people. The task of reaching such a big number is a major challenge.

With a population of around 150 million people, Pakistan has big potential for microfinance. 70% of the population lives in rural areas. Despite achieving a growth rate of 6-7% in recent years, poverty has increased by 2%, showing low penetration of economic benefit to the lower income sector. Unemployment rate stands over 8% and per capita income is US$652. The financial sector of the country comprises some 35 scheduled banks. These banks have an outstanding portfolio of US$20.7 billion against 3.2 million accounts and they hold deposits worth US$33.3 billion in 28.5 million deposit accounts. More than 50% of the deposits and portfolio are concentrated in three main banks with large branch networks.

The microfinance target market is over 7 million households. Major players within the microfinance sector include:

- Khushhali Bank
- Khashf Foundation
- Rural Support Programms (RSPs)
- Bank of Khyber
- The First MicroFinanceBank Ltd
- Orangi Pilot Project (OPP)
- Sindh Agricultural & Forestry Workers' Cooperative Organization
- Sungi Development Foundation
- Taraqee Foundation (TF)
- Thardeep Rural Development Programme (TRDP)
- The Bank of Khyber (BOK)
- ORIX Leasing Pvt. Ltd
- Network Microfinance Bank and
- Rozgar Microfinance Bank

The First MicroFinanceBank Ltd (FMFB) is the first private-sector, regulated MFI in Pakistan, with operations all over the country in rural and urban areas. FMFB was formed as a result of the transformation of the microfinance program of the Aga Khan Rural Support Programme (AKRSP), which has been running an integrated rural development programme in the remote and isolated north of Pakistan for the past 20 years. FMFB has transformed its technology solution from a very basic level to one of the most advanced within its peer groups. The Microfinance program at AKRSP started its operations with a manual system, then semi-automated and finally a full-fledged MIS for loans. The transformation from NGO to a microfinance bank posed a big challenge to its MIS solution as the existing MIS did not have any functionality related to deposits, remittances and insurance that the bank envisaged to offer. The challenge was addressed through the following strategy:

- Establishment of a strong IT department

- Short-term solution that involved integration of an off-the-shelf application with its existing portfolio management system.
- Long-term plan to build an enterprise MIS with the functionality to deliver all banking and microfinance services, and flexible enough to meet the current and future technology requirements of the bank.

The management of FMFB had demonstrated their understanding and commitment in making IT one of its strategic objectives and to opt for best practices in MIS. FMFB has been able to implement an advanced MIS that has already started to make positive differences to its business. As a result of its strong and flexible MIS, FMFB has been able to introduce a wide range of products and services, including loans, deposits, remittances and insurance. The system is used to obtain maximum information to support timely decisions.

Difficulties in Adopting MIS

A number of MIS solutions are emerging. Currently, there are 56 MIS applications listed on the CGAP website, although more are being used by various organizations that are not publicized. Despite the advances in MIS, practical experience shows that the acquisition of a suitable MIS is not simple. Many MFIs are struggling with their MIS. Some of the reasons for these difficulties are:

- Microfinance operations are unique and complex, compared to commercial, retail banking .
- The Microfinance sector is still evolving and lacks standardization in its procedures, methodologies, customer characteristics, type of transactions and reporting.
- There is no of-the-shelf software available that can address the requirements of every MFI.
- Those MIS that are available are complex and costly for adoption by MFIs.
- MFIs lack human and organizational capacity to develop or select an appropriate MIS.
- MFIs operate in remote and difficult areas where communication and power infrastructure do not exist,

and are therefore constrained from using IT equipment required to run MIS applications.

Outlook of MFIs

It is evident that the MFIs around the world are diverse in their structure and practices. Following are some of the factors that differentiate MFIs from each other:

1. Type of organization:
   - NGO
   - MFI (non-regulate)
   - Regulated MF Institution
   - Microfinance banks

2. Type of Products and Services:
   - Minimalists (those who offer only credit services)
   - Loans as well as savings services
   - Full range of products (including loans, deposits, remittance, insurance, leasing and social services)

3. Organizational Structure:
   - Branch setup (small, medium and large)
   - Staff structure
   - Departments (cost centre and profit centre)

4. Size:
   - Branch network
   - Portfolio size
   - No. of employees
   - Sections and departments
   - Growth

5. Geography:
   - Area specific (operations are limited to a small area)
   - Country specific (operations are spread over an entire country)
   - Global operations (operating in multiple countries)

6. Operational Environment:
   - Rural areas
   - Urban areas
   - Other

7. Processes and procedures:
   - Models (associations, cooperatives, credit unions, Grameen, etc.)
   - Methodologies (individual, group, village banking, community banking etc)

8. Regulatory environment

9. Reporting:
   - Management reporting
   - Stakeholder reporting
   - Microfinance networks and peer group reporting

Information Systems used by MFIs

The microfinance sector is also quite diverse in its use of information systems. Generally there are the following three types:

1. **Manual System**
   Some MFIs still rely on manual systems, which involves maintenance of records in forms and ledgers. Organizations having manual systems are either small micro-credit programs or NGOs.

