INFORMATION TECHNOLOGY AS A STRATEGIC TOOL FOR MICROFINANCE IN AFRICA

A Seminar Report

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AfriCap
THE FIRST AFRICAN INVESTMENT FUND FOR COMMERCIAL MICROFINANCE
1ER FONDS AFRICAIN D'INVESTISSEMENT POUR LA MICROFINANCE COMMERCIALE

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Foreword

"How will technology help this industry to reach the millions who are not reached by financial institutions today?"

~ Betty Sabana, AMFI

AfriCap is the first private equity fund focusing on African microfinance institutions with dual objectives: generating a commercial return to its shareholders and promoting the development of a viable microfinance industry in Africa. In seeking to achieve this second objective, AfriCap engages in various activities, including the organization of seminars on topics that are critical to its investees and other leading African MFIs, in order to provide a forum for in-depth discussion of these issues and, possibly, development of solutions, advice and practical tools. This report is the result of the second AfriCap seminar, held in April 2004 in Nairobi..

As AfriCap has worked with several leading MFIs in the region, we realized that many of these MFIs faced various challenges with the implementation of computerized MIS and other technologies aimed at improving scale, outreach, and service quality. In seeking potential solutions, AfriCap participated in a microfinance workshop on "Innovative Technologies in Microfinance for Latin America: Building Effective Delivery Channels," organized in San Jose, Costa Rica, in October 2003 and sponsored by CGAP, ProFund and other partners. That workshop reviewed some of the innovations that were taking place in that part of the world as far as microfinance and IT are concerned and highlighted the need for an inventory of approaches and tools used by African MFIs in making technology a strategic part of their business.

AfriCap was convinced that even though it would be useful to know more about existing technologies used by African MFIs, it was also important to inform these MFIs about other successful and/or newly introduced tools and to reinforce the understanding that IT should be applied in the context of and as an integral part of an institution's strategy.

This seminar organized by AfriCap, with the collaboration of CGAP, convened close to 150 people representing microfinance institutions from several African countries, technology firms serving the microfinance industry, international donors, and microfinance consultants to:

- Increase participants' knowledge, through practical examples, of existing information technologies (IT) used in the microfinance industry in Africa and beyond;
- Encourage African MFIs to view IT as a strategic tool;
- Think ahead on the future of IT for microfinance; and
- Enable optimal interaction and exchange among participants.

This report is a synthesis of presentations made and discussions held during the seminar, and it can be used by institutions and other stakeholders as a tool to understand issues ranging from developing an IT strategy to available technologies and connectivity alternatives. It includes direct quotes from different presenters and participants and also recapitulations of various sessions or discussions on particular themes.

We would like to thank CGAP's Gautam Ivatury and Xavier Reille, MicroSave's David Cracknell and Graham Wright, and E-Change's Laura Frederick for their assistance in designing the seminar and deciding on themes that would best respond to the seminar's objectives. We also thank all the speakers for their contributions, which helped made the seminar a success.

Please feel free to send any comments about this report to AfriCap's Bintou Ka-Niang at bintou@africapfund.com.

I. Executive Summary

Information technology ***can*** be a strategic tool for microfinance in Africa. It can:

- allow more efficient and effective collection, processing and use of data;
- open the door for microfinance institutions to offer new products and better customer service;
- enable greater outreach; and
- facilitate integration with the rest of the financial sector.

Of course, for information technology to do these things, it must be properly applied. Not surprisingly, this question of proper application was the one that dominated discussion during the two-day AfriCap seminar and provided participants with their most useful souvenirs of participation—***specific ideas and tactics for making information technology a strategic tool*** within their institutions.

The relationship between IT and microfinance in Africa is currently evolving. Only about one-third of the MFIs in Africa are computerized, but those that are computerized are increasingly employing other technologies to increase their outreach and/or their profitability. Point-of-sale networks are being developed rapidly all over the continent and appear to offer an attractive return, particularly if they are coupled with credit scoring applications. Palm Pilots (or personal digital assistants), are in use in a growing number of MFIs. The devices typically replicate existing systems for capturing and analyzing data, so they are not a major innovation as far as the customer is concerned, but they can significantly decrease the cost and increase the speed and accuracy of information processing, which has an important impact on portfolio quality.

Smart cards, credit cards and debit cards are another popular technology being applied by MFIs with very good results. A handful of institutions are even using them to process micro-loans. ATM networks are being rolled out by a number of banks and have been tested by a handful of microfinance institutions as well. The networking of branches is quickly becoming a requirement in the industry, although there are still a number of challenges. Fixed telecommunication lines are generally of poor quality, especially outside the capital city. VSAT bandwidth is expensive and limited and, in some countries, heavily regulated. Line-of-sight systems are gradually becoming available. Mobile technology and the financial services that can be delivered through it probably have the most potential in Africa. The market is already huge, with more than 40 million users to date in locations as diverse as Nigeria, Kenya, South Africa and Zambia. The difficulty with this delivery channel is the cash part of the operation and being able to get beyond simple financial transactions.

In addition to the obstacles mentioned above, the microfinance industry faces other challenges with respect to the application of IT, namely:

- speeding up the flow of information;
- introducing systems that enable institutions to adequately analyze their loan portfolio and produce reports that facilitate timely and appropriate decision making;
- overcoming the disparity between those who have access to information and communication technology and those who do not;
- making IT solutions affordable;
- appropriately staffing the IT function within MFIs;
- building strong relationships with vendors;
- setting realistic expectations with respect to what technology will do and cost;
- managing the nature and pace of change associated with IT solutions;
- removing legal and regulatory constraints that impede an MFI's ability to implement strategic IT solutions; and finally,
- convincing those who have successfully introduced new technologies to share with those who have not.

