Case Study:

Adoption of Mifos® at Al Majmoua

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.

Acknowledgements

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EXECUTIVE SUMMARY

In 2009, the Lebanese Association for Development — Al Majmoua (AM) — became a member of the Mifos® consortium program. Together with on-site implementation of Mifos, the program provided technical and business consulting services to help AM optimize its current business processes and develop an IT strategy for the long term. The choice to adopt Mifos came after AM realized that its previous in-house MIS would be unable to support the growth it had forecast for the coming years. Mifos offered a more robust, scalable, flexible, and affordable MIS option for this rapidly growing organization.

The Mifos deployment at AM was completed in several stages. An on-site project manager worked alongside the organization from September 2009 to May 2010 and then continued as an independent contractor until September 2010. Over the course of the deployment, the project experienced various bugs and delays that required AM to work around to continue onward. Pilot testing of Mifos was completed in April 2010, and the new system was successfully running parallel to the old system by May of the same year. The old system will be kept until December 2011 in order to reconcile and close out some of AM's older group loans. The full benefits of using Mifos will be realized once the old system is completely retired.

AM's unique lending method greatly influences the kind of benefits the institution will gain from using Mifos. The majority of its portfolio is individual loans, with the minority allocated as group loans. Repayment and disbursement processes are similar for both types of loans. After the first loan cycle, group meetings are held only if repayments are not made on time. Repayments are made through local banks or other financial partners. AM uses its extensive channel of bank partners to administer its loan portfolio, relying on the partners to accept repayments from its clients. Loan officers spend most of their time dealing with arrears and managing relationships rather than collecting repayments. Due to this lending methodology, the impact of Mifos on loan officer efficiency is smaller than what other MFIs have experienced.

Instead, the impact of Mifos at AM will be as a platform for faster growth. It will enable the institution to expand its product offering and address its clients' needs by easily configuring and testing specialized products. It can diversify the business risk that comes from relying on partnerships by easily integrating with new partners. It can use real-time data reporting to follow up with delinquent accounts more rapidly. Up-to-date and accurately targeted data can also aid AM's strategic planning for the future.

The return-on-investment (ROI) model used to analyze the financial savings achievable by a technology change is very sensitive to the subject institution's overall growth. It is heavily influenced by both the institution's underlying business model and by the ways its leadership capitalizes on the benefits made possible. With that in mind, the ROI evaluation of AM's deployment of Mifos found that the financial returns would be 840,000 USD over five years.

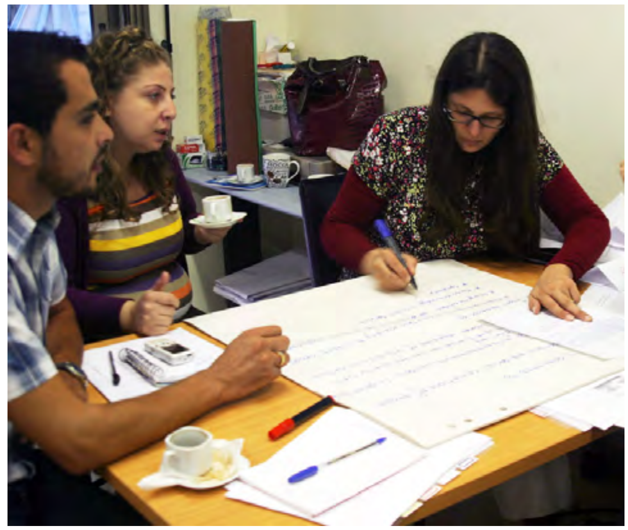
INTRODUCTION

The Lebanese Association for Development, Al Majmoua (AM), was founded in 1994 as a program within Save the Children. In 1996 it was spun off as an independent Lebanese non-governmental organization. With operations based in Beirut, AM envisions itself as "the leader in creating an inclusive financial system where all people in Lebanon have access to affordable services.[1]" Its stated mission is to

> ***maintain a sustainable and long term commitment towards as many working poor as possible, through the provision of quality financial and non-financial services to improve the quality of life of limited income individuals and their families, with a focus on micro-entrepreneurs, workers and especially women, in all areas of Lebanon, therefore contributing to national welfare***.[2]

By the year 2000, AM had roughly 2,000 clients and less than 30 staff members. It was managing its loan portfolio with an application based on Microsoft Access, developed in-house by a single employee who served as the sole support for the system. Recognizing that it would eventually need a more robust system, in 2000 AM began a project to build a replacement system. After 18 months and with no end in sight, the project was canceled by the executive director, and any future plans for replacing the existing system were postponed. In 2003, the developer of the original system left the institution.

Meanwhile, at the Grameen Foundation the Mifos initiative had begun in earnest in 2005 with the goal of providing the microfinance industry with a robust, scalable, affordable technology platform to manage loan and savings portfolios. Moreover, the platform was to be open source[3] and free of license fees, allowing users to modify it to suit local needs.



Mifos has enabled Al Majmoua staff to review client records much more easily.

