



# Case Study:

Adoption of Mifos® as a platform for mobile money at  
Kenya Entrepreneurship Empowerment Foundation (KEEF)

### **About Grameen Foundation**

Grameen Foundation empowers the world's poorest people, especially women, to escape poverty through access to financial services, information, and viable business opportunities. Founded in 1997 by a group of friends who were inspired by the work of Muhammad Yunus and the Grameen Bank in Bangladesh, our innovations, programs, and resources have helped millions of people in Africa, Asia, the Americas, and Middle East North Africa begin their journey out of poverty.

With microfinance and technology as our foundation, we connect people and local institutions across the globe that share our vision of shattering the barriers for the one billion people trying to live on less than a dollar a day.

### **About The MasterCard Foundation**

The MasterCard Foundation advances microfinance and youth learning to promote financial inclusion and prosperity. Through collaboration with committed partners in 42 countries, The MasterCard Foundation is helping people living in poverty to access opportunities to learn and prosper.

An independent, private foundation based in Toronto, Canada, The MasterCard Foundation was established through the generosity of MasterCard Worldwide at the time of the company's initial public offering in 2006. For more information, please visit [www.mastercardfdn.org](http://www.mastercardfdn.org).

### **Acknowledgements**

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## EXECUTIVE SUMMARY

In 2007, the Kenya Entrepreneurship Empowerment Foundation (KEEF) implemented Mifos® with a local technical service provider as a community deployment, without the Grameen Foundation's direct involvement. Although KEEF used Mifos for the next three years, the implementation was not very successful and the institution was unable to properly manage its operations with the platform. In 2010, KEEF became a Mifos consortium member. As a benefit in that consortium, the Grameen Foundation's Mifos team provided KEEF with a standard package of technical and business consulting services to help the institution optimize its current business processes and develop an IT strategy for the longer term. At the same time, KEEF had engaged the Grameen Foundation's Mobile Financial Services team to help integrate Safaricom's M-PESA mobile payments service into KEEF's operations. The two efforts were merged into a single project to develop and pilot a "mobile money" system as part of a larger IT strategy and process improvement.

The consortium and mobile money project resulted in many lessons learned for both KEEF and the Grameen Foundation. Of these lessons, the three most important were the following:

### **THE GRAMEEN FOUNDATION'S EVOLVING OPEN-SOURCE HYPOTHESIS HAS BEEN REINFORCED.**

- Mifos, as an open source system, can be downloaded and implemented by a microfinance institution (MFI) with minimal cost.
- A cloud-based MIS greatly reduces the IT burden on an MFI, giving the institution access to a level of technical service and support that it would otherwise be unable to afford.

### **PROPER IMPLEMENTATION OF MIFOS CAN RESULT IN CONSIDERABLE BENEFITS.**

- Once KEEF was properly trained to use the functions of Mifos, the time needed for processing and report generation was reduced, which helped increase the efficiency of loan officers.

- In order to succeed, system deployments must be coupled with optimization of business processes and the staffing needed to support and use the system effectively.

### **MOBILE MONEY, IF IMPLEMENTED PROPERLY, IS A VIABLE TECHNOLOGY FOR SERVING MICROFINANCE CLIENTS IN KENYA.**

- M-PESA, a widely used mobile money service in Kenya, is an acceptable form of delivery for microfinance clients as long as the client benefits outweigh the costs of using the service.
- Mobile money brings added efficiencies to MFIs by eliminating tasks related to cash handling, such as cash counting and recording, for clients at group meetings and at the head office. The efficiencies are



KEEF loan officers work closely with their clients to support their business efforts.

maximized when the mobile money transactions are automatically uploaded into the MFI's management information system (MIS).

- Mobile money can also help reduce fraud and minimize the security risks associated with handling cash from both the client's and the institution's perspective.

This case study clearly illustrates two basic truths about implementing technology projects. First, success requires careful consideration of the people and processes as well

as the technology. Technology can only yield strategic, financial, and social benefits when considered in the full context of an organization and how it works. Second, the fundamentals of business operations must be in place before automation and innovation can succeed. An MFI must already have efficient and effective processes before it can implement automated systems, and likewise it must have strong competence and processes for its basic systems — such as MIS — before introducing innovations, such as Mobile Money.

## INTRODUCTION

KEEF was established in 2004 with the aim of empowering local communities by supporting initiatives that "promote women and youth empowerment through micro credit by establishing sustainable micro enterprises in Kenya." This was part of a larger ambition to be

*a dynamic sustainable and viable institution of the future where local communities have access to financial services that empower them economically and socially.*<sup>1</sup>

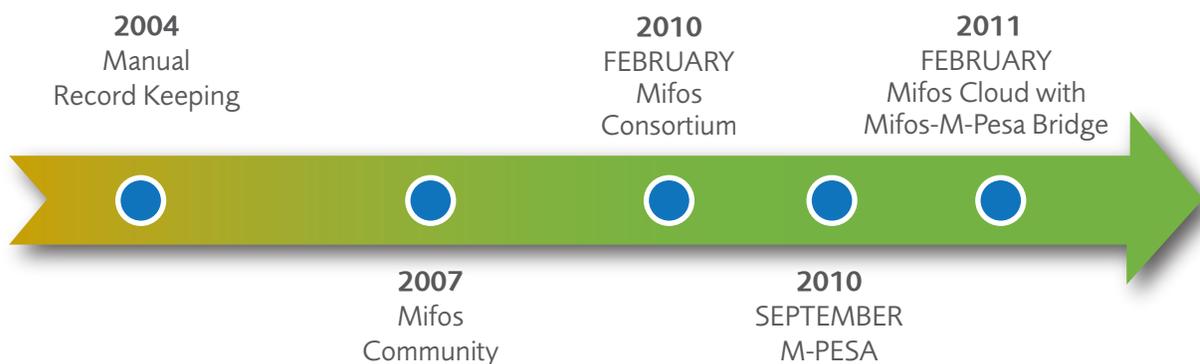
KEEF was founded by Daniel Kimani, who continues to lead the institution today. From early on, the institution has experienced steady and at times rapid growth. Being a small institution with limited resources, and knowing it would need better information systems to manage its growth, KEEF chose to adopt Mifos.

Mifos was developed as an open-source software project for MFIs worldwide. It was designed so that MFIs would be able to easily download the software and, with technical assistance from local partners, install, configure, and run the software. KEEF was among the first institutions to adopt it. With grant assistance from Hivos<sup>2</sup>, in 2007 KEEF hired a local technology service provider to assist. Through the open-source community, the Mifos team became acquainted with KEEF and learned about its history of using Mifos. When the team embarked on its consortium program, this MFI was a natural candidate for

inclusion and joined it in 2010. As part of the consortium program, the Mifos team provided KEEF with a standard package of technical and business consulting services, designed to help MFIs improve their business processes and develop IT strategies for the longer term. At the same time, KEEF was working with the Grameen Foundation's Mobile Financial Services team to support its adoption of Safaricom's M-PESA mobile payments service and integrate that into its operations. The two efforts were merged into a single project, to develop and pilot a mobile money implementation as part of a larger IT strategy and process improvement program.

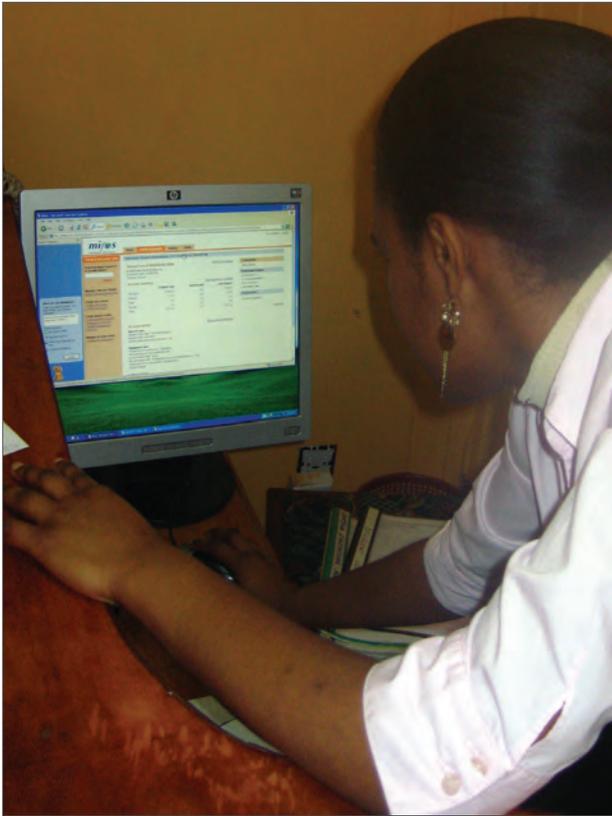
The history of information technology at KEEF can be divided into four phases, illustrated below.