Given these challenges, 24 recommendations were made for making IT a more strategic tool within their MFIs, each of which is explored in more detail in the body of the report:

1. Know where you want your business to go
2. Inform your decisions with research, testing and ongoing feedback
3. Define what the technology should do, not how it should work
4. Build a business case for the role of IT in your institution
5. Design for "should be" not as is
6. Prioritize
7. Don't be afraid to say, "NO"
8. Don't leave key IT decisions to the technicians
9. View IT projects as business change projects
10. Get top level commitment
11. Don't isolate IT
12. Think first, act second
13. Have a process through which you identify, introduce and manage the implementation of your IT solutions
14. Involve users early and regularly
15. Apply project management best practice
16. Have clear, measurable objectives
17. Set realistic expectations
18. Test
19. Learn from others
20. Communicate
21. Make sure people will be able to use your technology solution
22. Collaborate
23. Look for partners, not vendors
24. Make sure everyone benefits, especially your customer.

Much of the attraction of information technology is its potential to facilitate growth within the microfinance industry. The driver behind the projected expansion is the creation of new types of access points, some of which are already being used by MFIs, while others are still under development or are only recently being tested. MFIs can use these new access point options to give customers more convenient and flexible access to financial information and services. Rather than focusing on one particular delivery channel, they can use IT to integrate several delivery channels, to increase contact with the customer, and to offer clients a wider range of access choices. Manned ATMs and agent-operated POS devices are just two examples of the innovation possibilities.

Another area of promising technological innovation lies in the area of connectivity—in the connections and communications between branches, institutions and technology devices. In the past, most MFIs assumed that they could not use IT to reach rural areas because the infrastructure simply did not exist. That situation is rapidly changing in many African countries due, in particular, to the connectivity options made possible through expanding mobile networks. Infrastructure is expanding and the cost of accessing it is falling, which opens up exciting opportunities for MFIs. Institutions are no longer stuck using a distributed model in which individual sites or branches manage their own technology without being connected in any way. Today, branches can be connected with each other, and to a range of applications and services that are provided outside an institution's own infrastructure.

In choosing an appropriate technology, it is highly recommended that MFIs get their core MIS right first before building any kind of delivery system on top of it. Although the core MIS is widely considered to be the central nervous system of an MFI, it is often one of the weakest components of an institution. Thus, for many MFIs, the most strategic application of technology will be to strengthen their core MIS. How can an MFI know what to strengthen, or if it thinks its MIS is reliable, how can it discern which other technologies might be usefully introduced? MFIs should begin by defining where it is they want to go and what they need in order to get there. Looking at a list of technology options and selecting the one that seems to be most exotic or "cutting edge" is not the best way to start. Rather an institution should:

1. know its business objectives;
2. research its needs, options, available resources and current environment;
3. define its priorities and limitations; and then
4. select the technology that can best meet its highest priority need given its limitations.

Selecting an appropriate technology is essentially a process of defining what an institution's priority needs are and then choosing the technology (or technologies) that can best help meet those needs. The specific technology chosen will, of course, be dependent on its feasibility in the current environment and the cost relative to other available options that also meet the need.

Once a particular type of technology or technological solution is chosen, there are three other questions that tend to challenge MFIs:

1. should they implement the technology themselves or outsource it;
2. should they implement a proprietary solution or collaborate with others to create a shared solution; and
3. from which vendor should they buy their technology or technological service?

Historically, it was the norm for MFIs to do things themselves, but institutions are moving away from this as their product offerings become more diverse. Internally developed systems offer flexibility to make changes to source code, but they are often designed with much less flexibility than full banking systems. In deciding whether to build a solution in-house or to outsource its development to an external entity or partner, MFIs should choose the option that gives them the most cost effective access to their chosen IT solution. The issue is not one of ownership; it is one of access. What kind of quality can be obtained for what kind of price? If an MFI can get more for less by outsourcing, why pursue in-house development? This seems particularly true with connectivity solutions.

Although owning one's own solution is often considered to be simpler and more strategic in terms of gaining competitive advantage, the benefits of sharing are significant and offer exciting opportunities to MFIs looking toward the future. By sharing solutions, MFIs can :

- reduce the need to buy, maintain, and upgrade in-house hardware that is needed to run modern systems,
- access the latest versions of software any time without the need for costly site-by-site in-house upgrades, changes and system administration, and
- launch new products and services faster and bring on more users from remote offices quickly.

Shared solutions may not have been a popular strategy in the past, but today they offer individual MFIs a realistic, cost effective and often less risky way to implement IT.

Finally, how does an MFI decide from whom to buy its technology inputs? In choosing a vendor, an MFI should:

- make sure that it has complete requirements and specifications before it goes out shopping,
- check to see how each vendor's product matches up with the list of things it needs,
- match the size of its organization with the size of the vendor. A one-branch MFI should not contract the largest supplier of microfinance software in the world. If it does, it will not get the support it requires,
- carry out site visits to see each vendor's product in action and to explore the quality of the vendors' post-purchase service,
- make sure that the agreed-upon level of support is specified in writing in its service level agreement,
- consider lifetime costs, not just acquisition costs,
- look for a management team that is compatible with its own, and
- select a vendor that pays attention to R&D.

In summary, the message conveyed through seminar is that information technology does have the potential to transform the microfinance industry, but whether this actually happens will depend on a number of factors, namely the extent to which MFIs take advantage of the opportunities that IT provides and integrate information technology into an overall business strategy that is creative, collaborative and keenly focused on clients' needs.

One conclusion that emerged clearly from the seminar is that MFIs cannot do it alone. Partnerships are going to be key, and stakeholders must build and share open infrastructure. There is a need for further research into the development and application of more appropriate technologies for the market microfinance is trying to reach. Hardware products, services, distribution channels, and business models have to be reinvented in order to develop appropriate, affordable, and relevant solutions for more than just the top thin layer of the microfinance market. There is a great deal of regulatory work to be done to make the deployment of new technologies feasible and fast. Critically, investments in staff and capacity will also be required in order for technologies to be implemented and utilized to their potential. MFIs would benefit from having more opportunities to learn from each other, more guidance on technology usage, and clearer metrics and criteria for comparing technology options.

If all this is done, technology might just transform microfinance in Africa as we know it today. The seminar clearly demonstrated that the technology promise is real and the microfinance industry is keen to test it. The challenge now is to put the ideas, strategies and approaches that were identified during the seminar into practice and to see if technology's promise can be kept.