As it had anticipated, by 2006 AM was outgrowing its Access system. A cautious search was begun for an external supplier, although its success was regarded with skepticism. Mifos was among the systems considered at that time, but it was judged to be too immature. The search was interrupted by the 2006 Israeli-Lebanese war and the plan to replace the MIS receded, but in 2008 it was revived and AM again began a search for alternatives for its rapidly growing institution. After reviewing several other systems — most notably Delta, which is developed in Jordan — Mifos was finally chosen. The commitment by the Mifos team to support the deployment directly was a strong incentive in this purchase decision.

The Grameen Foundation's work with AM was made possible through its relationship with Grameen-Jameel Pan Arab Microfinance Ltd. (hereafter, Grameen-Jameel), a joint-venture company that operates in the Middle East and North Africa (MENA) region. Grameen-Jameel formed a partnership with Al Majmoua in May 2007, and since then has provided a number of products and services to AM, including Mifos.

1 Al Majmoua Lebanese Association for Development, "Five Year Business Plan: 2009-2013," p. 5.

2 Linkedin: Al Majmoua. 10 March, 2011 < http://www.linkedin.com/company/al-majmoua---the-lebanese-association-for-development>.

3 Source code for Mifos is freely available for download at www.mifos.org.

INSTITUTION PROFILE

Having established itself as one of the leaders in Lebanese microfinance, Al Majmoua also holds a rather unique position in the market. For example, it is one of the few microfinance players that are fully independent, politically neutral, and non-discriminatory. It is not linked with a particular bank, political party, or region. AM will do business with anyone living in Lebanon, as long as they are in need. This nonpartisan approach to business might limit its opportunities to benefit from certain funding sources, but it ensures that AM will be in business regardless of political changes, thus offering security to its clients.

Secondly, AM is one of the few microfinance players that attends to the social needs as well as the economic needs of its clients. The organization takes a holistic approach to alleviating poverty by offering social programs to empower youth and women, building business skills, and linking entrepreneurs.

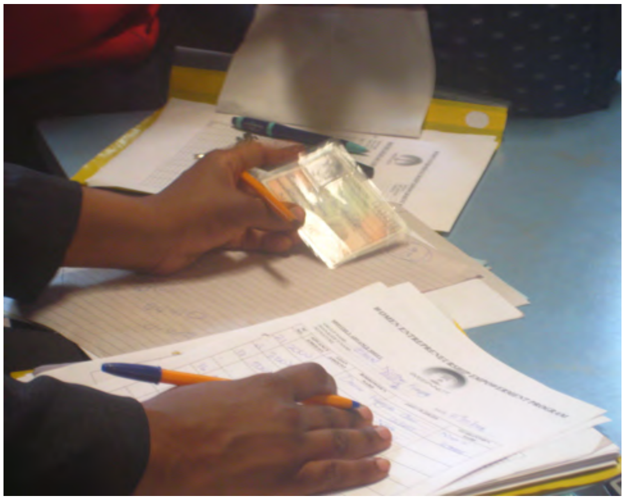
Al Majmoua is active across Lebanon, including in the Palestinian refugee camps, through a network of 10 branch offices. These branches allow AM to be present in the communities it serves and to remain aware of the particular needs of its clients. Despite this desire to cater to those needs, AM's initial product offerings were limited to what the previous Access system could support.

Before Mifos was implemented, AM had offered only three basic loan products: group loans, issued in Lebanese pounds (LBP); individual loans issued in LBP; and individual loans issued in US dollars (USD). Within these loan categories there were special types, notably home improvement loans and technology loans (for purchase of computers and peripherals). Although these loans were very similar, they were separated into multiple loan products, because the previous system required them to be rigidly defined. AM has considered expanding its product offering to include entirely different loan types, such as Islamic loans (where no interest is charged; these would be issued directly from an Islamic Bank but administered by AM), a "gold loan" backed by jewelry pledged as collateral, and a remittance product that would recognize the stable flow of foreign remittances as family income for credit qualification.

AM's lending method for these products has been adapted to serve the individual needs of the urban poor of Lebanon. The majority of its loans are issued to individuals, while a smaller portion are issued through loan groups consisting of three to five members each. Group loans are made primarily in rural areas and small villages, while individual loans are issued primarily in urban areas. As a result, loan officers tend to specialize in handling one type or the other. Group loans are smaller than individual loans (1,500 USD versus 15,000 USD). Each loan officer is responsible for an average of 15 loan groups. These loan groups meet once a month for the first loan cycle, and after that regular meetings are no longer held as long as repayments are made on time. Customers make repayments on their own through local banks or other partners. The same repayment scheme is used for both individual and group loans. AM charges a flat-rate interest on all of its loans.

To administer its loan portfolio, AM uses a combination of its own branches and staff and an extensive network of bank partners. Although loan agents manage the relationship and arrears of their clients, actual repayments and disbursements are conducted at the local bank branches that AM partners with. This approach relieves AM branches from managing cash, but it also weakens the control that AM has over the customer service of cash transactions. These relationships had become a source of significant business risk for AM in the year prior to Mifos implementation, as the banks were becoming overwhelmed with the increasing number of AM clients. At the time of the Mifos engagement, 90 percent of AM's portfolio was being serviced through Banque Audi, but AM was working to diversify its network of partners to include four other banks--the Liban Post, Western Union, BBAC, and MoneyGram. Further, it was also planning to pilot cash management at its own branches, to test the viability of circumventing a partner network altogether.