- *First phase:* KEEF uses no technology at all. All records are kept on paper.
- *Second phase:* Mifos is deployed with the assistance of a local partner but without direct involvement of the Mifos team or any process improvement or overall IT strategy.
- *Third phase:* The Grameen Foundation team is directly engaged; IT strategy and process improvements are developed and implemented at KEEF.
- *Fourth phase:* Mobile payments are enabled and the Mifos team takes over hosting of the MIS for KEEF.



<sup>1</sup> KEEF (program brochure), retrieved from <http://www.keefkenya.org/images/stories/KEEF%20BROCHURE.pdf> on 12/15/2010.

<sup>2</sup> <http://www.hivos.nl/>



KEEF was among the first microfinance institutions to independently download and adopt Mifos.

As will be clear throughout this case study, evaluating the impact of Mifos at KEEF presents both opportunities and challenges. Because KEEF was one of the first MFIs to complete a full deployment of Mifos without the direct involvement of the Mifos team, it represents a key test of the original hypothesis. That hypothesis was that local institutions could download and deploy the application and move forward on their own, avoiding the usual expenses of commercial software. At the same time, because KEEF worked with a local partner, it represents a test of the further hypothesis that local technical support would be required and would also be available. The fact that Mifos was initially deployed there without the benefit of improvements in business process and staffing, which were later introduced, allows us to evaluate the contribution that a focus on people, process, *and* technology makes to the software installation. And finally, KEEF's adoption and integration of mobile money provides an initial opportunity to examine the added value that this capability brings.

These opportunities must be viewed with caution, however. For example, while it was possible to document the situation at KEEF, including how Mifos was performing there, when the Mifos team first began assisting KEEF, little is known about the situation at KEEF when it first adopted Mifos several years earlier. Lacking baseline data, it was not possible to measure the improvements in KEEF's operations that were directly caused by the initial Mifos implementation. Nevertheless, the case presented in this report does lay out the projected results based on the available data. Likewise, because mobile money integration, business process optimization, and the Mifos upgrade all developed at the same time, it will be difficult to separate out what contributions each of these changes made to KEEF's success.

As is true for many organizations, before an automated system was introduced the reliability and quality of KEEF's data was poor. Complicating this challenge, KEEF's current business model includes a mix of interest income, service fees, and a complex dividend-distribution scheme. This mixed approach is much more complex than the traditional finance methodology, which relies heavily on direct interest from loans. This complexity of lending methodology and the absence of reliable historical financial and operational data made it nearly impossible to establish a baseline of operations from which to measure the benefits of each technology as it was introduced.

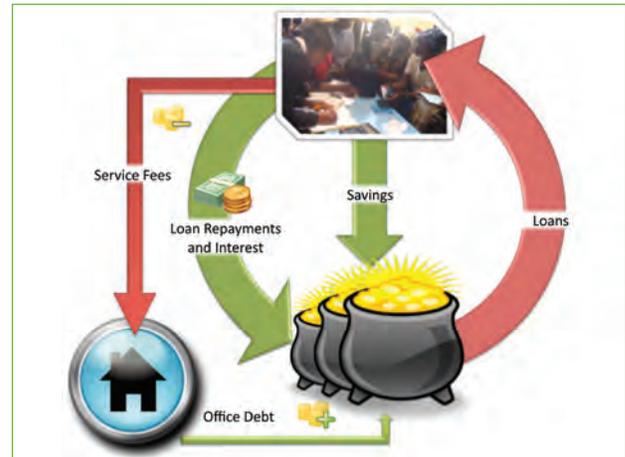
At the time of this writing, KEEF was also busy remaking its business projections and forecasts to reflect recently planned enhancements and changes to its methodology, interest rates, and product mix. As a result of all these challenges and uncertainties, we are not able to present a financial return-on-investment (ROI) analysis. Nonetheless, reviewing the experience at KEEF provides us with a rich reservoir from which to draw important lessons. We will therefore present the challenges and benefits we have seen through the business process optimization, Mifos upgrade, and the pilot of the M-PESA integration.

## INSTITUTION PROFILE

Headquartered in the town of Kiambu, approximately 20 kilometers north of Nairobi, KEEF serves clients in three major areas surrounding the towns of Kiambu, Limuru, and Thika. It has two programs: the Women Entrepreneurship Empowerment Program and the Youth Village Development Initiative. Together these programs work to empower women and youth in rural areas with limited access to financial services. More than 80 percent of KEEF's clients live in rural areas. The institution lends to individuals in solidarity groups, and as of June 2010 it had a total loan portfolio of 33,321,467 KES (416,518<sup>3</sup> USD), 6,014 clients, and 4,841 active borrowers. It has been growing at a rapid rate: during the past three years KEEF has tripled its number of clients each year.

Much of KEEF's success stems from its lending model and product offerings. Its clients belong to solidarity groups that are modeled on traditional savings clubs, known as "merry go rounds" in Kenya. In those clubs, all the members contribute money each month, and in rotation each month one member takes all the money in the "pot." KEEF has modified that savings club approach with the addition of credit. Instead of distributing all the money collected each month to one person, the monthly pot serves as a revolving loan fund. At monthly group meetings, all members are required to contribute a savings payment to the common pool, as well as any repayments of outstanding loans. When new groups are formed, or a new member joins a group, they must make regular contributions to accumulate savings before they are entitled to take a loan. The money thus collected is then immediately redistributed to the members as new loans.

The capital to fund the loans thus comes, in the first instance, from the borrowers themselves, and it increases steadily over time as savings contributions accumulate. Whenever the amount of money available at a group meeting is insufficient to meet the demand for loans, KEEF lends additional funds to the group for on-lending. This additional fund is called "Office Debt." Through loan interest, savings contributions, and Office Debt, the revolving fund grows throughout the year. At the end of the year, group members receive a dividend, essentially a return of some of their savings, based



on a formula that takes into account the amount of interest they have paid over the course of the year.

In exchange for managing the accounts of the solidarity group and providing supplemental funding, KEEF receives a monthly service fee, which depends on the size of the revolving fund, as well as a year-end dividend that is tied to the amount of money KEEF has provided to the group revolving fund.

One difficulty KEEF faced was low efficiency among loan officers. Group meetings tend to take a long time because of the amount of time required by each individual transaction. Although KEEF continues to serve all geographic areas from a single office and groups are widely dispersed, loan officers are required to spend significant time traveling by public transport among groups, which further limits their efficiency.

A second challenge facing KEEF was a security concern that the merry-go-round methodology created for both clients and loan officers. Since all loan transactions are in cash, the "pot" on the table at a group meeting can contain a very large amount of money, posing a significant security risk.

Both of these challenges have increased as KEEF has grown. KEEF first turned to Mifos largely to address these types of challenges — maintaining and using reliable operational and financial data, increasing loan officer efficiency, providing the technical foundation to grow the organization, and increasing safety and security for clients and loan officers.

<sup>3</sup> The exchange rate used in this report is 1 USD = 80 KES.

## MIFOS AT KEEF

### INITIAL DEPLOYMENT

Early in its history, KEEF adopted Mifos and partnered with a Kenyan technical service provider. The Mifos team in Seattle had little involvement in the deployment, although it was aware that the deployment was taking place and occasionally answered questions from the Kenyan technical service provider as part of its community support program. This early period of KEEF's experience with Mifos came long before any direct engagement by the Mifos team, and KEEF had not kept reliable data about any benefits it might have gained from Mifos during that time. But, as will be apparent further on, whatever value KEEF got from their initial deployment of Mifos was far short of what was needed or possible.

### CONSORTIUM AND MOBILE INTEGRATION

The second phase of KEEF's experience with Mifos begins in February 2010, when KEEF joined the consortium program. This phase involved four related but distinct activities:

- A review of business processes and development of a comprehensive IT strategy, followed by implementation of recommended changes (February–June 2010)
- Investigation and repair of Mifos installation and configuration problems (March–April 2010)
- Change management, business process re-engineering, and development and pilot of M-PESA (March 2010–March 2011), and
- Integration of M-PESA mobile payments with Mifos (July 2010–March 2011).

### IT STRATEGY

In late February 2010, Mifos team members met with KEEF staff over several weeks to identify the institution's primary business goals and document and evaluate its critical business processes. The team interviewed all key staff, visited several group meetings, examined and

evaluated the current installation of Mifos, and reviewed the literature on best practices for IT management as they apply to microfinance institutions. The team then did a gap analysis to identify where KEEF's current infrastructure, organization, or business process failed to meet the identified needs of the organization, given its general goals. The KEEF staff then identified six detailed business goals for the near and medium term that would allow the institution to keep growing and meet its institutional mission, as follows:

1. Refine products and pricing structure to build on competitive advantages and meet client needs.
2. Improve standardization, compliance, documentation, and use of technology to ensure efficient operations.
3. Expand the network to seven branches and significantly improve staff productivity.
4. Develop an organizational structure, staff roles, and culture to ensure a motivated, high performing, competent, well trained staff with necessary skills and capabilities.
5. Raise the funds necessary to sustain growth, and build a total loan portfolio of 330 million KES (4.125 million USD) by the end of 2012.
6. Position the organization to be well respected within the industry and by clients.