Seminar Speakers and Organizers

II. The Strategic Potential of IT

"Technologies cannot make good institutions, but they can make good institutions better."

~ Hany Assad, IFC

"Banks will be in the information and knowledge business or they will be out of business."

~ K. Altinkemer, Bundling E-Banking Services

"Organizations pertaining to an information industry derive their ability to create and sustain competitive advantages as well as generate stakeholder value from their capacity to process, disseminate and analyze information effectively and efficiently. Information technology is therefore a strategic asset for microfinance institutions at every stage in their business cycle."

~ Alex Silva, PROFUND

"Technology in and of itself is not the goal. Our goal is to provide financial services to the poor. So how can ITC help us achieve that goal? It varies from country to country depending on your context, your capacities, your regulatory environment. What is strategic for one organization is not necessarily strategic for another."

~ Laura Frederick, Echange

Can information technology be a strategic tool for microfinance in Africa? The simple answer is "yes," but when, how, to what extent, and under what conditions? These are the questions that participants endeavored to answer throughout the seminar. They began by considering the *potential* of information technology. In what ways *might* it be strategic? Could it really transform microfinance as we know it in Africa today?

Hany Assaad launched this discussion by introducing what he called, "the technology promise." Building on his original concept with contributions made by other presenters, the technology promise can be summarized as follows:

The Technology Promise

When properly applied, technology:

- Allows more efficient and effective collection, processing and use of data;
- Opens the door for MFIs to offer new products and better customer service;
- Enables greater outreach; and
- Facilitates integration with the rest of the financial sector.

Each element of this promise is briefly discussed below.

Managing Information

Technology makes it possible for MFIs to collect more information—and more accurate information—faster. It enables institutions to process and store that information more quickly, more neatly and more reliably than with manual systems. It also facilitates the ease and speed of information *flow*, significantly improving communication both within the institution and externally. As a result, more people can have better, faster access to more and hopefully more relevant information.

The enhanced ability to collect, organize and analyze information helps institutions to better understand their customers, their costs, and their options.
They can then use this information to:

- make better decisions about strategy, objectives and priorities;
- monitor and test performance;
- learn from the methodologies and techniques being applied by the institution; and
- make timely adjustments.

It becomes easier for the institution to identify areas of inefficiency and to reengineer business processes as necessary to make them more effective in contributing to the achievement of the MFI's objectives.

As AfriCap's Wagane Diouf stated, "The real-time access to comprehensive management information enhances the quality and timing of decision-making and provides a multidimensional view of the business that is focused on your clients rather than functional silos (such as accounting, finance or loan management). This ability, in turn, enables the organization to manage risk and implement dynamic strategic feedback and performance management systems."

In sum, improved information management enables MFIs to increase their efficiency—in terms of increased speed, greater volume or lower costs—as well as their effectiveness in achieving their objectives.

Delivering More Valuable Solutions to Customer Needs

With more, better and faster information, MFIs are in a stronger position to deliver products and services that customers value. They can use their enhanced understanding of customers' evolving needs to improve existing products and/or to develop new ones. They can adjust certain product features, alter the way in which a product is marketed, or improve the care and service with which the product is delivered. They can design new products to meet the needs of new markets, the newly identified needs of existing markets, or the particular needs of individual market segments.

By organizing and analyzing the huge volumes of data that are collected during a client's relationship with an MFI, information technology makes market segmentation possible. MFIs can divide their target market into groups, or segments, which have certain characteristics in common. Then, instead of trying to deliver the same products in the same way to everyone, institutions can explore the requirements, desires and preferences of specific customer groups and design products and services and delivery channels that more closely match customer needs and priorities. Different pricing packages can be established for different customer usage patterns. All this makes an MFI's products and services more valuable to clients.

MFIs can also use information technology to actually deliver new solutions or to enhance product features that customers most value, for example, easier access to a product or service. As David Cracknell and Wagane Diouf noted, one of the advantages of electronic banking is that it offers greater accessibility to financial services. MFIs can develop affordable branchless banking solutions and alternative delivery channels that reduce wait time in queues and at counters and enhance the customer experience. With improved connectivity and interoperability, MFIs can begin to offer customers multiple access points, perhaps even using other people's networks, as has happened in South Africa.

Cracknell probably summarized this aspect of the technology promise best when he said, "IT increases your ability to adapt to the changes in your environment and to adapt to the changing needs of your clients."

Improving Outreach

The efficiencies gained through better information management and the redesign of products and services frees up resources for MFIs to use elsewhere. They can pass the efficiency benefits onto

clients through lower prices, which would make their services more affordable to poorer customers. They can open new offices or access points to reach a larger number of customers or geographic regions. Alternatively, they can use the freed up resources to develop new products or new delivery mechanisms that enable the institution to serve people or places that it could not serve before.

> *"I remember Equity Building Society telling us that they invested quite a lot of resources into getting their MIS right and they were able to grow because they were able to manage their data; they could track performance across the country, etc."*
>
> ~ Betty Sabana, AMFI

Indeed, in addition to freeing up resources, information technology can be part of an MFI's outreach solution. Whereas the cost of delivering financial services in rural areas may have previously been prohibitive, IT may make it affordable. It can do this in four ways:

1. ***By increasing staff productivity.*** Improved information systems, credit scoring, battery operated hand-held computers and other technologies can make it possible for individual employees to serve more customers and for managers to either supervise more staff or improve the quality of supervision and support provided to existing staff. As a result, the institution can achieve greater economies of scale and do so more quickly than before.

2. ***By reducing transaction costs***. Technologies such as wireless devices, electronic payment systems, and credit scoring can enable MFIs to complete transactions at a lower cost than before, thus making it possible for retail outlets or remote units to break-even faster.

3. ***By removing physical asset barriers to growth***. With technology, MFIs can create alternative delivery channels or delivery mechanisms that make it possible to reach clients without necessarily having to rely on brick and mortar infrastructure, i.e. on buildings and offices. This physical infrastructure is costly to acquire and maintain, and the significant investment required to create each individual access point typically restricts growth. Although capital investments are also required for IT infrastructure, those investments tend to be intense during initial design and installation, with much lower costs for adding individual access points. This facilitates growth and, again, greater economies of scale.