MIFOS DEPLOYMENT



Mifos relieves the challenges of manual data reporting for Al Majmoua staff.

The previous system at AM created a number of problems for the organization's plans for growth and stability. System performance was slow, sometimes requiring up to 45 minutes to complete a single report. Data was sent manually between the head office and branches on CDs that were carried by couriers once a week, causing long delays in data consolidation. Manual data entry from the old Access system into the accounting system created a bottleneck in the finance department. It required the accounting staff to spend hours each week keying and reconciling data, and it did not provide sufficient accountability for errors. The prior system did not allow data from multiple participating financial institutions to be easily imported, and this weakened AM's ability to establish new partnerships for loan repayments to replace its reliance on Banque Audi. The ability to develop new products was limited because the prior system required a separate database for each of the basic loan types. Reports were poorly matched to the staff's needs at the time, and a comprehensive roll-up of all organizational data was not possible due to these multiple databases. Certain reports had to be created manually. For example, a monthly average delinquency report would take area managers up to half a day per loan officer to create (for a total of 50 to 60 loan officers), and was so labor-intensive that it was abandoned.

The Mifos deployment was intended to alleviate all of these challenges, although the benefits of the deployment would not be immediately realized since Mifos had to be rolled out in stages for AM over a two-year period. The Mifos team committed to supporting the deployment directly, and based on what the team had previously learned during deployments at three other MFIs — Grameen-Koota (in India), enda inter-arabe (in Tunisia), and SECDEP (in the Philippines) — a full-time project manager was appointed to oversee the project on-site in Beirut from September 2009 to May 2010. AM then hired the project manager to continue as a contractor with the program until September 2010. The deployment moved forward during this time, and in April 2010 a successful pilot test of Mifos was completed. By May 2010, AM's entire branch network was operating on Mifos in parallel with its previous MIS. Mifos will act as the sole MIS for AM once all of its old group loans have been closed out, expected to occur by December 2011. At that stage, the full benefits of the new system will begin to take effect.

OUTCOMES AND ROI ANALYSIS

Adopting a system like Mifos brings an MFI many benefits. Not all the benefits are financial returns that can be directly or easily measured. With proper planning and integration into the full business process, a management information system (MIS) that provides more complete, accurate and timely business information will produce many benefits that are difficult to quantify, including these:

- Better products, based on accurate product performance data
- Increased access to financing and lower financing costs due to increased transparency
- Reduced portfolio-at-risk (PAR), since loan officers have more time to follow up with clients and better information about arrears
- Better customer service in the form of faster loan application and disbursement
- Easier integration of loan portfolio information with other systems such as accounting, business intelligence, human resources
- Better monitoring of social performance (measurement of impact on poverty), and
- Better access to new partner networks as integration points are streamlined and made configurable.

All these benefits are real, if not necessarily inevitable. AM obtained many of these benefits as a result of adopting Mifos. In particular, it was able to expand its product offering, attract new partners (which addressed its highest priority business risk), and create more appropriate reports.

Nevertheless, if MFIs are to adopt systems like Mifos on a broad scale, it is important to identify direct financial returns where possible and to measure their impact on the financial performance of the business. The ROI analysis undertaken at AM focused on quantifiable impacts that result in both increased revenue and lower costs. These impacts are:

- **Enabling Growth.** With a home-grown, decentralized system, it was impossible to quickly add or remove bank network partners from the system, putting AM at risk of a sudden shutdown of transaction processing if Banque Audi ever ended the partnership. Likewise, the Access-based solution could not be scaled up with AM as the number of its transactions grew. With a centralized, configurable, and scalable system, AM's growth has been optimized, adding incremental revenue from growth in its client base.
- **Faster launch of new products and services**. When new products are launched, they must be delivered through the branch network. A centralized system allows products to be rolled out to all branches simultaneously without the need to visit branches physically to update software. This produces additional incremental revenue as time-to-market is reduced.
- **Reduced time and expense of reporting. I**n a decentralized system, data from individual machines in branches must be manually consolidated at the branch level, and it must then be transmitted to the home office where it is recompiled to create a consolidated report for the entire loan portfolio. A real-time centralized system such as Mifos eliminates the need for manual data consolidation and lowers the costs of preparing monthly reports.
- **Lower cost of MIS system maintenance**. In a decentralized system, any software installation or update requires staff from the head office to visit each branch and update each computer individually. This consumes employee time and travel costs and delays

the rollout of new products. With a centralized web-based system, configuration and updates are applied to a single server at the home office. No travel to any branch is required, eliminating this expense entirely.