2. **Semi-automated System**
   More than 50% of MFIs are operating in a semi-automated mode. Within this category, the spreadsheet is the common tool being used either in conjunction with a manual system or with an MIS application that does not fulfil the information requirements of the MFI. The majority of non-regulated MFIs have semi-automated systems.

3. **Fully Automated System**
   Few MFIs are fortunate enough to have a fully automated and integrated MIS, fulfilling the whole information requirements of the organization. Such systems are existent with banks or regulated MFIs.

Disadvantage of manual systems:

Some of the disadvantages of manual Information Systems are:

- Too laborious and time consuming.
- Prone to Errors.
- Data manipulation and analysis is very difficult.
- Maintenance of large amount of data is almost impossible.
- Data and information is not secured.
- Loosely controlled.

- Highly inflexible (addition of new products and change in business processes can not be made).
- Business continuity is at risk in case of damage to information due to fire, water or any other disaster.
- Reporting is very cumbersome, time consuming and difficult.

Benefits of computerised MIS to Microfinance

There is no doubt that "*the right information*" at "*the right time*" at "*the right place*", is crucial in decision making. Therefore, information and data is considered among the most valuable assets fundamental to the success of an organization. The primary roles of the MIS are to capture information, create new information, store information, and convey information to the user.

The two major objectives of MFIs are Outreach and Sustainability. MIS can add substantial value in achieving both the objectives:

- A major advantage of MIS is that it provides easy access to accurate and up-to-date information. For example, loan officers get information on loans that need follow-up, branch manager's can monitor daily progress of the branch, and senior management can get a full picture of the portfolio performance and quality. Customers also get quick information on their accounts, payments and balances.
- Detailed information is captured on customers and their activities that can then be used to assess client business to assess impact. It is also useful in tracking historical information of clients.
- Activities, such as disbursements, repayments, deposits, withdrawals and money transfers are completed faster, better controlled and with minimum opportunity for errors.
- Information is produced in user-required formats, which facilitates better understanding, setting priorities, objectives and strategy.
- Key performance indicators provide an overview of the organization's performance, efficiency and effectiveness of business procedures so that timely adjustments can be made.
- Use of ICT helps make MFI services more interactive, accessible and transparent.
- In terms of innovation, ICT provides full flexibility to structure products and services to the needs of its target group.

- Efficiency and productivity of staff is increased, as they are able to manage more products, customers, and transactions in less time.
- To meet target market needs, introduction of new products and setting procedures is easy and can be quickly applied throughout the branch network.
- It can also provide the flexibility to integrate with other applications and delivery mechanisms

MIS lowers transaction cost, increases productivity, reduces risk of failure, and pushes the boundaries beyond bricks and mortar infrastructure to carryout business.

Integration and Consolidation

With the growth and advancement of the microfinance industry, new innovations are being witnessed. Among these innovations, technology-based delivery channels and mechanisms are creating opportunities as well as intensifying the competitive environment for MFIs. These channels are not only targeted at lowering transaction costs and extending the reach of MFIs to large populations, but are also focused around customer convenience. These technology-based mechanisms enhance efficiency of the MFIs, while posing substantial challenges in managing such technologies. One of the main challenges is that of **integration** and **consolidation**. It is essential that the back-office MIS has the flexibility to integrate with such systems.

The back-office MIS has received little attention within the sector. The general perception is that new technology-based delivery systems would easily integrate with the core MIS, whereas in reality it is not that simple. Examples show that MFIs that have adopted such systems without assessment of their core MIS are struggling to integrate these. Because of non-integration, MFIs fall back on electronic spreadsheets or manual procedures to prepare consolidated information. Integration and consolidation are very important for MFIs and inability to integrate new technological innovations holds them back, making them less rather than more efficient.