4. ***By increasing the range of access point options***. MFIs can choose from a growing number of options for reaching their customers, including ATMs, retail agents equipped with POS devices, Internet kiosks, etc. They can select the option or multiple options that can provide the best outreach for their particular needs at the lowest cost. MFIs can also choose whether to rent someone else's infrastructure or to build and own their own. By borrowing and building on the resources of others, their growth is less limited by their own internal human resource capacity and fixed asset budget.

Together, the improved efficiency, lower costs, and higher productivity will enable MFIs to grow faster, further and deeper than was possible without IT.

Box 1: What a Difference a Little IT Can Make!

In the year 2000, Equity Building Society had 40,000 accounts. Everything was done manually, growth was slow and profitability was marginal. In that year, Equity installed its first IT system, Bank 2000, and within one year, its total number of accounts rose to 100,000 and its ability to process accounts tripled. It was doing two or three times the business as before without increasing its staff. With manual systems, there had been a physical limit to the number of people they could serve, but that limit was burst by technology.

As Equity gradually developed and refined its system, particularly user interaction with the system, they were able to significantly increase staff productivity. Early on, they saw that a teller may have been doing 100 transactions per day and they thought that was good because it was already a 100% improvement over 50 transactions or whatever they could manage before, but then they saw that some tellers were doing 300 transaction a day, so they looked at why. They began to manage their expectations, and their IT system helped them do that. IT is a tool, and you have to get what you can out of the tool. Just having it won't make a difference.

~ David Cracknell, MicroSave

Facilitating Integration

Technology can help find practical solutions to making partnerships work. On the one hand, it can help solve the technical problems of connecting different individuals and institutions, system compatibility, security, meeting regulatory requirements, and designing applications that enable the sharing of relevant, timely information. On the other hand, it can make the idea of integration more attractive. The proper application of mainstream IT solutions can increase confidence in a partner's ability to share information, lend credibility to the quality of data that will be shared, convey an image of organization, sophistication or a "cutting edge" approach to operations, and generate confidence in the partner's ability to manage risk. Both sides of the coin are important in enabling MFIs, and the microfinance industry in general, to forge the kind of partnerships that allow the design, delivery and financing of solutions which meet MFI objectives and facilitate the economic development of individuals, communities, and nations.

The Bottom Line

The assumption underlying the technology promise is that although IT requires significant upfront investments, it can lower an institution's costs over time by making it more productive and efficient, and by enabling it to more effectively meet the needs of its market. Is this a realistic assumption? Judging by the initial success of some MFIs, one might be cautiously optimistic (see Box 1).

However, the strategic application of information technology is not easy. Citing a study by Darwin Magazine, Laura Frederick noted that 30% of all IT projects are outright failures—a statistic that refers to a range of industries, not just finance. The challenges need to be considered, along with various strategies for success, before returning in the concluding section of this document to the issue of technology's promise and the question of whether IT can really transform microfinance as we know it in Africa today.

Can an MFI Succeed without IT?

Whether or not information technology transforms the microfinance industry, its impact on individual institutions has been, and will continue to be, great. As Alex Silva noted, "If you don't have a good IT system you will probably not prosper. You will not grow. You will not develop the full potential of your institution." Simon Kagugube from Centenary Rural Development Bank in Uganda challenged Silva, "Isn't it true that some MFI operations have grown in spite of IT, and that good operations often

find that they are compelled to deal with IT because it is there and it is the "in thing," but then struggle to maintain proper and successful operations while at the same time adopting IT solutions? Those institutions that work very hard may grow, but in many cases, perhaps most, you find that the promised efficiency barely or rarely comes."

Silva responded, "IT can be a basic PC computer and maybe an Excel spreadsheet, and perhaps that is all you need. I'm not suggesting that you go further. All I'm saying is that successful institutions—those that have managed to go beyond 30,000 clients—have not been able to do it without a lot more IT than that. Where is the equilibrium? Where do you draw the line? There is no one answer to that question. It depends. It depends a lot on your institution, your environment, your competition, the fundamentals in your country, etc. Having said that, if your competitor is offering a debit card to your clients and you are not, you risk not having clients left, assuming that institution is charging clients the same rate and offering the same or better service. And that is something that is true not only for MFIs, but in general. If a better product comes along and you are not offering it, you run the risk of becoming obsolete."

Laura Frederick echoed his remarks, "As soon as one of your competitors begins to use IT strategically, the marketplace has changed. For you to be able to stay in that marketplace and not lose market share, but rather gain it, requires that you move strategically as well." David Cracknell argued that the use of IT is rapidly becoming a hygiene factor – something you simply have to do to be able to stay in business. "Sometimes, if you're in a competitive environment, your IT choices are taken away from you. It is no longer a situation of introducing technology to corner a share of the market, but rather, if you don't have it you lose. ATMs, for example, are quickly becoming a 'must have' for East African banks."

Does that mean that all MFIs must introduce ATMs? No. But they might want to think about it, and they should certainly be aware that IT is entering the marketplace, which will affect the way MFIs compete in the future.

Silva later continued, "There is definitely a correlation between success and use of IT, but it exists only up to a point. There is no guarantee that introducing IT solutions will improve your operation. It can help a good operation to be better but very seldom have I seen a lousy operation get better by introducing IT. This makes a lot of sense, but yet sometimes when people are in a bind they think that there's a magic IT wand that they can wave, or that they can bring in an IT expert and somehow fix everything. It doesn't work that way."

Hany Assaad affirmed Silva's point, "It is not a simple solution for everything. IT cannot compensate for a low level of financial sophistication. It cannot increase the competency of staff. It cannot overcome weak business processes or lack of standards, and it does not offset a lack of technical knowledge. So if you do not have staff that know technology, adding more technology will not simplify things."

Perhaps what the presenters were collectively trying to stress was the first phrase of the technology promise, "When properly applied…." Information technology may prove to be a very strategic tool for microfinance in Africa, but only when properly applied. Sections four, five and six of this report provide some ideas and practical examples to guide the strategic application of IT by MFIs, but first, section three takes a brief look at the current status and challenges facing the industry in this area.