To obtain a realistic estimate of the ROI from Mifos, results must be examined over a reasonable payback period. In this case, a period of five years has been used, following common industry convention. Because the AM deployment is recent, however, available data on actual results is limited to two years. Furthermore, because the ROI analysis is focused on overall efficiency gains, the model is very sensitive to growth in the number of borrowers, loan officers, and branches.

To get a picture of the impact of Mifos deployment, our analysis compares two alternate scenarios. First, we consider what the future would have been if AM had continued to use a decentralized system like the one used before Mifos, projecting into the future operational results observed from the year before Mifos was deployed. Second, we look at the different results obtained under Mifos, projecting results observed during the year following Mifos deployment.

Intuitively, there should be a strong link between MFI growth and Mifos, given the flexible products, scalable systems, and operational efficiency it provides. However, that link is usually indirect and partial. Although a good MIS may be a necessary condition of growth, it is not alone sufficient for growth. Growth clearly requires other factors, including at least a management and business plan focused on growth and innovations in products and processes that follow. Accordingly, the analysis here takes a conservative approach, attributing only a fraction of any observed improvements to Mifos.

As with any ROI analysis, some assumptions are required. Primarily to keep the model simple, we make the following assumptions throughout:

- Average yield on loans, average cost of capital, interest rate on short-term borrowing, and applicable currency exchange rates all remain constant throughout.
- Only 10 percent of total year-over-year loan portfolio growth occurring after Mifos is deployed is attributed to Mifos.
- The impact of inflation on staff salaries and expenses is ignored.

Certainly, if those amounts were adjusted for possible fluctuations the model would be more accurate. But since the current analysis is only intended to give an idea of the potential returns to an investment in Mifos, adding complexity by modeling changes in the surrounding financial environment does not seem justified.

Throughout the presentation that follows, *Year 0* refers to the calendar year immediately preceding full deployment of Mifos (December 2009 to December 2010). This is our base year. *Year 1* is the calendar year immediately following full deployment of Mifos (when all branches are using Mifos). Since a full year has not yet transpired since AM went live on Mifos, data for Year 0 is actual data, drawn from interviews with MFI management and SEEP reports, while data for Years 1 to 5 consists of projections based on estimates and business plans provided by MFI management.

SUMMARY OF FINANCIAL RESULTS

AM has benefited on a number of levels from implementing Mifos. Due to its unique lending methodology, most of its efficiency gains will occur through the automation of processes at the office level rather than among loan officers. Head and branch offices that are more efficient can spend more time processing new loan applications, managing delinquent accounts, creating and marketing new products, and planning strategic initiatives.

More importantly, Mifos gives AM a platform to move forward and expand its products, gain more partners to mitigate its risk, and generate timely and appropriate reports. By giving AM a platform for easy product configuration, Mifos enables the organization to test and deliver specialized products quickly and reach new

TABLE 1. ROI SUMMARY: AL MAJMOUA (IN USD)

PROJECT REVENUES / SAVINGS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Increased Revenue					
Growth in Income attributed to Mifos	469,819	410,363	543,756	760,713	902,858
Better Cash Management	-	-	-	-	-
New products (faster TTM - incremental income)	414	620	840	1,146	1,519
Cost Savings					
Decreased Time for Manual Reporting	-	39,725	47,478	55,232	66,088
Cost Savings in Branch Maintenance	-	30,660	36,396	42,261	50,537
Better Internal Controls --> Less Fraud	-	-	-	-	-
Better Arrears Management --> Less PAR	-	-	-	-	-
Reduction in MIS License Costs	-	-	-	-	-
Faster loan disbursement	-	-	-	-	-
	470,233	**481,368**	**628,471**	**859,352**	**1,021,002**

PROJECT EXPENSES	UPFRONT	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Hosting	14,820	8,820	8,820	8,820	8,820	8,820
Hardware	1,200	-	-	-	-	-
Software	-	-	-	-	-	-
Connectivity Costs	8,720	4,360	5,580	6,100	6,700	7,580
Data Migration	-	-	-	-	-	-
Customizations/Enhancements	90,000	50,000	0	50,000	-	50,000
Training	7,862	2,246	2,246	2,246	2,246	2,246
Staff Time for encoding (Encoder)	-	-	-	-	-	-
Staff Time for maintenance	37,800	21,000	25,200	29,400	33,600	37,800
Other upfront cost	17,838	-	-	-	-	-
Faster loan disbursement		-	-	-	-	-
	178,240	**86,426**	**41,846**	**96,566**	**51,366**	**106,446**
Net Cash Flows	(178,240)	383,806	439,522	531,904	807,986	914,556
NPV of Cash Flows	(178,240)	290,762	252,251	231,266	266,139	228,213
Payback period	(178,240)	112,522	364,773	596,039	862,178	1,090,391
Yearly ROI		63%	42%	30%	49%	28%
					NPV AFTER 5 YEARS:	**826,053.99**

communities with those targeted products. By managing the risk of engaging with bank partners, AM can grow more rapidly without putting its operations at financial risk. Generating timely and appropriate reports will enable it to follow up with delinquent accounts quickly and recapture lost revenue more effectively. Better reporting also allows AM to accurately assess client needs and trends in order to make forecasts and do strategic planning.