To address these goals, the Mifos team proposed a series of IT initiatives to be completed over three years. In fact, nearly all of the proposed IT initiatives were implemented between February 2010 and March 2011. The initiatives accomplished the following:

- The MIS infrastructure was set up and upgraded. A LAN was established and a data entry function was introduced. The position of MIS officer was introduced, and later it was replaced by a full-time IT manager; both were fully trained. KEEF's email was set up to be hosted in Google Apps.

- The Mifos configuration was corrected and upgraded, and later it was moved to Mifos Cloud. (KEEF is currently running the latest version, Mifos 2.1.)
- The accounting system, Sage Pastel, which had been purchased previously, was configured and is now being used on a daily basis.
- M-PESA was integrated with Mifos to automate the transfer of transactions between the two systems.
- Business process management (BPM) was conducted for a full year, starting with the core business operations and then integrating M-PESA and Mifos with KEEF's operations.

The MIS infrastructure and set-up alone has brought benefits to KEEF. Establishing a secure and reliable LAN and implementing anti-virus software put into place basic necessities that will safeguard KEEF's electronic data. In the past, KEEF had lost historical records due to a virus attack. The use of GoogleApps to host KEEF's email improved KEEF's international communication and gives KEEF a professional and reliable email domain necessary for their image as a well-respected organization.

Before a data encoder was assigned, KEEF loan officers often stayed at the office until 8 pm to enter their data into Mifos. Because loan officers spend the majority of their day traveling to and conducting group meetings, they were only free to return to the office and key data later in the afternoon, when as many as nine loan officers might be waiting for their turns at a single computer. Since assigning and training a dedicated data encoder, the loan officers have been able to go home from work at 6 pm.

The assignment of an MIS officer, which eventually led to the hiring of the IT manager, will ensure that the basic MIS infrastructure — LAN, hardware, and systems such as Mifos and Pastel— meets the standard for reliable use.

More importantly, the above changes allowed for the continuous use and enhancement of Mifos and set Mifos up as the platform for further growth and innovation at KEEF, such as the implementation of Mobile Money.

Details regarding how Mifos was upgraded and moved to Mifos Cloud, how M-PESA was integrated and implemented, and how business process management was improved are included below.

### BUSINESS PROCESS MANAGEMENT

The business process management (BPM) initiative at KEEF started with a two-day workshop to train KEEF employees in the use of the Grameen Foundation's simple business process management tools. After the workshop, KEEF formed a BPM team to execute the process management.

As is often recommended, the business processes that are worth improving first are those that can offer "quick wins" to gain momentum and those that can close the biggest gaps between the current state and the business's top goals. For example, suppose a business goal is to reach 36,000 clients by 2012, and currently the organization has 10,000 clients. If historically the number of clients recruited per month is too low to reach that goal, the business should examine client recruitment and the related processes that might be impeding this goal. For example, it should review how loan officers recruit clients and any processes that

## How Does M-PESA Work?

M-PESA (M for "mobile" and Pesa for "money" in Swahili) is a service offered by Safaricom, Kenya's primary telecommunications provider. It allows mobile phone users to transfer money via SMS, even if they do not have a bank account.

Located in cities, markets and villages all across Kenya, M-PESA "agents" provide a place where M-PESA customers can "deposit" cash into their M-PESA account. Once the account is loaded, the user can then send money via SMS to any other M-PESA customer in the system.

The recipient receives an SMS notifying them that they have received a transfer. To retrieve the cash, they simply visit any other M-PESA agent and can "cash out."

consume substantial amounts of loan officer time, such as group meetings, data recording, and report writing.

The first round of the BPM initiative led to four major changes at KEEF, described next.

*First*, the initiative led to the development of an operations manual, an accounting manual, and a human resources manual to standardize the processes.

*Second*, to improve efficiency, group meetings were rescheduled so they would occur in clusters. During the BPM exercise, we found that most of the loan officers' time is spent traveling because group meetings are scheduled in different towns. Moreover, since 80 percent of KEEF's clients are in rural areas, loan officers typically rode at least two *matatus*<sup>4</sup> to go from one town to another, so that the trips took up to two hours each. To address this inefficient scheduling, the BPM team regrouped the meetings so that most loan officers only went to one town on a given day. Before this exercise, loan officers could only attend one or two group meetings per day. After the loan clustering, the loan officers were able to attend three meetings per day, increasing their efficiency. Furthermore, transportation costs per group meeting became lower since loan officers were now traveling shorter distances between group meetings.

*Third*, the remittance of cash from group meetings was changed by making use of M-PESA. As mentioned earlier, group members bring cash to the group meetings and then re-use the payments to disburse the loans to the members. However, there are times when there is more cash in the "pot" than is loaned to the members, and when that happens the excess money is remitted to KEEF. The loan officers would travel from one group to the other and finally return home to the KEEF office carrying this cash for depositing. During these travels, and even during the group meeting, there was a risk of losing cash through negligence, fraud, or theft. Furthermore, the KEEF account clerk and accountant would have to wait for all loan officers to remit their reports and cash before they could start closing the books for the day, which meant leaving the office open after normal office hours. It was therefore recommended that loan officers remit cash to KEEF by using M-PESA after each group meeting. This reduces the risk of lost cash and at the same time allows the account clerk and the accountant to record all collections for the day without waiting for all the loan officers to arrive at the office.

Now, with all loan officers required to remit cash via M-PESA, KEEF only keeps petty cash at its offices. This also saves KEEF from the need to hire a security guard, which can cost an office 120,000 KES (1,500 USD) annually. More importantly, the KEEF staff no longer feel that their lives are at risk at the office.

The second set of BPM initiatives was to integrate M-PESA and Mifos into KEEF's operations. The BPM tools were used to redesign core business processes, such as the group meeting, loan application and approval, loan disbursement, and daily transaction reconciliation. Each of these processes was redesigned, piloted, and enhanced throughout the initiative. Major process changes were made relating to M-PESA and Mifos as well (which are discussed in detail under the M-PESA Integration section).

## UPGRADE OF EXISTING MIFOS INSTALLATION AND MIFOS CLOUD

**Problems With Existing Installation.** Although Mifos was already in use when KEEF joined the Mifos consortium in February 2010, the Mifos team felt this was an ideal opportunity to test the value of added assistance with IT strategy and business process optimization. However, by the time initial research at KEEF concluded in late February 2010, the findings were something of a surprise. We uncovered the following problems:

- KEEF was using an outdated version of Mifos; it had attempted to upgrade, but the upgrade failed, and when it rolled back it harmed the integrity of data.
- Mifos was not stable. It was running on a single desktop computer that was infected with viruses and was also running other software. There was no procedure for backing up the database and no test server was available.
- Staff had not received adequate training and were unfamiliar with Mifos, which prevented them from taking advantage of Mifos' time-saving features such as data-entry by exception (bulk entry). Furthermore, staff were changing server dates and were running required batch jobs manually and intermittently, which caused problems with data integrity.

<sup>4</sup> Kenya's public buses, which are the size of minivans.

- No dedicated IT support role or technical assistance had been arranged with any local provider.
- The software was improperly configured, preventing KEEF from taking full advantage of its features. Mifos was not configured to use Centers, preventing KEEF from taking advantage of the Mifos' Collection Sheet, a group account statement listing members' savings and loans balances and loan, savings, and fees due, and the Chart of Accounts was not properly set up.
- Reports were largely absent or unusable due to incomplete or untrustworthy data.

Some of these issues suggest that the local systems integrator was not sufficiently familiar with Mifos. Moreover, the technical support was funded with a grant from the Humanist Institute for Cooperation (Hivos), technical support ended when the grant term ended, and KEEF was either unable or unwilling to pay for continuing assistance. As a consequence, KEEF placed little reliance on Mifos and continued to struggle to keep accurate records of its loan portfolio. The situation at KEEF was a stark reminder that qualified technical support and thorough staff training are required for ultimate success, and that having both can be challenging for an institution with KEEF's limited size, staff, and resources.

To address these urgent issues, Mifos technical staff visited KEEF in March 2010. Over the subsequent weeks Mifos was upgraded to a newer version and installed on dedicated hardware. Configuration issues were resolved. A test server was installed. Training was provided to a KEEF employee who was formally dedicated to play an IT support role. Identified issues with the Mifos software were logged for immediate attention by the development team. A new local technical support provider was also identified.

As a result of this visit, KEEF was able to take advantage of Mifos' reports and its bulk entry feature, which reduced the time required for data entry by more than 80 percent simply because data only needs to be entered by exception. Entering payments for a group the old way, one by one, took about one hour, but with Mifos' bulk entry method this could be done in two to ten minutes.

With technical support from the Mifos team, KEEF started using Mifos properly in March 2010 and has since been

using it as its primary data repository. However, KEEF has continued to experience staff turnover and was especially challenged in finding and retaining strong technical staff talent. Even with a stable Mifos application, any MFI running Mifos (or any other MIS) on its premises must invest not only in the server infrastructure needed for a test-and-production environment but also in retaining staff who are technically competent to manage ongoing upgrades, bug fixes, application support, and future enhancements.