III. IT and Microfinance Today

"Only 36% of African MFIs have computerized MIS. Only 34% of African microfinance managers are happy with their MIS systems. It takes an average of 13.5 days after month's end for African MFIs to get full reporting back to headquarters."

~ CGAP

"The experience that MFIs have had over the last five years has been a nightmare. We have had harrowing stories of institutions throwing up their hands and saying, we better just go back to the manual system."

~ Betty Sabana, AMFI

"Without exception, those institutions that are growing – the really successful ones – in addition to doing a good job in many other areas, are also investing heavily in IT."

~ Alex Silva, PROFUND

"There's more innovation going on in Africa and particularly in East Africa on delivery systems than pretty much anywhere else in the world."

~ Elizabeth Littlefield, CGAP

Information technology may have the potential to be a strategic tool for the microfinance industry, but is it fulfilling that role today? This section of the report seeks to answer that question as it explores the current relationship between IT and microfinance. It comments first upon the evolving role of microfinance within the larger financial system. It then briefly describes the current application of technology by MFIs today, and it concludes with a presentation of some of the key challenges that institutions are facing with respect to IT and its application.

The Integration of Microfinance

In her keynote speech on the opening day of the seminar, Elizabeth Littlefield articulated one of the seminar's main discussion threads, "The integration of microfinance with the financial sector is happening all around us and technology will be the enabler behind much of this integration." A summary of her comments around this theme are presented below.

The borders of microfinance are blurring and there is a beginning of understanding that microfinance really **is** the financial system in countries where the majority is poor and that all kinds of mainstream institutions can and must be involved in delivering the wide range of financial service the poor need and will pay for. The different needs of different populations of poor people require a whole collage of overlapping delivery channels and institutions, competing and collaborating. This includes credit unions, cooperatives, consumer credit financiers, financial NGOs, rural banks and postal banks. Every kind of institution needs to be invited in and recruited to serve the very different kinds of needs of poor people in developing countries.

Each country will have a different collage and different types of institutions will cover their own natural market niche. However, three main models of microfinance can be identified as emerging across the world. First, there's the model of those countries that have big markets in very important places that oddly enough have had almost no microfinance of a classical sort going on for the last 20 years. They have had small institutions and their own government operations, but they have had very little classic microfinance. These countries tend to be the middle income markets (e.g., Brazil, India, and South Africa) and it is thought that with the use of technology, existing infrastructure and their inherent retail orientation, they have the potential to leap right over what has been done for the last 20

years in the classic microfinance markets. These are seen as the source of most of the growth in the global industry in the next five years.

The second type of market is the classic microfinance market, including Kenya, the Philippines and Bolivia. There is an increasing real split in these markets where the leaders—the top 10, 20, maybe 50 institutions—are making very good progress, and the other three or four thousand institutions aren't doing very much, aren't growing, aren't getting more efficient, aren't improving their client service. Amongst the leaders, profitability and pretty solid growth can bee seen. In fact, in countries where there is a leading MFI, that institution is often more profitable than the most profitable bank. More diverse products and more of a focus on improved customer service can also be seen, but even amongst the leaders, a lot of work remains to be done. Growth rates are very uneven, efficiency (in terms of average operating expense ratio) seems to hover around the mid 30's percentage level for African MFIs, and the rural areas remain the biggest challenge. Getting microfinance services to sparsely populated areas is the real nut that has yet to be cracked; hopefully, technology will help to crack it.

The third type of market has huge demand, significant built up infrastructure and high domestic liquidity, but neither the existing financial institutions nor MFIs are reaching even a small percentage of the poor. In Nigeria, there has not even been 2% penetration. In Turkey, not even 3 or 4% penetration. In China, it is less than 1%. So there are some very big markets out there that remain enormous opportunities upon which technology could have a huge impact.

The common theme that can be seen in most places today, and the real driver behind the projected expansion, is the exponential growth of access points. Institutions are breaking out of the traditional mold and freeing themselves from the "build it branch by branch" straight jacket. This has already had a major impact on microfinance and will have an even greater one in the years to come.

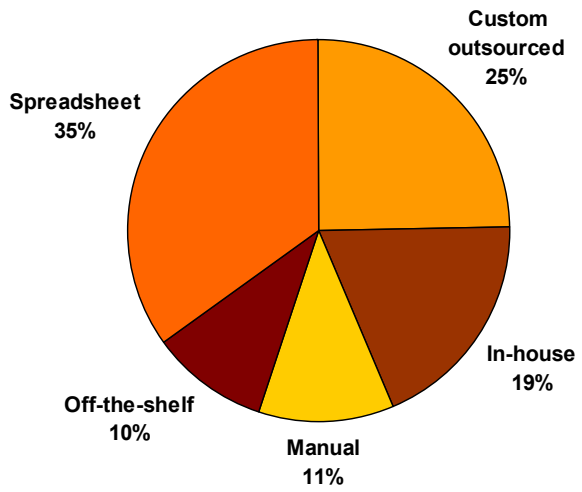
Institutions that were previously very odd bedfellows seem to be combining forces in a way that has significant impact. The most vibrant partnering thus far seems to have been between MFIs and commercial banks. As the culture and mentality divide between MFIs (who used to be the "good guys") and banks (who used to be the "bad guys") seems to be eroding, these two types of institutions are joining forces all over the world to take advantage of one another's comparative advantage. Typically, one institution brings infrastructure and a certain category of knowledge and the other institution brings client relationships and an understanding of low-income customers—another category of knowledge. CGAP already knows of 62 linkages between banks and MFIs in 36 countries.

These partnerships have been a very important feature on the microfinance landscape in the last couple of years, yet the integration of poor people's finance is not just happening with financial institutions. It is also happening with the rest of the supporting institutions that make up the financial and private sectors. State banks in certain countries like Brazil are linking up with lottery agents to use the agents as points of sale. Commercial banks are linking up with informal traders and processors to turn them into distribution networks. Unregulated MFIs are reporting to national credit bureaus in Peru. Twelve rating agencies rate MFIs, including mainstream companies such as Standard & Poors and Moodys. Even governments now are seeing microfinance as an integral part of the financial sector and are partnering with them to facilitate the extension of financial services into poor and remote communities.