As mentioned above, Mifos was deployed at AM in stages over a long period of time. Because of this, AM experienced large upfront costs, which are captured in Year 0. Due to these costs, the ROI analysis found negative net values in Year 0. During 2011 (Year 1), AM is experiencing many of the benefits of Mifos, but only once all loans in the previous MIS system are closed out and the system is officially retired in December 2011 will AM begin to reap the full benefits of the Mifos deployment. As a result, some benefits, such as loan portfolio growth attributed to Mifos, will begin in Year 1, while other benefits, such as the cost savings from easier reporting and branch maintenance, will begin in Year 2 and beyond. At that time, AM will be positioned to add new seasonal loan products, reduce its manual labor to achieve more robust efficiency gains from Mifos, and more rapidly expand its outreach.

Table 1 summarizes financial return projections for the Mifos deployment at AM (all amounts are in US dollars). ROI is calculated as net present value[4] (NPV) of returns over five years, using a discount rate equal to the average loan yield at each MFI.

ENABLING GROWTH

MFIs can realize substantial financial benefits by increasing the efficiency of their loan officers. Doing so allows their loan officers to spend more time bringing on more clients, thus creating more incremental interest income. However, AM's loan officers do not currently spend much time entering client data into their system, since they have field officer assistants at each branch to assist with data entry. Although some data entry will be reduced for these assistants, significant time savings cannot be attributed to them from the direct use of Mifos, because AM is adding additional social performance data to client profiles and loan applications. Incorporating social performance management into daily operations without lowering loan officer caseload is a substantial benefit, to be sure, but an attempt to quantify this benefit in the ROI analysis has not been made.

With AM's lending methodology, loan officers must only add to their caseload carefully and modestly, because otherwise they could compromise their ability to manage the risk that is necessary when issuing larger individual loans. Loan officers spend most of their time doing risk management and business forecasting with the individual lenders and, as a result, AM has chosen to purposefully restrict caseload growth in favor of growing its pool of loan officers. This is a strategy to expand outreach without compromising the quality of its portfolio.

Although AM will not gain incremental interest income as a direct result of loan officer efficiency gains (from vastly higher caseloads) from using Mifos, it will be appropriate to attribute to Mifos some of the new revenue AM generates as it grows. The prior system did not allow for easy import of data from multiple participating financial institutions, and this limited AM's ability to establish new partnerships for loan repayments in the event that its partnership with Banque Audi dissolved. In fact, in July 2010, this key risk became a reality when Banque Audi severed its relationship with AM. If AM had still been running its legacy Access MIS, it would have experienced a slowdown in loan transaction processing to accept cash payments manually, since that system did not allow for quick and easy integration with new payment channel partners. However, in part because Mifos has allowed AM to integrate quickly with any new partner, AM has easily been able to bring on new partners, such as Liban Post, Western Union, BBAC, and MoneyGram, and to continue business as usual.

As a platform for business continuity and growth, Mifos' benefits go beyond its ability to plug into new partner channels. In addition, the solution has been designed and built to be scalable as MFIs grow, allowing them to accommodate up to 2 million customers (at the time of writing). In stark contrast to an Access-based system, Mifos gives AM the ability to add new staff users, clients, and transactions without risking data corruption or decreasing system performance.

[4] NPV may be defined as "The present value of an investment's future net cash flows minus the initial investment. If positive, the investment should be made (unless an even better investment exists), otherwise it should not." http://www.investorwords.com/3257/Net_Present_Value.html

TABLE 2. GROWTH ATTRIBUTED TO MIFOS: AL MAJMOUA

	YEAR 0 (ACTUAL)	YEAR 1 (PROJECTED)	YEAR 2 (PROJECTED)	YEAR 3 (PROJECTED)	YEAR 4 (PROJECTED)	YEAR 5 (PROJECTED)
Loan officers	83	120	160	210	275	354
Caseloads per officer	254	250	281	290	302	311
Year-over-year growth in loan portfolio		57%	36%	35%	36%	33%
% of total revenue growth attributed to Mifos platform support		**5.7%**	**3.6%**	**3.5%**	**2.6%**	**3.3%**

AM has been able to reach its revenue growth goals in part because Mifos has allowed continuity in operations (e.g., preventing a shutdown with Banque Audi) and in part because the system can handle exponential growth. Without lowering performance, Mifos can handle rapid growth that would otherwise require reducing transactions or increasing head office staff to manually compensate for an unreliable system. While the organic year-over-year growth AM has enjoyed in its loan portfolio should mostly be attributed to management, training, staff performance, and product mix, it is reasonable and conservative to attribute a small percentage of the incremental annual growth to the benefits provided by Mifos.