Back-office MIS "*Starting Point for MFIs*"

The backbone of any Information System (IS) is the core MIS as it holds the critical data, and manages the information. All other systems are add-ons. A simple core MIS comprises of two parts:

i. *Database* - data structure; an organized set of tables designed to the needs of the business. All data of the organization resides in these tables.
ii. *Application Software* – comprises of the user interface, business processes, procedures, reports and queries.
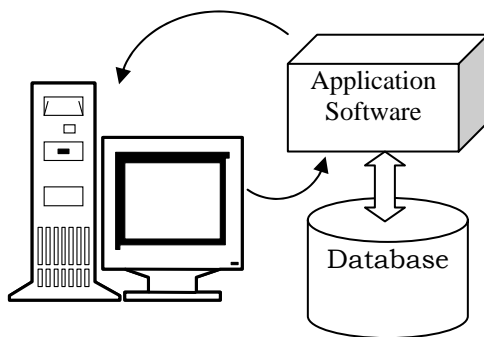

Fig 1: Core MIS

Adopting an MIS is strategically important for MFIs. They need to undertake a careful and detailed assessment of current and future needs before committing to a particular solution. Much of the system's flexibility, expandability, and robustness depend on the strength of the backend components. Strong core MIS can deliver cost-effective integration of data, channels and processes, facilitating a single consolidated view of the whole portfolio. Core MIS can provide easy data entry for the backend database, making consolidation easy to achieve.

Various studies reveal that a large number of MFIs operate manual systems despite having some kind of MIS in place. One of the reasons the MIS does not cope with the changing needs of the organization is that the backend does not have the right structure. It is important for both the MFIs and microfinance software vendors to concentrate and strengthen the Core MIS.

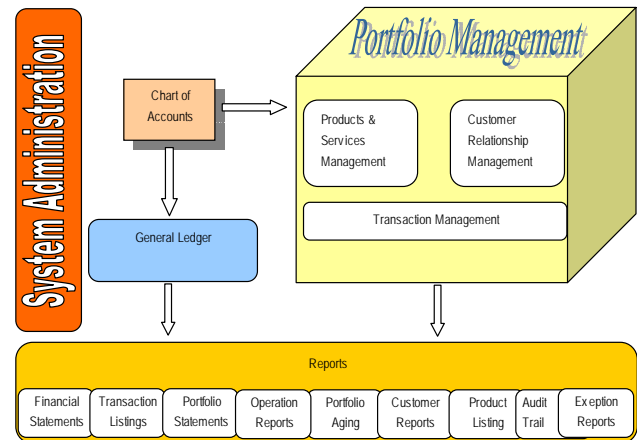Figure 2 shows a basic structure for the Core MIS for microfinance:

Fig2: Core MIS for Microfinance

Other Key Deciding Factors for IT Systems

While the MIS needs to fulfil the business requirements of the organization, but other factors including appropriate infrastructure and hardware are also important in the success and optimal utilization of information systems. We can categorize the components of an information system solution into five areas:

1. ***Physical Architecture (Electricity/Power & communication infrastructure)***

    Physical architecture consists of basic wires or cables to gateways and powerhouses. Together with buildings, offices, and computers, the architecture provides services of voice, data, image and video transmission while the consistent power supply keeps everything live and running.

    Every system needs electric power, and if systems are required to communicate, then there must be an appropriate communication infrastructure. Usually MFIs operate in remote and underdeveloped areas where this is lacking.

2. *Network*

Three types of environment setups could be made.

i. Standalone Environment; MIS is run on individual PCs and data is stored locally.

ii. Local Area Network (LAN); PCs are connected together to create a LAN. The network can be either peer-to-peer or client/server. Desirable is the Client/server network where data is stored and shared through a server in a secure way.

iii. Wide Area Network (WAN); Branch offices and operation units can be connected through a WAN. It requires proper communication infrastructure and involves high cost to establishing a WAN. For online systems WAN is critical.

3. *Hardware*

Type of hardware depends on the network environment. A client-server environment requires server and switch for connecting the workstations / PCs.

4. *Database*

Generally databases can be categorised as local and client-server. Each category has its own strengths and weaknesses. These details can help MFIs in selecting the appropriate database:

i. Local databases

There are a number of local databases but the most widely used databases are Microsoft Access, FoxPro, Paradox, and file maker.

Strengths
- Easy to setup and configure
- Low hardware requirement
- Low cost
- Good performance with less data load

Weaknesses
- No database management
- Unable to handle large data
- Risk of data corruption
- Data is not well protected
- Low performance when used by concurrent users and data load
- Not scalable with hardware
- Low transaction control, there is no rollback for incomplete and inaccurate entries

ii. Client/Server databases
Most popular client/server databases also called enterprise databases include; Oracle, DB2, SQL Server, MySQL, Sybase, and Informix are some of the commonly used client/server databases:

Strengths
- Database Management System
- Excellent performance under load
- Design to handle large data
- Manages large number of concurrent users
- Scalable with hardware
- Detects and corrects data corruption dynamically
- Rollback for incomplete and inaccurate entries
- Highly secured
- Perfect in network environment and for web applications

Weaknesses
- Complex to configure
- High cost
- License fee per user
- High-end Hardware requirement
- Requires technical skills

5. *Application*

A combination of business processes and procedures, user interface, reports and controls operate on top of the backend system. A large variety of software development and report generation tools are available and used to write software applications.