**Mifos Cloud.** Because finding and retaining such technical expertise is a challenge for many small and mid-sized MFIs, the Mifos team recently introduced Mifos Cloud to address some of these issues. Mifos Cloud runs centrally in a hosted, shared data center, so an MFI using it no longer has to invest in local servers and technical support. Instead, the organization has access to its "portion" of the Mifos Cloud over the Internet, from any computer, and the Mifos team manages security, upgrades, backups, and database optimization. As a result, many small MFIs are able to access a level of technical support (via the Mifos team) that they would otherwise be unable to afford if they had to purchase the services locally.

In February 2011, KEEF was migrated to Mifos Cloud. Moving to cloud computing lightened the IT burden for KEEF, since it was able to eliminate on-site servers and did not need to add a staff of technical experts to service the application. More importantly, KEEF can now add branches or service centers and have ready access to Mifos. Additionally, its management team can look at reports outside the office. KEEF can also take advantage of the many new features of Mifos 2.1, including 10 new standard reports, survey features, social performance management, and support for agricultural loans, to name a few.

As of this writing, KEEF loan officers still maintain their manual records, called "group files." The group file is a folder containing the profile of group members, records of loan application and disbursements, and each member's loans and savings transactions and balances. As we described in the history of KEEF's Mifos installation and upgrades, only since February 2011 has KEEF had the most-up-to-date version of Mifos, which includes the Group Collection Sheet containing the same information as KEEF's group file.



Switching to mobile money can make KEEF branch offices safer and more efficient.

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*“Mifos is our ‘barometer’ in regard to quality of the portfolio, and with the advent of ‘Mifos Cloud’ the opportunity for a small MFI like KEEF to grow and compete with well established MFI’s for more rural and unreached clients is real.” — Daniel Kimani*

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## INTEGRATING M-PESA

**Why Switch to Mobile Money?** By the time KEEF joined the Mifos consortium it had already accepted a few payments through the M-PESA mobile payments service operated by Safaricom. However, these transactions were handled manually and therefore offered little advantage to KEEF over conventional cash transactions. KEEF wanted to revamp and automate its use of mobile money as a way to avoid the relatively high operational costs associated with the usual microfinance outreach approach. Those high costs and inefficiencies had included the following:

- High transaction costs, including transportation and loan officer time spent traveling to and between group meetings
- Loan officer inefficiency, due to lengthy group meetings involving cash counting and manual recording of transactions
- Security risks for both poor clients and loan officers, due to the large sums of money carried to and from group meetings
- The inconvenience to clients who were required to spend several hours away from their families and the market to attend the lengthy group meetings
- Back-office inefficiencies in accepting, recording, and reconciling cash
- Back-office inefficiencies and errors due to manual recording of transactions, and
- Security risks at the branch and to branch staff due to keeping and moving cash between the branch and the head office.

## How Does M-PESA Work for MFI Clients?

In the classic microfinance methodology, the clients attend a group meeting, repay their loans in cash, and manually record the transaction. The loan officer then recycles the cash collection, adds some money from the branch if required, and disburses loans to the group members.

With M-PESA, clients can deposit their loan repayments into their own M-PESA accounts and pay the MFI by transferring money from their M-PESA account to the MFI's account. The client can do this any time before the loan is due. Likewise, the MFI can disburse loans to clients via M-PESA by transferring money from its M-PESA account to the client's account. The MFI can do this via phone for individual transactions or via M-PESA's web interface for batch transactions. Just like payments, disbursements can also be made any time, and clients are no longer forced to wait until the next group meeting.



The mobile payment platform allows KEEF clients to spend more time on their businesses.

Foreseeing that mobile payments could improve its loan officer efficiency, strengthen its ability to reach into more rural areas, increase security, and allow time savings that its clients could enjoy, KEEF partnered with the Grameen Foundation to fund a pilot to expand its mobile payments capacity. The project was funded through the Marketplace on Innovative Financial Solutions for Development contest sponsored by the Agence Française de Développement (AFD), the Gates Foundation, and the World Bank.

Under the proposed program, KEEF partnered with the Grameen Foundation for technical assistance in delivering the following. The program would assist KEEF in obtaining a Safaricom commercial account with a favorable negotiated tariff. A plug-in would be developed for Mifos to allow M-PESA transactions to be uploaded onto Mifos

from Safaricom. Internal business processes would then be modified to take advantage of mobile transactions, and KEEF staff would be trained in following them. Finally, a pilot would be conducted to test both disbursements and repayments via M-PESA using a sample of KEEF clients. Once that pilot and a final test were successfully completed, KEEF and the Grameen Foundation would plan a roll-out of the new solution across all loan groups.

The mobile payment platform was expected to provide value to both KEEF and, more importantly, its clients. Among the expected benefits, the new platform was expected to shorten group meeting time and decrease meeting frequency, allowing clients more time to run their own businesses and allowing loan officers to increase their daily efficiency. The time needed to verify payments was expected to be shortened to close to real time, that is, to become near-instant verification. With automated transaction processing, data errors at the head office were expected to be reduced and data quality increased. The overall transparency of financial transactions was expected to increase as well since the system would allow real-time insight into business operations. And finally, it was expected that security for both clients and loan officers would be greatly improved due to the virtualization of payments.

**What Clients Needed and Expected.** Early in the project, a series of focus group interviews were conducted to measure clients' attitudes toward mobile payments. Roughly 15 percent of KEEF's total clients were interviewed from April to July 2010, including a mixture of clients from rural and urban areas and representing both mature

<sup>5</sup> For example, MFI clients would be required to pay a 45 KES transaction fee to cash out of an advance loan of 3000 KES. 45 KES is equivalent to the wholesale purchase price of 1.5 kilograms of wheat.

groups (older than one year, paying the full-service fee) and younger groups (younger than one year). These interviews revealed that clients' main concern with mobile payments was the tariffs<sup>5</sup> involved.

Safaricom charges a tariff, or transaction fee, on all mobile money transfers. Clients have to pay a fee each time they cash out a loan disbursement received over the phone or make a payment via M-PESA. At the focus discussions, participants acknowledged that for loans that require them to travel to KEEF's offices to collect disbursements or make payments, using mobile payments would save the time and cost of travel. But for loans normally disbursed at monthly group meetings, the mobile fee appeared to them to be no more than a tax with no apparent monetary benefit. However, they felt that in either case the use of M-PESA would resolve security issues, which were a major concern of many focus group participants. In addition, it would also allow clients to use the money from loans only when needed. Many participants noted that upon receiving cash from a loan, funds were sometimes spent inadvertently. If funds were stored on the phone, they could be paid out as needed with the monies kept safe in the meantime.

Also, the normal practice was for groups to make cash contributions to the revolving loan fund and immediately take loans from the fund at the same meeting. KEEF did not actually assume custody of any of this money nor was it a direct participant in the transactions. It merely kept the accounts. But if loans were to be disbursed or repaid through M-PESA, KEEF would have to reconcile the separate records of those transactions completed at each meeting in cash as well as other transactions completed separately through M-PESA.

During the focus group discussions, clients stated that they would be interested in switching to mobile payments if they could see an immediate monetary benefit. It was decided that interest rates for the advance loan product would be decreased by 50 percent if the entire group participated. It was soon clear that the overall impact of integrating mobile payments was going to require careful review of product features and business processes.

**How the Systems Were Merged, Tested, and Enhanced.** The project took place in two phases. Work on M-PESA integration began in March 2010 in tandem with the consortium program. A commercial account was

established with Safaricom the same month, which allowed KEEF to access transaction data via a Safaricom portal and secured for KEEF clients a 33 percent discount on normal transaction fees. Initial work on the Mifos plug-in was delayed, however, until unresolved problems with the existing Mifos installation could be solved.

The Grameen Foundation project manager worked with KEEF staff through the spring and summer to develop and document new procedures for monitoring and tracking M-PESA transactions. Training materials for loan officers were created and training began to prepare them to introduce mobile payments to their groups. Market research and focus group discussions were conducted and processes were redesigned, tested, and enhanced throughout the pilot period. Among the redesigned processes, the major ones were these:

- Clients would have to use M-PESA instead of cash for paying loans, receiving loan disbursements and depositing savings transactions.
- Clients would have to pay loans one day before the group meeting so that KEEF would have the record of payment during the group meeting.
- Loan payments were to be downloaded from M-PESA and then uploaded to Mifos every day, instead of loan officers or data entry clerks manually recording transactions into Mifos.
- Loan disbursements would be made to clients via M-PESA. Loan fees would be automatically deducted from loan disbursements. (M-PESA Loan disbursements can be uploaded into Mifos but KEEF has yet to implement this process and technology.)
- A daily reconciliation process was designed to ensure that Mifos, M-PESA, and the accounting system data were all reconciled.