Based on its 2011 business plan, AM estimated that growth in the number of loan officers would range from 25 percent to 45 percent per year and that caseload would grow fairly modestly, in line with its lending methodology. Our ROI projections have been adjusted to reflect actual loan officer and caseload numbers for 2010, using the business plan projections for later years. To be conservative, we assume no change in average loan size, yield, or number of products per client. As shown in Table 2 below, if we attribute only 10 percent of the year-over-year growth to the continuity and performance benefits of Mifos, this amounts to over 3 million USD in interest income (incremental to organic growth) over five years. For the sake of comparison, in 2012 (Year 2 of the analysis), attributing 10 percent of year-over-year growth to Mifos equates to just 10 incremental loans per loan officer — less than one new loan per month — to the efficiencies and stability provided by the Mifos platform.

PRODUCT DEVELOPMENT

It is essential to an MFI's success that it be able to evolve its product line over time. The ability to roll out new products and do so quickly means not only good customer service, but also the opportunity to capture incremental revenue. In the former, decentralized system at AM, new products were introduced to each branch office through a backup disk sent by courier from the home office each week. This took a lot of time. During that time, no new revenue from those products was produced. With Mifos, however, the rollout is immediate and new products begin to generate revenue right away.

Reporting in the previous system tracked the three basic types of products — group loans in LBP, individual loans in LBP, and individual loans in USD. The rigidity of that system prevented AM from expanding its product offering beyond minor modifications to these three. Mifos now allows the institution to track the individual performance of its specialty products, like home and technology loans, as well. The previous system also slowed its plans to experiment with greater product diversity, which included consideration of an Islamic loan (issued via an Islamic bank, not directly from AM) and a "gold loan" (backed by gold jewelry as collateral). Mifos provides the speed and flexibility necessary to release products such as these in less time and with greater ease.

Prior to Mifos, AM also lacked detailed client profile data that would help it identify product opportunities for specific customer segments. Client profiles in Mifos are expanded from the old system, so AM can capitalize on customer segmentation and tailor its products to specific segments.

Although these benefits are many, only a small portion of them are captured in the ROI analysis. To estimate the value of a faster time to market, we used projections of the number and timing of new products to be introduced (provided by AM) and an estimate of the number of days required to complete the configuration of the new product at all branches. Because new products are not adopted by all customers, we made an assumption about the number of customers who would typically adopt a new product in the first year (again based on the past experience reported by AM). The number of days it takes for a new product to reach customers under the old decentralized system is calculated using this data. Under Mifos, because new products are available immediately upon release, those days are now days that the product is generating incremental revenue. Table 3 below illustrates the projected impact of this acceleration at AM.

REPORTING

Like any financial institution, an MFI must routinely consolidate information and close its books to obtain a picture of the current state of the business. Because MFIs largely operate through branch networks, results from each branch must be calculated and then results from all branches must be consolidated at the head office. This potentially involves significant time each month for branch employees, time that could be spent recruiting new customers or working with existing ones.

TABLE 3. FASTER TIME-TO-MARKET: AL MAJMOUA

	YEAR 0 (ACTUAL)	YEAR 1 (ACTUAL)	YEAR 2 (PROJECTED)	YEAR 3 (PROJECTED)	YEAR 4 (PROJECTED)	YEAR 5 (PROJECTED)
New products to be introduced	1	1	1	1	1	1
Total days delay in product availability when configuring new products in MIS.		15	17	26	31	36
Total incremental revenue from faster time-to-market for new products		**414 USD**	**620 USD**	**840 USD**	**1,146 USD**	**1,519 USD**

Note: Based on AM estimates, only 2 percent of existing clients would take part in a new product, which limits the financial impact of this benefit. As Al Majmoua introduces products that generate a greater number of new loans, the benefits of introducing those products to the market faster will increase.

TABLE 4. LABOR COST SAVINGS IN REPORTING: AL MAJMOUA

	YEAR 0 (ACTUAL)	YEAR 1 (PROJECTED)	YEAR 2 (PROJECTED)	YEAR 3 (PROJECTED)	YEAR 4 (PROJECTED)	YEAR 5 (PROJECTED)
Total annual person-days to compile monthly reports (per branch)	14	14	11	11	11	11
Total annual person-days to compile consolidated monthly reports at head office	10	10	8	8	8	8
Total annual person-days to compile annual reports at head office	18	18	14	14	14	14
Total labor cost saved			**39,725 USD**	**47,478 USD**	**55,232 USD**	**66,088 USD**

Under its previous system, AM relied heavily on Excel, and a significant portion of time was spent preparing Excel reports. Mifos offers numerous report formats that are designed to deliver specific breakouts and summaries requested by the staff. This will save the finance planning manager about a half a day's work each month.

The worst bottleneck in the previous system was the delay in moving financial data manually between the MIS and the accounting system. Disbursements were particularly time consuming for accounting. The automated export of data from Mifos into an accounting system dramatically reduces the time needed to complete this task. AM will begin to see a benefit from this once the accounting system is fully integrated with Mifos, pending the close of all loans in the old MIS system (scheduled for December 2011). Accordingly, the ROI analysis only estimates full reporting impacts beginning in Year 2.

To assess the impact of Mifos, the average number of person-days required to prepare monthly reports at the branches and to consolidate them at the home office is evaluated. The total person-days spent annually on this task across the institution are compared before and after Mifos. A reduction is expected, since Mifos automates and simplifies reporting and eliminates manual data consolidation. Any reduction is reflected in our financial analysis as saved labor cost.