Getting the Right Fit

MFIs face great challenges in choosing the right system solution that can best fit their business needs. An MIS for microfinance must have the following characteristics:

1. *Cost effectiveness*: Total ownership and lifetime system operations costs, including hardware, software, network, infrastructure and human resource.

2. *Functionality & flexibility:* Fulfil maximum of the current business requirement and flexible enough to incorporate future changes. Capture and generate

relevant information on an individual, group, and at a consolidated level.

3. **Reliability**: Incomplete and unreliable systems are dangerously risky and can hamper the business. Such systems do not produce the right results and are unable to complete processes to the desired level. Users could be misguided by such systems.

4. *Simple to use*: Should be user friendly and easy to setup and operate. Activities can be performed in a systematic way and flow.

5. *Scalability:* System should accommodate changes to products, services and delivery channels. It should grow as the business grows. For example, if the system design is scalable, it can be run on an individual PC, Local Area Network (LAN) or Wide Area Network (WAN).

6. **Integration:** Combining data from multiple sources is of great importance to microfinance. Integration of branches to get single consolidated picture should be a priority.

Challenges faced by MFIs

1. Microfinance is a rapidly changing industry. Due to the ongoing evolution of the industry, MFIs face difficulty in defining business objectives, needs, priorities and limitations for acquisition of an MIS solution. There is lack of standardization within the microfinance sector, and business practices of MFIs differ from each other. Consequently, software developers face problems in coming-up with an MIS that can be used by most of the MFIs. Common failures are due to ill defined business process and procedures.

2. There is a shortage of skilled professionals who can understand technology as well as the microfinance industry, and be able to suggest the right solution.

Such professionals can act as a bridge in filling the gap between use of ICT and microfinance operations

3. Majority of the MFIs do not have the technical capacity and required resources to understand, adopt and implement MIS solutions.

4. Most MIS solutions are not affordable to the majority of MFIs.

5. In some cases there is a lack of vision and commitment from the management towards use of technology

6. Integration is becoming one of the big challenges, as most of the MIS solutions for microfinance are built on weak platforms, thus not being flexible and scalable enough to integrate with emerging technologies and delivery channels.

7. There is poor information sharing on successful MIS deployments within the microfinance as well as the financial sector.

8. ICT vendors still do not see the tremendous business opportunity and growth in the microfinance industry, thus are reluctant to invest and establish strategic partnerships with MFIs.

9. Power and communication infrastructure, which is the foundation for hosting ICT services, is inadequate in those areas where MFIs operate.

10. Non-availability of efficient technical support by vendors

Recommendations:

1. FMFB's experience of adopting technology suggests that MFIs should invest in relevant technologies after thorough and careful assessment of their requirements. The requirement should be addressed in perspective of current needs and future plans.

2. So far the core MIS of MFIs has been neglected. MFIs should get their core MIS right before opting for any kind of delivery system.

3. The software industry needs to do more in developing quality software for microfinance sector.

4. Capacity within institutions to manage technology is key to successful implementation and operation of its MIS. MFIs should employ skilled IT professionals on their staff.

5. MFIs must adopt MIS solutions that not only meet their needs but are also manageable by the MFI from all aspects. In some cases small and medium size MFIs go beyond their needs in adopting an MIS that ultimately becomes a drain on their resources. Such systems reduce the organizations overall efficiency and ultimately their sustainability.

6. MFIs can get maximum benefit by investing in technology, and putting in a better MIS solution that works for them. MIS is a strategic investment for MFIs.

7. Progressive policies that make ICT accessible and affordable to the majority of the population is important for encouraging the use of ICT within microfinance and for the development of the microfinance sector.

Conclusion

The use of ICT can rightfully be to the strategic advantage of MFIs. Innovations in ICT have transformed traditional approaches to microfinance, facilitating growth and reducing cost. Some of the players have already started getting the benefit by using MIS and similar IT solutions, while the majority of the MFIs have yet to realize the importance of its use to achieve outreach and sustainability. The implementation of the right MIS still remains a big challenge faced by MFIs. Efforts are also made from various corners of the world

in overcoming these challenges. CGAP's Information System Support is a prudent initiative to assist MFIs in getting access to ICT, aligning their MIS and using the appropriate IT solution. One of the realizations is "first things first" i.e. having an appropriate core MIS first before other systems: keeping in mind the strategic importance of ICT to the microfinance industry, renewed efforts are required from all the stakeholders to overcome the challenges faced by the microfinance industry in taking on IT.

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