The aim was to have cashless transactions. Fee collections were therefore designed so that clients only signed a form identifying the money to be withdrawn from their savings and applied to the fees in Mifos. After several cycles of process redesign, KEEF and the Grameen Foundation were even able to design a process to accommodate the clients' expectation of immediate loan disbursement during any given group meeting. Since clients are required to repay their

loans one day before the group meeting, at 4 pm those payments are recorded and then used to evaluate what size loan a member is qualified to receive for the next month. The following day, during the group meeting, the loan officer reviews the repayments and then asks which of the members need a loan that day. The loan officer has to update the collection sheet with the requested loan amount, asks the member to sign the request, and then emails the form to the head office through a web-enabled phone. The loan officer then handles the usual business at the group center. Meanwhile, at the head office, KEEF staff receives the email, validates the loan amount and signatures, and then disburses the advance loan via M-PESA. This process has been tested and refined to ensure that the clients receive their advance loans during the group meeting just as they were used to. (See Appendix B for the processes before and after Mifos and M-PESA integration.)

It was only after solid processes were in place that an automated bridge between Mifos and M-PESA was designed and implemented. It was important to know the entire life-cycle of the loan, including the exception processes, to be able to define the enhancements needed for Mifos. A unique ID would be needed by each user to link Mifos and M-PESA, as well. There were pros and cons to each choice. With the government ID, a client could pay using any phone but would be required to key an additional account number each time he or she paid on a loan or made a deposit to savings. Using the phone number as the unique ID would eliminate data entry error (since Safaricom uses the phone number on the SIM card to identify the transaction) but would require clients to purchase a SIM card and operate their own phone. It was later decided to use the phone number, since the Grameen Foundation requires disbursing only to the phone number registered to the client for security reasons. (We do not want to disburse the client's loan to just any phone.)

What would happen if one did not find a match on the phone number, that is, how would one find out who had made a payment? How could a disbursement bridge be created, considering that KEEF requires that advance loans be disbursed during the group meetings? What kind of reports would we need to ensure so that transactions were properly recorded and reconcilable with M-PESA and the accounting system? These were among the process exception questions the Grameen Foundation team had to

map and design for.

During the client pilot, most of the back-office operations related to processing M-PESA transactions from the field were carried out manually. Upon completion of the pilot in February 2011, the team introduced the final automation, including a Mifos-M-PESA bridge that streamlines and automates KEEF's back-office processing of M-PESA transactions. Introducing the bridge and related technology enabled the following process enhancements:

- M-PESA payments are now auto-accepted, matched with a client in Mifos, and broken down and applied to the client's loans and savings, according to the payment priority order in Mifos, as defined by the MFI.
- Approved M-PESA loans are extracted from Mifos and upload into the M-PESA system for systematic disbursement. The extract automatically deducts applicable loan fees.
- M-PESA disbursement transactions are accepted into Mifos and the disbursements and loan fees are recorded.
- Search functionality has been improved to allow the user to search for the right client when the bridge is not able to match the transaction by phone number.
- Two new reports were also created to support the overall process. The group collection sheet was created and designed to show mobile payments completed prior to the group meeting; it also shows the allowable and actual advance loan amounts by client. A daily transaction report designed for daily reconciliation was also introduced.

At the time of this writing, KEEF has been using the Mifos-M-PESA bridge for loan repayments but is still testing the disbursement function. When fully implemented, the Mifos-M-PESA bridge should eliminate the need to record payments and disbursement transactions and reduce data entry errors.

#### **OPERATIONAL BENEFITS TO CLIENTS AND TO KEEF**

By the end of February 2011, 7 percent of KEEF's clients (471 clients) were using mobile money. Initial results are quite promising, as KEEF has witnessed the following benefits among its early adopters.

<sup>6</sup> Standard MFI efficiency ratio. Number of clients/loan officer.

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***“Now with M-PESA I can pay the loan any time prior to the meeting date and we do not have to lock ourselves in these small rooms for fear of being robbed.”***

— Jennifer Wanjiru from Weteithie Gateiguru group

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**Group Meeting Efficiency.** The group meetings for M-PESA pilot groups are now completed within one hour, compared with three hours before. By prepaying before the group meeting, the loan officer comes prepared to the meeting. He or she knows who has paid, who hasn't, how much is in the “pot,” who is eligible for advance loans, and how much each member can be loaned. This eliminates the need for discussions to sort out those questions, and the M-PESA features also eliminate the time formerly spent on receiving and counting cash. These time-saving benefits could potentially allow loan officers to triple their caseloads.<sup>6</sup>

**Fraud and Theft Reduction.** Since cash is being paid directly to KEEF's M-PESA account, fraud and theft are minimized. In fiscal year 2010 (July 2009 to June 2010) alone, KEEF experienced three cases of fraud. In one case, a loan officer was not reporting and remitting all the service charges collected. In the second case, a loan officer reported that he was robbed of his collection for the day, and investigations later showed that he had spent the cash on personal use. In the third instance, a loan officer was charging too much for service fees and pocketing the extra fees. The total amount lost from these fraud cases was 103,000 KES (1,288 USD). Such cases will largely be avoided with mobile payments.

As mentioned earlier, there are two types of group loans: the general group loan (GGL) and the advance loan. The advance loan is the one-month term loan that is disbursed during the group meeting, while the GGL is the regular loan and comprises 86 percent of KEEF's loan portfolio. Because clients meet only once a month, under the previous system a client received her GGL loan disbursement at the following group meeting one month after applying. With the implementation of M-PESA, the process redesign, and the loan officer's time savings, the GGL can now be disbursed *within two days*. Now, the client makes a loan request during the group meeting, the loan officer inspects her home and business right after the group meeting and files the application the same day at the head office, and the following day the GGL loan is disbursed to the client via M-PESA.



During a group meeting, a KEEF loan officer collects payments from her clients.

More importantly, KEEF's clients have benefited from mobile money in the following ways:

- There is less risk of losing cash while travelling between her home or business and the group meeting.
- There is less risk of losing the “pot” during group meeting.
- The client spends less time at the group meeting and can spend more time on her business or to attend to her family.

Having an M-PESA account allows the client to safely save money in two ways. She can deposit money whenever she has excess cash. She can also leave some money in the account and withdraw money from the loan only when she needs it, avoiding inadvertent spending on non-essential items or loss of cash through theft.

KEEF offers to give back to the clients its efficiency gains from the M-PESA system by cutting in half (from 10 percent to 5 percent) the interest rate charged on the advance loan for groups whose members are all on the M-PESA system.

## OUTCOMES

### LAYING THE FOUNDATION

Working with a small but unique and dynamic microfinance institution brought new challenges to the Grameen Foundation team. In the first few weeks at KEEF, it was evident that we needed to focus on fundamental operational structures before we could optimize their use of Mifos and before we could start the M-PESA integration.

During our one-year engagement, we helped KEEF establish a foundation that now allows this institution to finally take advantage of the operational efficiencies that both Mifos and the mobile money channel can provide. More importantly, the improved foundation KEEF now has — consisting of people, processes, and technology — was necessary for it to achieve its stated goals of being a well-respected MFI, attracting investments, positioning themselves strategically in the market, and continuing to be innovative in providing financial services to the poor.

The following foundational goals were achieved at KEEF through its partnership with the Grameen Foundation during this entire process:

- Mapping and standardization of processes that led to the development of operations and accounting manuals
- Use of a disciplined process for change management for introducing overall changes with minimal disruption to ongoing operations
- Definition of all job roles and responsibilities, including key performance indicators and the development of a human resource manual, and
- Establishment of a secure and reliable MIS infrastructure — network, hardware, software and personnel.

Even with these accomplishments, however, there is still a lot of work that remains to be done. The end-of-project recommendations for KEEF included these:

- Hire a full-time chief finance officer. This role will be crucial to further defining and institutionalizing

record keeping, establishing controls, producing and analyzing financial statements, and deciding on financial investments and expenses.

- Designate a project manager to institutionalize the operational processes that have been defined and to complete the full roll-out of mobile money.
- Complete the full audit of manual records and Mifos records, and eventually stop the use of Group Files. The audit and reconciliation process should ensure that the migration of data is completed with high accuracy and quality. Mifos should then be used as the sole system of recording to ensure ongoing data quality. This will likewise free up loan officers' time in maintaining the Group Files and allow for the instant creation of reliable operational reports.

### LOAN OFFICER EFFICIENCY

As noted earlier, KEEF has two principal streams of revenue. One is the service fees that are paid by each group and depend on the size of the revolving loan fund. The other stream is administrative fees and interest paid on loans made by KEEF itself, so-called Office Debt. To assess the impact of Mifos and the innovations introduced through the consortium consulting engagement, we look at the impact on each revenue stream separately.

Because service fees are linked to the size of the revolving fund, not the number of group members or loans outstanding, the key variables that determine revenue are the number of groups and the size of their respective revolving funds. For KEEF, increasing the number of groups supported by each loan officer is a top priority.<sup>7</sup> Two strategies were pursued to accomplish this:

- Reduce the time required for group meetings through simplified application forms and procedures, introduction of mobile payments, geographic grouping, and careful scheduling of groups to reduce travel time between meetings.