What Technologies are MFIs using?

To get a sense of current technology use by MFIs, CGAP conducted a survey of 150 MFIs globally, 45 of which were African institutions. In terms of information systems, the survey found that only about one-third of the MFIs in Southeast Asia and Africa are computerized, compared to more than three-quarters of the MFIs in Latin America, Eastern Europe and Central Asia. Worldwide, 46% of MFIs still have very low-tech systems, either manual or spreadsheet-based MIS. The remaining 56% have

Figure 1: MIS Technologies Employed Worldwide



more advanced systems, either custom outsourced systems (24% of the institutions surveyed), systems built in-house (20%), or applications purchased off the shelf (10%).

Although the CGAP survey did not look at delivery systems, many seminar participants noted that banks, MFIs and cooperatives all recognize the need for more types of delivery channels, particularly in order to reach the rural un-banked.[1] Point-of-sale (POS) networks are being developed rapidly all over the continent and have already been rolled out in South Africa and Nigeria. According to David Cracknell, POS techniques offer a very attractive return, particularly if they're coupled with credit scoring applications. Not only do they increase the efficiency of the institutions and thus reduce costs, but they also allow institutions to increase the quality of their portfolio.

Palm Pilots, or Personal Digital Assistants (PDAs), are in use in a growing number of MFIs, for example, in Mexico and Ecuador. Institutions use the devices to capture and analyze data, particularly loan application information. In general, they replicate existing systems, just making them quicker and easier, so they are not a major innovation as far as the customer is concerned. However, some MFIs have found that they significantly decrease the cost and increase the speed and accuracy of information processing, which has an important impact on portfolio quality. Other applications of the PDA-based model have not generated cost savings or productivity, usually due to technology shortcomings and the lack of organizational support. Institutions sometimes assume that the technology is the right solution to their problem without figuring out what their clients want or what would be needed to get the MFI's system itself to work properly.

Smart cards, credit cards and debit cards are another popular technology being applied by MFIs. Debit cards and smart cards are being used throughout Latin America with very good results. A handful of institutions are even using them to process their micro-loans. In Paraguay, the MFI Vision is the largest issuer of VISA credit cards in that country. In Africa, smart cards are being used at CRDB Bank in Tanzania. Furthermore, the Central Africa Building Society in Zimbabwe has hundreds of thousands of debit card users; and the "Value Card" debit card has 350,000 users in Nigeria. In most emerging markets, however, the basic infrastructure does not yet exist to handle the smart card technology, especially in rural villages, so the applicability of the solution is still limited.

ATM networks are being rolled out by a number of banks and have been tested by a handful of microfinance institutions as well. MFI clients in the Dominican Republic can even access international ATM networks. In Bolivia, PRODEM has incorporated biometrics and interactive voice recognition into its ATMs, so there is no need for the user to know how to read and write. The major challenges revolve around cost and rural outreach. A solution could be to develop battery-operated machines that can work in rural areas.

The networking of branches is quickly becoming a requirement in the industry, but there are still a number of challenges. Fixed telecommunication lines are generally of poor quality, especially outside the capital city. VSAT bandwidth is expensive, limited and, in some countries like Kenya, heavily regulated. Line-of-sight systems are gradually rolling out.

[1] See section three for more detailed descriptions of these technologies.

Mobile technology and the financial services that can be delivered through it probably have the most potential in Africa. The market is already huge, with more than 40 million users to date in locations as diverse as Nigeria, Kenya, South Africa and Zambia. The difficulty with this delivery channel is the cash part of the operation and being able to get beyond simple financial transactions.

The Current Challenges

The IT challenges faced by the microfinance industry are numerous and seminar participants did not attempt to develop an exhaustive list, but those that were discussed during the course of the event are noted below.

Speeding Up the Flow of Information

High quality, timely and reliable information is essential to MFI performance, growth, internal control, portfolio quality, asset management, and liquidity management. Yet in terms of information flow, MFIs in sub-Saharan Africa seem to be facing greater challenges than elsewhere. According to the previously mentioned CGAP survey, it takes 8.4 days on average for African MFIs to know of a delinquency problem vs. two days in Latin America; and only about a third of African MFIs can predict their cash flow beyond one month, compared to about three-quarters in Latin America.

Analyzing the Loan Portfolio

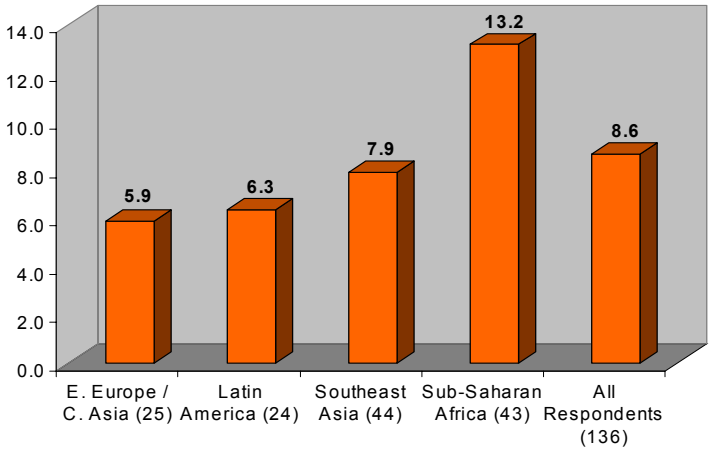
Some banking information systems fail to adequately report loan portfolio quality, which is core to MFI business. Either they make incorrect calculations or they are unable to track changes in responsibility for a loan portfolio (for example, if a loan officers are rotated, the system does not track the history of who has worked with a particular client or group over time). If a new loan officer is given a poorly performing portfolio because he or she is good at fixing problems, that officer must inherit the poor performance of the portfolio as his or her own, which is a significant impediment to the design of appropriate staff incentive schemes.