Because reporting requirements evolve over time, we simplify the analysis by assuming (unless interviews indicate otherwise) that reporting requirements immediately following Mifos deployment are the same as before, ignoring changes that might be introduced later. Table 4 below shows the respective changes in reporting effort reported by AM and projected by our analysis.

SYSTEM MAINTENANCE

With decentralized systems of the kind used at AM before Mifos, a technical support person must visit each new branch to set up the MIS. At current growth rates, AM will see a significant expansion of branches in the next few years. Previously, system maintenance and updates to the decentralized MIS required two or three visits to each of the branches by head office support personnel each year. The previous system also required that time be spent producing data CDs for regular shipment to the branches.

All these costs are eliminated with Mifos. Every new branch has access to the MIS as soon as the computers are plugged in, and new products are immediately available at all branches as soon as they are added to Mifos at the head office. No travel or special installation is required. Mifos also eliminates the need for support visits and CDs because it provides access to real-time data across the system.

To estimate the resulting cost savings in staff time and travel expense, we assumed that under normal circumstances technical support staff would have to make one initial visit to each new branch solely to update the MIS, would visit each branch once during the year for routine maintenance, and would visit each branch once a year to configure new products. Using estimates from MFI staff of the number of person-days required to visit all branches, the total cost of staff time is calculated and adjusted for projected growth in the branch network over time. The savings attributable to Mifos is the total of all these costs, which are eliminated with a centralized system.

TABLE 5. COST SAVINGS IN SYSTEM MAINTENANCE: AL MAJMOUA

	CASH IMPACT					
	YEAR 0 (ACTUAL)	**YEAR 1** (PROJECTED)	**YEAR 2** (PROJECTED)	**YEAR 3** (PROJECTED)	**YEAR 4** (PROJECTED)	**YEAR 5** (PROJECTED)
Number of new branches each year	14	16	25	30	35	42
Total person-days to configure MIS at new branch	1	0	0	0	0	0
Total person-days to execute maintenance at each branch	2	0	0	0	0	0
Total person-days to configure new products at each branch	1	0	0	0	0	0
Cost savings from elimination of need to visit branches for maintenance			**30,660 USD**	**36,396 USD**	**42,261 USD**	**50,537 USD**

Note: Because AM is still managing a handful of old loans in its legacy system through Year 1, the full benefits of streamlined branch maintenance will not appear until Year 2.

TABLE 6. RECONCILIATION AND LOSS OF PRODUCTIVITY COSTS: AL MAJMOUA

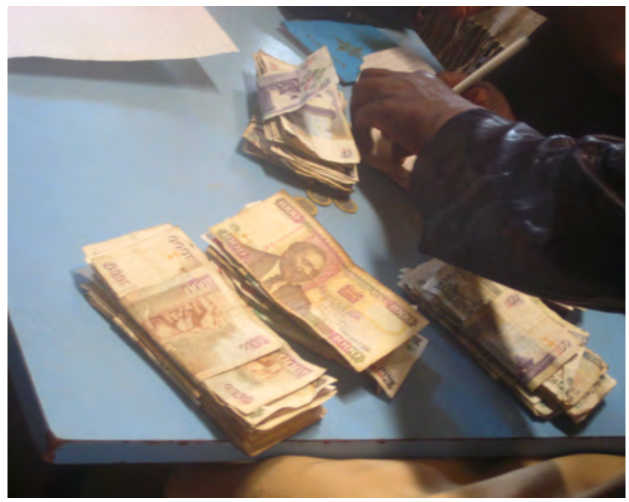
CASH IMPACT	
Creation of 5 custom reports	1,615 USD
Bugs and work-arounds requiring day-to-day monitoring	4,269 USD
Data reconciliation due to bugs in the migration script	11,954 USD
Total cost of lost productivity	**17,838 USD**

PROJECT EXPENSES

Although it comes with no software license fee, Mifos is not free. Mifos certainly helps an MFI reduce costs and increase revenue, but adopting Mifos costs money. To accurately reflect the real financial benefits of Mifos, these costs must be accounted for. The summary financial analyses above itemize all routine expenses such as hardware, connectivity, technical support staff, and training for end users. Throughout, only expenses incremental to Mifos adoption are included. So, for example, if the MFI already had internet connectivity at all branches, we excluded that expense, but if connectivity had to be installed as a condition of supporting Mifos, we included it. In addition, we included a somewhat generous budget for continued feature improvements to Mifos. These may not be necessary, but it is an important premise of the open-source model that an MFI can make these improvements if it so desires, and it is assumed that allowing for that possibility will be a part of any Mifos customer's budgeting.

AM's pilot ended in May 2010, but the institution continued to use its old system in parallel, reconciling its accounting data and keeping its old system in place until the end of the year. Thus, the upfront cost for AM constituted the one-time investment costs in hardware, software, and implementation as well as one-year maintenance costs such as hosting, connectivity, and training.