<sup>7</sup> Because the size of the loan fund is dependent on group size and the volume of borrowing by group members, increasing the absolute size of the revolving fund is a problem not directly related to Mifos or the business process. Therefore, it is not addressed here.

- Reduce the time loan officers spend on administrative or accounting tasks by introducing a dedicated data entry officer for Mifos and enabling the Mifos-M-PESA integration to eventually eliminate data entry and manual reconciliation.

The following table shows the hours saved by the loan officers from the different components of the project.

ACTIVITY	CHANGE	TIME SAVED PER DAY (IN HOURS)
IT strategy	Decision to assign a data entry clerk to enter transaction data in Mifos.	1.5
Business process management	Group clustering reduced the travel time of loan officers to and between group meetings.	2
M-PESA integration	Since cash counting was eliminated and record keeping was reduced, group meetings became shorter.	2
M-PESA and Mifos integration	When KEEF finally converts all groups into M-PESA and switches from using Group Files to Mifos, loan officers will not have to do data recording and reconciliation at the end of each day.	1
<b>TOTAL</b>		<b>6.5</b>

From the above table, it seems that we have eliminated all of the hours in a loan officer's day. Remember, however, that the first 1.5 hours saved by assigning a data encoder are hours that had been spent after office hours by loan officers who had to wait for their turn to use the computer to enter the day's transaction. So, in this case what we eliminated was really overtime work. Moreover, as explained earlier, the loan officers still spend the last hour of their work day maintaining their Group Files.

At the time of this writing, only 8 percent of all groups are using M-PESA, so the loan officers assigned to these test groups are currently the only ones enjoying the full 6.5

hours of daily time savings possible. The remaining loan officers at KEEF are currently only realizing the 2 hours of savings generated by clustering group meetings as well as the after-hours time savings generated by adding data encoders. But even with this partial increase in overall efficiency, those loan officers who are not currently using M-PESA are still able to conduct three group meetings per day. Building upon these new efficiencies, KEEF has

rescheduled its work-weeks so that all the group meetings are done within three weeks out of each month and the "free" week is spent in marketing, recruiting, and following up on delinquent loans.

With just these changes, KEEF is able to handle more clients with fewer loan officers and thus has the potential of increasing its revenue and lowering its costs, since an MFI's revenue is directly proportional to its number of clients and its biggest expense is loan officer salaries.

In the following computation below, we compare the loan officer's caseload and productivity at the end of KEEF's last fiscal year and as of February 2011 (latest data available).

80 KES = 1 USD	6/30/2010	2/28/2011	DIFFERENCE
Number of groups	390	446	14%
Number of loan officers	18	14	-4
Groups/loan officer	22	31.86	45%
Total gross income from loan portfolio (in KES)	18,533,381	14,129,723*	-4,403,658
Income/loan officer (in KES)	855,387	1,009,266	153,879

\* This number is computed as the projected 8-month income with a 14% revenue increase proportional to the increase in number of clients.

*“With M-PESA, we don’t have to constantly act like spies and watch our backs even if we are already at the head office.” — Daniel Kimani, CEO, KEEF*

If the loan officers are each producing 153,879 KES more per year and there are 14 more loan officers, KEEF can expect 2,154,308 KES (26,929 USD) of incremental revenue due to increased loan officer efficiency alone. Take note that if KEEF had not reduced the number of loan officers, it could have recruited more clients, disbursed more loans, and generated incremental revenue of 4,037,064 KES (50,463 USD) during the year.

Once KEEF converts 100 percent of its groups to M-PESA, the group meeting time will be reduced by 67 percent, from three hours to one hour. KEEF loan officers will actually realize an efficiency gain of 300 percent, but since KEEF plans to have group meetings only three weeks out of four, we can reduce this efficiency gain to 225 percent. If the loan officers are 225 percent more efficient on top of the initial 68 percent efficiency gain (which resulted from the massive process improvements and introduction of Mifos), and assuming that all efficiencies are put towards client recruitment<sup>9</sup>, KEEF could experience additional revenues of 31,791,877 KES (397,398 USD) per year. This calculation is derived from the new loan officer productivity 1,009,226 KES (12,615 USD) multiplied by the number of loan officers (14) and with an efficiency gain of 225 percent.

#### IMPROVED SECURITY AND REDUCED FRAUD

With KEEF transitioning to M-PESA, cash security and fraud risks are minimized. Client repayments and fees are credited directly to KEEF's M-PESA account and loans are also disbursed via M-PESA. When all members transact with KEEF through M-PESA and cash is completely eliminated, it will be very hard for loan officers to lose cash. Fraud cases involving loan officers overcharging clients

and not remitting cash will be eliminated. Furthermore, loan officers and group members will not be at risk of being robbed anymore.

Reducing cash risks and fraud can result in cost savings for KEEF.

In FY2010, as mentioned earlier, KEEF recorded three cases of fraud totaling a loss of 103,000 KES (1,288 USD).<sup>10</sup> Going cashless, when combined with new process controls and the automatic recording of transactions from Mifos to M-PESA, should eliminate all known fraud related to cash handling. However, to be conservative, we estimate that this risk will be reduced by only 90 percent. The total savings of KEEF related to fraud cases for FY2010 would then have been 92,700 KES (1,159 USD). This amount is 0.05 percent of KEEF's Gross Income for Loan Portfolio. KEEF can assume 0.05 percent savings year after year with the M-PESA integration.

Furthermore, with very little cash at the head office, KEEF does not need to hire security personnel. This personnel currently costs KEEF 120,000 KES per person, and as KEEF expands and opens additional branches or service centers it can continue reaping this savings.

More important than this cost savings, KEEF branch personnel, loan officers, and client members enjoy peace of mind.

#### INCREASED CLIENT SATISFACTION

As part of the mobile money pilot, the Grameen Foundation monitored the client satisfaction of the pilot groups. This survey was conducted monthly with five random groups that had implemented mobile money; the survey questions were asked at the end of group meetings by the loan

AREA FOR EVALUATION	CLIENT SATISFACTION	
	As of September 2010	As of February 2011
Group meeting structure	71%	100%
Group meeting duration	19	72
Mobile money payment process	33	45
Mobile money transfer cost	18	95

<sup>9</sup> Arguably, efficiencies can be redirected towards other activities such as better customer service, providing more services, and capacity building. However, KEEF's latest business plan is still focused on increasing client outreach.

<sup>10</sup> This number is based only on FY2010 since the prior years' data are not available.

officers. This method was used to test the efficacy of the training, ensure clients' receptiveness to the changes, and reset course as needed. (The survey and instructions can be found in Appendix C.) The survey shows increased client satisfaction in the following areas:

Much work was done on the education and training regarding mobile money costs for both loan officers and clients. The improvement from 18 percent to 95 percent in mobile money transfer cost is a good example of measuring the efficacy of designing and refining the messaging around the fees. This is also key to successfully rolling out M-PESA across the entire client base.

The overall increase in clients' satisfaction can be attributed to the following client benefits brought about by mobile money:

- Reduced risk to client of losing cash while moving between home or business and the group meeting and during the group meeting
- Time savings in group meetings
- Ability to save money in an M-PESA account, and
- Reduced interest rate for an advance loan—from 10 percent to 5 percent.

## KEY OBSERVATIONS AND CONCLUSION

The main purpose of this case study was to better understand the value that a holistic approach to technology deployment can bring to a microfinance institution. This approach should combine considerations for people, process, and technology. In particular, we were interested in documenting the experience of introducing a mobile payment platform at an MFI using Mifos. By selecting KEEF for our study, we also learned much about our original hypothesis, namely, that local institutions could download the application and move forward on their own, avoiding the expenses usually associated with commercial software deployments.

***Technology can only yield strategic, financial, and social benefits when considered in conjunction with the people and processes.***

Unfortunately, KEEF's initial experience with Mifos as a community deployment, leveraging a local IT specialist, was quite poor. Support from the local provider was inconsistent and suggested that the service provider was not sufficiently familiar with Mifos. As a consequence, although KEEF ultimately went live with Mifos, it was unable to make full use of the functionalities and continued to struggle to keep accurate records, hindering its ability to manage operations. This situation at KEEF underscored the importance of proper investment in qualified technical resources and internal staff, and further reinforced the

importance of looking at IT deployments from a 360 degree perspective.

In both cases—Mifos implementation and mobile money integration—business process and human resource optimization were critical to ensuring that the technology generated benefits to both KEEF and its clients.

The mobile money integration also required that all functions at KEEF (not just IT) be reviewed and appropriately adjusted and streamlined for Mifos. KEEF identified a marketing officer and conducted market research and focus group discussions to understand customers' hesitation to adopt mobile transactions. As a result of the study, the M-PESA loan product was adjusted by offering a lower interest rate, resulting in better client service and satisfaction.