Reporting

Reporting is often a serious weakness of current information systems, given that managers must make decisions based on reports. The weakness is sometimes caused by system inadequacies, sometimes by a lack of familiarity with the report writing software, and often by a lack of thought by management in terms of what information they actually need and how they will use it. There is limited experience with exception reporting, for example, in which reports identify performance outside an acceptable range and help managers focus quickly on managing the problems.

It seems that MFI staff generally accept what they are given by the IT department, which is not necessarily what they need. In some institutions, the problem is one of too many reports. Rather than send customized reports to different levels of the organization as appropriate, everyone is sent everything, which makes it difficult to extract strategic value from the information. In Africa, one of the most serious reporting challenges is speed. According to the CGAP survey, it takes an average of 13 days after month end until reporting is complete at a typical MFI head office (compared with 7.9 days for Southeast Asia, 6.3 days for Latin America and 5.9 days

Figure 2: Average # of days before reporting is complete at head office



for Eastern Europe and Central Asia). Such delays make timely, well-informed decision-making and rapid follow up impossible.

Overcoming the Digital Divide

The digital divide is the disparity between those who have access to information and communication technology, and those who do not. In the developing world, a computer is a luxury, and even phone lines and electricity are not always available. According to Hany Assaad, while the average OECD country has approximately 11 times the per capita income of a South Asian country, it has 1,036 times as many Internet hosts, 40 times as many computers, and 146 times as many mobile phones. For MFIs to realize the potential of IT and enable their low-income clients to do the same, this digital divide will have to be overcome.

Cost

Related to the challenge of overcoming the digital divide is the issue of cost. Most IT solutions are not affordable to the vast majority of MFIs and, although technology costs are falling, many fear that IT solutions will only ever be affordable to larger institutions. Since the majority of African MFIs serve less than 5,000 people, will they ever be able to benefit from the technology promise?

Staffing IT Development

Next to cost, staffing and skill issues were the most commonly raised challenges hindering the development of appropriate IT solutions in Africa. Many MFIs argued that they cannot attract high caliber IT staff, either because of a shortage of available professionals with the requisite skill or because they cannot afford to pay available professionals a competitive salary. As a result, many institutions lack the technical skills to properly evaluate and negotiate IT contracts. Institutions end up relying on expensive external advisors and/or are not able to provide adequate staff support within the institution both during and after implementation. This can significantly impede system uptake.

Limited project management skills and analytical experience can also inhibit the IT development process. MFI systems staff, even if they have a core level of technical skill, may never have been trained in the methods and techniques for introducing an IT system. If they have never been through that experience before, they will be on a steep learning curve, and the quality of the IT strategy can be affected. Often, there is insufficient analysis before a solution is introduced and questionable procurement decisions are taken because staff are too easily influenced by vendors that know the system and can easily manipulate inexperienced buyers who do not know what they are looking for.

Poor Vendor Relationships

Made possible in part by the lack of skill and/or experience among IT staff in many MFIs, vendors have been able to over-promise and under-deliver in their relationships with microfinance institutions. MFIs have become disenchanted, frustrated, intimidated and, in some cases, angry about their experiences. Speaking on behalf of the many members of the AMFI network in Kenya, Betty Sabana commented, "The IT service providers and the vendors have taken advantage of the pressure and the ignorance in the industry to make a quick kill. MFIs feel they are being used as testing grounds for new software. Vendors come in with hard sell tactics and give wonderful stories about how well their system is working, but once it is installed, then MFIs realize they have been taken for a ride." She pleaded with vendors, "Let us work together. You have to make profits, but make responsible profits. Don't use MFIs as a dumping ground for systems that don't work. MFIs don't want cut and paste quick fix measures, but rather integrated and sustainable solutions. It's a big challenge and there is business for everyone." Building strong and productive relationships between vendors and MFIs will be a particular challenge in those environments where past experience has been negative.

Box 2: The Challenges of Selecting and Implementing a Management Information System: The Case of K-Rep Bank, Kenya

K-Rep Bank is a fully licensed commercial bank, established in December 1999, which provides loans, savings and other financial services to low income entrepreneurs and households. It has two basic information systems: BankersRealm, which provides the core banking system and general ledger functionality, and BankersRealm MFO, which is tailored to its microfinance operations. Putting these systems into place presented challenges in two main areas: 1) selecting the right system; and 2) implementing the system.

In terms of selection, an early challenge was finding a system that could accommodate the fact that K-Rep operates as both a commercial bank and an MFI. Although solutions were limited, there were a wide variety of vendors out there and they were selling solutions that ranged from smart cards to ATMs to hand-held devices, which made it difficult to know what to choose.

A second challenge was gaining management buy in. IT projects are costly and the return on investment may not be obvious given that it usually takes years, not months, for projects to realize their worth. These projects have to compete with the needs of many other departments which can more easily show a return on investment over a short period of time. To get management support, IT objectives and returns had to be explained in a way that conservative, risk averse bankers can understand.

The capacity of IT personnel was also a big challenge. The bank's IT department was thinly spread, so its ability to identify viable IT solutions was limited and it had to rely a lot on vendors. This can be risky if vendors are not interested in a long-term relationship.

Finally, in terms of culture, K-Rep had to consider whether its customers would be able to trust the technology it was looking at. Is it transparent? Is it tangible? Customers may not appreciate some of the options that are available.

Of course, for an IT solution to be successful it is not enough to select the right system. The system also has to be implemented in a way that enables users to use it as it was intended. The only way a person will be able to use the system is if he or she understands it, so training becomes critical. It is easy to underestimate what it takes to manage this process well.

One of the reasons K-Rep chose the system it did was the option to customize it. In retrospect, this may not have been an advantage because it allowed the bank to focus on tailoring its information system to fit existing business processes rather than looking first at the business processes themselves and making sure they were the right processes and were functioning as efficiently as possible. Customization also introduced bugs into the system which the bank had to spend a lot of time trying to fix. Not customizing, and selecting a system that has already been tested by the vendor and/or by other users ensures a limited number of bugs, as most bugs would have already been found and fixed. However, if the system has not been well tested, then the institution will be stuck coping with the bugs itself. Support from the vendor becomes critical to this effort.