Throughout the deployment, various project delays occurred that prevented AM from reaping the full benefit of Mifos at the time. Customized reports were



Using the Mifos platform, microfinance institutions can disburse loans at a much faster rate.

not immediately available during the implementation, so AM worked around this by dedicating three staff to creating five custom reports for Mifos. Various bugs during the deployment required day-to-day monitoring of the database, costing AM staff time. The data migration experienced bugs as well, which required four months of tracking to reconcile. Table 6 shows the cost of the delays that were factored into the overall ROI.

NON-FINANCIAL OUTCOMES

In addition to the hard benefits of adopting a solution like Mifos, many of the benefits Mifos provides AM are not financial in nature. They include better customer satisfaction, better risk management, and building a foundation for future innovations.

A critical problem for AM was the inability to quickly and predictably disburse loans. Under their legacy system, liquidity management was quite difficult due to the delays in reporting and the necessary re-entry of data from the MIS to the accounting system. As a result, it often took up to 10 days to disburse a loan. Once the accounting system is fully reconciled with Mifos (scheduled for December 2011), AM expects to triple the speed with which it disburses new loans, from one loan disbursal a week to three. This speed will no doubt contribute to greater customer satisfaction.

As discussed earlier, one of AM's business risks was the single point of failure that its largest payment channel partner, Banque Audi, posed to their operations. Had it lost its partnership with Banque Audi without the ability to immediately integrate with alternate partners, AM's business would have been completely disrupted, harming both AM and its customers. To diversify this risk, AM began partnerships with Liban Post, Western Union, BBAC, and MoneyGram during 2010. Mifos aided in the transition to these new partners through its greater flexibility and ability to automatically integrate new information from the partners into business operations and loan tracking in the MIS. Although the Banque Audi relationship was in fact discontinued in July 2010, Mifos allowed AM to continue operations uninterrupted.

Above all else, Mifos provides AM with a platform for growth. The previous system impeded its growth because it lacked scalability, configurability, reporting functions, and integration with external systems. With Mifos, AM now has a centralized, scalable system that will allow it to grow from 16,000 up to 1 million clients without upgrading to a new system. To defend against lower-priced competition, AM must also target the proper niche markets with the right products. The configurability of Mifos enables it to rapidly deploy and test new products. With improved reporting in Mifos, it is now possible for AM's management to obtain reports that describe the overall performance of the institution, allowing it to identify weak points such as dropouts and client retention problems and address them as they appear. Staff members can also generate reports from anywhere in the organization with real-time data, ensuring more effective follow-up on delinquency and other issues. Mifos also provides AM with the ability to extend to new systems in the future, such as mobile banking, allowing it to more effectively execute on its IT strategy plan.

KEY OBSERVATIONS AND CONCLUSION

The purpose of the Mifos case studies, of which this is one, is to better understand the value Mifos provides MFIs in order to improve the Mifos product and increase the value it can deliver. The effort has been well rewarded, leading to important insights about Mifos and its customers.

As shown in this case study, technology implementation can be costly and complex. It took AM eight months to complete its initial installation, and even after that was done it kept its old system for old loans and reconciliation. The delay in AM's complete switch from the old MIS to Mifos was made necessary by the need for data reconciliation. Indeed, the most time consuming part of an MIS implementation is the data migration. Data migration and reconciliation should be given equal attention with the technology component of the project, including the right strategy and risk mitigation. AM could have had a shorter implementation timeline had enough time been spent up front in planning the data migration's execution and validation.

Project delays can further complicate Mifos deployments, since MFIs experience a loss in productivity when bugs require them to develop work-arounds. A shorter implementation timeline can maximize the value of a deployment for other reasons as well. As the deployment process is stretched out over longer and longer periods of time, more expenses are incurred and additional revenue is delayed. Thus, the return value to the MFI is delayed and diminished. Our recommendation is that once an MFI chooses to deploy Mifos, it move as quickly as possible to begin reaping the platform's full benefits immediately.

As expected with any MIS implementation, AM experienced cost savings in replacing manual reporting with automation, and it gained savings in branch maintenance by choosing a centralized system that can be maintained from one location. However, the true benefits of a strategic technology implementation are those that allow the institution to increase its revenue and/or give it a competitive advantage. AM experienced both of these benefits. By replacing its Access-based MIS system, AM is now able to realize its growth plans backed by a reliable, flexible, and scalable MIS. Furthermore, it is now able to market new products faster and offers better customer services by disbursing loans three times faster than it used to. These last two benefits will help AM remain among the microfinance leaders in Lebanon.

The benefits of a technology can only extend as far as the technology is put into use. In the case of AM, Mifos was urgently needed to protect the institution from an increasing risk of losing its major channel partner, Banque Audi, and at the same time act as a platform for future growth in clients and services. The benefits shown in this analysis reflect only the cost savings and revenue from continued growth as originally planned. In the future, when AM desires to grow exponentially, offer more products to existing customers, better manage its cash, or gather and mine client data for marketing and/or social performance, Mifos will help ensure that it is fully equipped to do so.

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