Change management was an important element throughout the process. We evaluated the overall changes required and tried to maximize value with regard to KEEF's overall business needs. From the initial mapping of processes through the redesigned processes, changes and course corrections were evaluated with a KEEF working group and tested before they were implemented, documented, and reviewed.

The overall streamlining of business processes at KEEF, coupled with the Mifos and M-PESA systems, resulted in considerable improvement in loan officer efficiency. Once all of these improvements are refined and implemented, this efficiency will increase even more dramatically. The loan officer may then use the time saved to reach more clients, increase client interaction/servicing, or do market research — all of which would serve to improve the client experience.

***To fully leverage the strategic benefits of technology, an institution must walk before it runs.***

Business operations fundamentals must be in place before automation and innovation can flourish. Technology only multiplies the existing efficiency (or lack thereof) of any operational processes. This is why it is so critical for an MFI to “walk before it runs” — to institute efficient and effective manual processes before implementing systems. Likewise it must establish strong competency and processes for basic systems — such as an MIS — before introducing new technology innovations that build on the foundational MIS. While it is possible for initiatives to be done in parallel (as we did with BPM, Mifos, and mobile money), this approach requires substantially more time and resource investment than it would have if the MFI first had a strong, streamlined manual operational foundation in place. Going forward, as KEEF seeks to strengthen its existing technology base without the support provided by the Grameen Foundation, it will be critical for it to continuously improve its baseline operations and only add new technology from a position of operational strength.

***The real work has just begun.***

For the Grameen Foundation to consider this project a real success, we would like to see KEEF use reliable and real-time information from Mifos and to become 100 percent cashless in the field with mobile money. Doing so should

bring considerable benefits to both KEEF and its clients. This project's scope was only to create an IT strategy, introduce business process management, advance the Mifos installation, and pilot the use of mobile money. Working together with KEEF, we believe that we have put processes and tools in place for KEEF to continue this work. The key next steps for KEEF to take are these:

1. Invest in key and technical staff to continue this work. Key personnel such as a chief financial officer and operations manager should build, enhance, and implement defined accounting and operations processes and manuals. Technical staff and users should be properly trained and a continuing program for enhancing technical skills should be implemented. KEEF should ensure that the number and competency of management and staff are adequate and appropriate for their growing needs.
2. Institutionalize and continue to optimize the redesigned processes through regular process compliance audits and reviews.
3. Ensure that the MIS systems (Mifos and the accounting system) are current and accurate. This should start with a complete full audit of Group File versus Mifos data, as well as M-PESA and accounting data, to establish Mifos as the primary database, dropping the manual system altogether.
4. Continue marketing, training, implementing, and refining the integration of Mifos, M-PESA, and accounting systems for the full roll-out of the M-PESA project.
5. Update and implement the IT strategy plan on a yearly basis to ensure that it is still relevant and aligned with business goals.

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***“The most poverty focused organizations must be the most efficiency focused organizations.”***  
— Bill & Melinda Gates Foundation

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## APPENDIX A: Products

Loans available from KEEF solidarity groups are of several types. The largest proportion of loans consists of these two types:

- **General Group Loans (GGL).** These are general purpose loans of 6,000-500,000 KES (75-6,250 USD), depending on the borrower's history and qualification. No collateral is required but guarantors are required. Repayment period is from 16-55 months depending on size of the loan. Interest is charged at 0.7% per month or 8.4% per annum.
- **Advance Loans.** The advance loan is for one month at a flat rate of 10%. No collateral or guarantor is required. The maximum loan size is 15,000 KES (188 USD).

While GGLs are an important part of KEEFs offering, it is the monthly advance loans that are most popular and most important to KEEF. Monthly advance loans have a relatively low threshold of qualification. They meet clients' needs for smoothing of income fluctuations during the month, and the 10% flat interest rate causes the revolving fund to grow rapidly, thus increasing the fees collected by KEEF. This is

therefore the product that is currently most important to KEEF, and it is both strongly promoted and popular.

- **Advance+.** This loan is made directly from KEEF to the borrower. It does not come from the group's revolving fund. Interest is 10% per month on declining balance. Loan size is from 10,000-50,000 KES (125-625 USD). There is an application fee and the client must have 6 months' group membership and 10,000 KES (125 USD) minimum savings.
- **Farm Development Loan, Business Loan, School Fees Loan.** Like Advance+, these loans are directly from KEEF to the borrower. These are special purpose loans of 5,000-500,000 KES (63-6,250 USD) of varying lengths at 4.5% interest. There is an application fee and varying, but significant, requirements for established savings.

Because of their substantially higher qualification requirements, the Advance+ and special purpose loans are a much smaller portion of the portfolio. Below is the breakdown of the overall portfolio as of the end of the latest Fiscal Year, June 30, 2010.

### KEEF'S MERRY-GO-ROUND, DIVIDENDS, AND INTEREST RATES

98.5% of KEEF's loan portfolio is composed of the group loans — General Group Loan (GGL) and the Advance Loan. Using the standard formula for Annual Percentage Rate (APR), the APR for GGL is between 9.4% to 13.7%, and the APR for Advance is 61% to 144%. The average effective APR for MFIs in Kenya is 40 to 50%. Thus, KEEF's Advance APR is high.

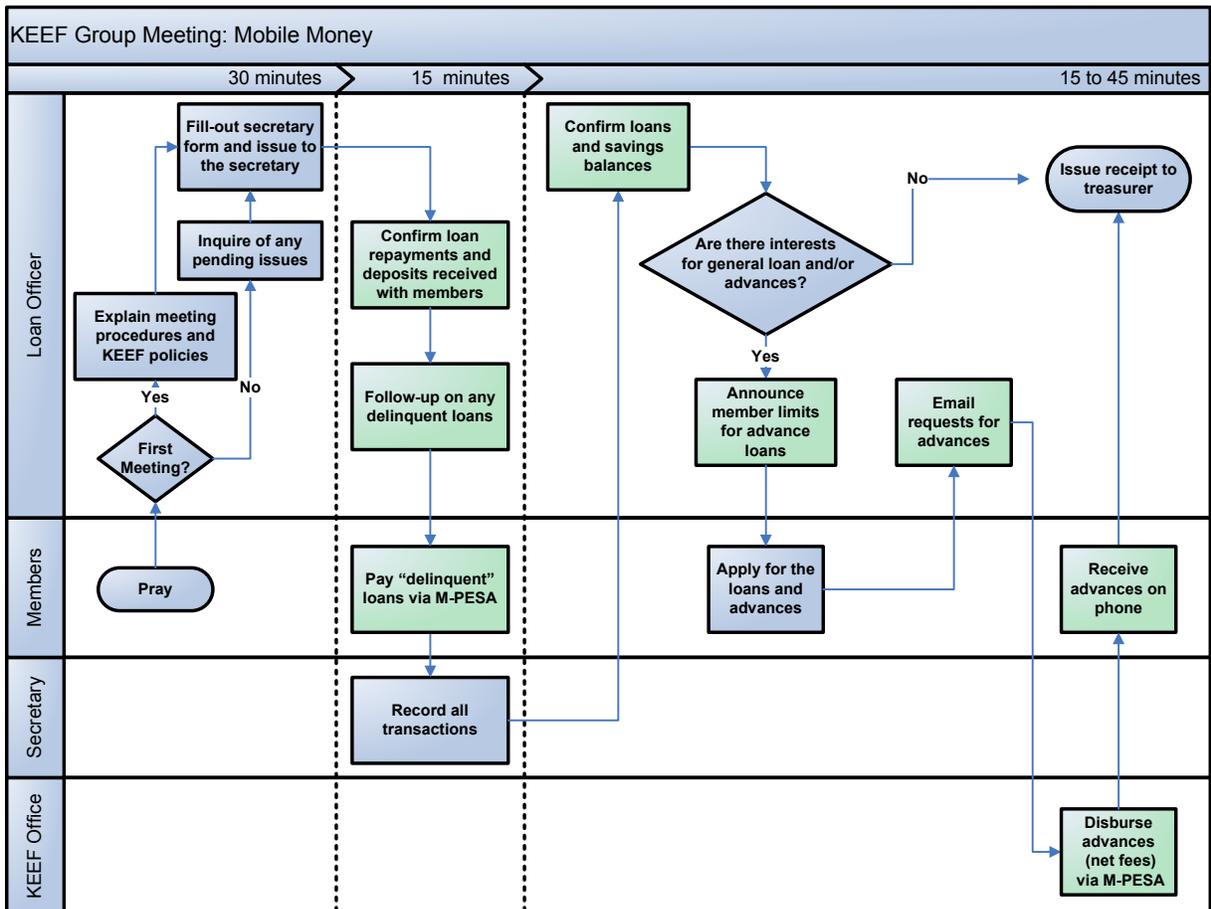
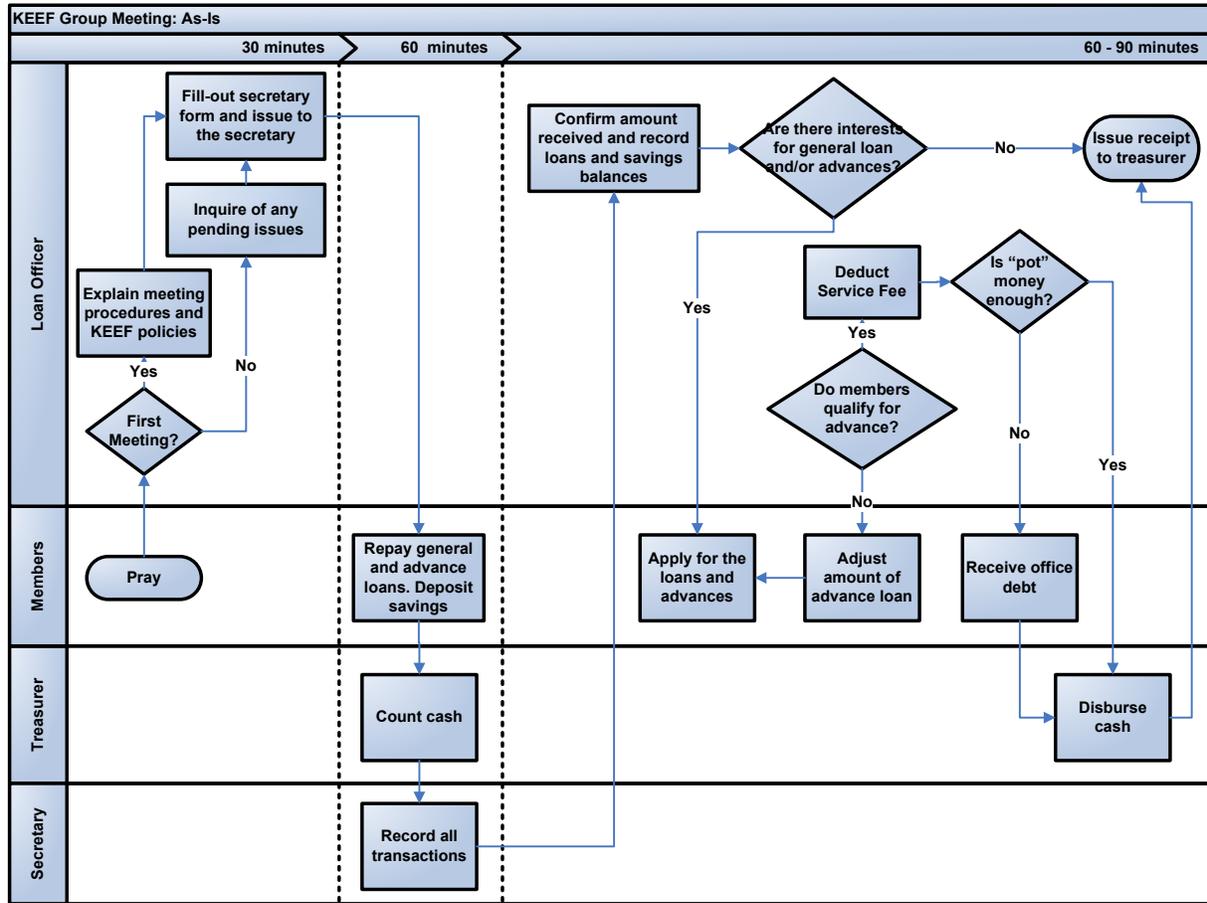
Take note however, that all the loan interest goes back to the "pot" and at the end of the year a good portion is returned to the clients in the form of dividends. These dividends can go up to 50% of the clients' contribution, so not all of the interest stays with KEEF and can arguably be discounted from the APR.

Nevertheless, the APR calculation, based on international standards, raises criticism in the public eye and is not good for KEEF's reputation. Thus, GF recommended that KEEF lower the interest to a market rate and then lower the dividend share just enough to reach KEEF's financial goals.

KEEF agreed to follow these recommendations and will also lower the rates on its individual loans. This is planned to go into effect by July 2011.

PORTFOLIO BY PRODUCT TYPE 80 KES = 1 USD	# OF BORROWERS	OUTSTANDING PORTFOLIO (KES)	% OF TOTAL PORTFOLIO VALUE
General Group Loan	4,841	27,683,351	83.08%
Advance	5,832	5,143,469	15.44%
Individual Loans (Advance +, Farm Loan, Business Loan, School Fees)	40	494,647	1.48%

# APPENDIX B: Group meeting process, before and after Mifos and M-PESA Integration



## APPENDIX C: Mobile Money Client Survey Form and Instructions

	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5
Group ID					
<b>1-Group Meeting Attendance</b>					
# Clients					
<b>2-Group Meeting Structure</b>					
positive					
neutral					
negative					
<b>3-Group Meeting Duration</b>					
positive					
neutral					
negative					
<b>4-Mobile Money Payment Process</b>					
positive					
neutral					
negative					
<b>5-Mobile Money Transaction Fee</b>					
positive					
neutral					
negative					
<b>6-Loan Officer Access</b>					
positive					
neutral					
negative					
<b>7-Clients Using Money Lenders</b>					
# Clients					
<b>8-Amount Spent on Transportation To/From Group Meeting (KSH)</b>					
Client 1					
Client 2					
Client 3					
Client 4					
Client 5					
<b>9-Amount of Time Spent on Group Business (Hours)</b>					
Client 1					
Client 2					
Client 3					
Client 4					
Client 5					

## INSTRUCTIONS CLIENT SURVEY FORM

This survey is designed to assess a number of client experience indicators and should be administered every month. Five groups are to be selected at random and this survey conducted at each of the five group meetings during the month.

### Step 1: Month

In the space at the top of the form, enter the month for which the assessment is being conducted. The month corresponds to the assessment month noted in the efficiency assessment excel spreadsheet.

### Step 2: Group ID

Enter the ID number of the group at which the survey is being conducted.

### Step 3: Question 1 – Group Meeting Attendance

Count the number of group members in attendance at the meeting and enter that number under the appropriate group column.

### Step 4: Question 2 – Group Meeting Structure

This question seeks to understand client's general satisfaction with how the group meeting is structured. Ask the clients to raise their hands if they have a positive opinion of the group meeting structure. Count the number of hands and enter that in the 'positive' box for the appropriate group. Now ask the clients to raise their hands if they have a negative opinion of the group meeting structure. Count the number of hands and enter this in the 'negative' box. Ask any clients who has not raised their hands to raise them. Count the number of hands and enter this in the 'neutral' box.

### Step 5: Question 3 – Group Meeting Duration

This question seeks to understand how clients feel about the duration of the group meeting. Using the method described in Step 5, ask clients to raise their hands if they have a positive, negative, or no opinion of the meeting duration and enter the number of hands in the appropriate box.

### Step 6: Question 4 – Mobile Money Payment Process

This question seeks to understand how clients feel about the mobile money payment process, in general. Using the previously defined show of hands method, ask the clients to indicate if they have a positive, negative or no opinion of the mobile money payment process and enter the number of hands in the appropriate box.

### Step 7: Question 5 – Mobile Money Transaction Fee

This question seeks to understand how clients feel about the mobile money transaction fee. Again using the method defined above, ask the clients to use a show of hands to indicate if they feel the benefits of using mobile money is worth the current transaction fee, if they believe the benefits are not worth the fee, or if they have no opinion. Count the number of hands and enter the amount in the appropriate box.

### Step 8: Question 6 – Loan Officer Access

This question seeks to understand if clients are comfortable with the amount of access they have to the loan officer particularly in the context of shorter group meeting durations. Using the show of hands method, ask clients to indicate if they are happy with the amount of access they have to their loan officer, unhappy with the amount of access, or have no opinion. Count the number of hands and enter the amounts in the appropriate box.

### Step 9: Question 7 – Clients Using Money Lenders

This question seeks to understand how many clients continue to use money lenders in addition to accessing KEEFs services. Ask the group to raise their hand if in the past three months they have taken a loan from a money lender (not KEEF or other MFI). Count the number of hands and enter this number in the appropriate group box.

### Step 10: Question 8 – Amount Spent on Transport

This question seeks to understand, in general, how much clients are spending to get to and from the group meeting. For this question, select five group members at random and ask them how much it cost them to get to and from the group meeting today. For each responding client, enter the amount in the appropriate box.

### Step 11: Question 9 – Amount of Time Spent on Group Business

This question seeks to understand how much time clients are spending to conduct business associated with the group. This should include making payments and collecting disbursements, traveling to and from the group meeting, as well as the time spent in the group meeting itself. Using the same five clients selected for the previous question, ask each client individually to calculate the number of hours they believe they spend on group business. The answer can be whole or partial hours. Enter the total in the appropriate box for each client using decimals for partial hours (e.g., 3.5 for three and one half hours).

### Step 12: Data Entry

Once the surveys have been completed, return this form to the office and transfer the data into the client survey tab of the efficiency assessment excel for the corresponding period.





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