Last but not least, there were organizational culture challenges. When introducing something new into an organization, there is always suspicion by employees, but this is exacerbated when moving from a manual to an automated system because employees suspect that computers are being brought in to take away their jobs. People who have worked in a manual environment all their lives may never have used a computer and may not be comfortable with the idea of doing so. Successfully implementing an IT system under these conditions requires that employees not only acquire new skills, but also shift to a new paradigm.

Source: Adapted from a presentation by Robert K. O. Pertet, Information Technology Manager, K-Rep Bank

Integrating IT
Current technology solutions are not adequately meeting MFI needs. The CGAP survey finding that only 34% of African microfinance managers are happy with their current information systems reflects this weakness. Many reasons were cited for it, including an inability on behalf of MFIs to clearly articulate what their business goals and needs are, and to make IT decisions in support of those goals. According to Sabana, many MFIs are not yet applying IT as a strategic tool. They treat it as an add-on and consider it as something that the systems administrators should deal with. Cracknell commented, "Too often it is assumed that an MFI's existing IT system can accommodate a new product as the market evolves. The organization waits until the product has been designed and developed and procedures have been written and then, when they've got two weeks until the launch of the product, someone realizes, 'Oh, the IT staff need to set it up on the system, don't they?' They take the product to IT and it turns out the system cannot do certain things."

Setting Realistic Expectations
Perhaps because of cost and time pressures, MFI budgets are always tight and implementation schedules are aggressive. People are trying to do a lot in a compressed amount of time. As Laura Frederick commented, "There are high expectations of technology. People see it as the potential panacea for making the whole organization better and they're often not very clear about what the limitations of the technology are upfront. We think that it works perfectly, and then when we get in and it doesn't, there's great dissatisfaction."

The Pace and Nature of Change
MFIs struggle to manage change at a variety of different levels—change in their markets, in the size of their customer base, in the environment in which they operate, etc. As Santiago López, Regional Manager of Banco Solidario in Ecuador noted, "Things are always changing; you have to innovate all the time. By the time you develop a product and take it to your market, the market has new needs or different needs and you have to develop again and again." Existing MFI systems are often not able to cope with growth. Sabana volunteered, "I don't know how many times we have had institutions say, 'Look, two years ago this thing worked for me, but now, just three years after installation, it can't cope. I'm growing at such an alarming rate that I have to go back to the market.'"

Once an institution decides to introduce a new IT solution, the scale and scope of the change required can be surprising. As Hany Assaad noted, "Many MFIs require basic, and at times significant, loan process and MIS re-engineering and upgrades before a remote-banking implementation can even take place, hindering quick solution roll-outs." Furthermore, added Frederick, "When you upgrade an information system or implement a new delivery channel system, you impact every single person in the organization and you need to deal with that change element in one way or another." The challenge demands more than a simple response to technological change.

Lack of Standards or Benchmarks
"The microfinance industry is not a standardized field," observed Kamal Budhabhatti of Craft Silicon. "Each MFI has their own unique way of doing things and they want their software to be customized to their own requirements. This is becoming difficult for vendors." Rose Ringeera from World Vision concurred, "We don't have microfinance standards. It all depends on where you're coming from. You have to decide for yourself, 'Am I doing the right thing?' and that's a hard thing to decide."

Legal and Regulatory Constraints
A number of regulatory barriers can constrain an MFI's ability to implement strategic IT solutions. In India, for example, only banks can accept a deposit, which means that a lot of the remote rural banking that one could do using internet kiosks or other alternative delivery channels becomes very difficult. There are also communications regulations in many countries, such as "know your customer," that require clients to be registered with a financial institution for 6 months before they can access online solutions.

In some countries, there is no legislation to govern electronic banking. In Kenya, Andrew Kimani of Equity Building Society noted, "You might be told there is no legal framework which governs that; then it's impossible to try to do what you want to do." Assaad pointed out in a discussion on switching mechanisms, "Once you figure out how you make it work between MFIs and banks with respect to clearing and settlement, you still have to convince the Central Bank that these transactions are valid or can be done by those institutions." Cracknell advised, "Regulators are learning on the job just as we are. So we need to hold them hand in hand to some extent and take them forward with us."

> *"When we went into this we thought the technical side would be the difficult part, but it wasn't. The hard part was integration into the central switching hub for all South African banks which allows the banks to use each others' network. It took us close to 12 months just to get permission to enter the system and that was with huge negotiations and the assistance of the Central Bank. The second problem was legislation. Legislation around banking was drafted to service the high income groups. The Financial Intelligence Centre Act poses huge challenges; they say you have to have a utility bill to prove an address. How do you get proof of address from a homeless individual who requires a financial service to receive grants or disability pensions in a seamless and secure manner? The regulations seem against us rather than trying to promote a solution."*
>
> ~ Dirk Bruynse, TEBA Bank

Vested Interests

In terms of infrastructure and shared solutions, one additional challenge is the unwillingness of those who have successfully introduced new technologies to share with those who have not. David Cracknell admitted, "Vested interests are legion, especially when you're talking about larger banks and this makes a policy level response and a national strategy a lot more challenging than it otherwise would be. It's one thing if you ask people to say what's the best strategy for the country, but if you ask them what's the best strategy for their individual bank, that may be something completely different." In Kenya, for example, there's little interest among the bigger banks in joining a common switch because they're the banks that have the ATM networks at the moment. They might share their machines with other financial institutions, but they might also impose a fee on that transaction that penalizes the customer so much that no one actually wants to use it. Thus, on paper they may be part of a collaborative mechanism, but in practice, they're not. In other countries as well, it is not uncommon to see large banks operating in common interest against smaller newer competitors.

IV. Making IT Strategic

"The most important factor is that senior managers take a leadership role in a handful of key IT decisions."

~ Harvard Business Review, Nov 2002

"You have to be selective, that's what makes you strategic."

~ Laura Frederick, E-change

"Technology and change go together. If you want to use technology and you want to see a real benefit in your business, then you need to change the way you do business to take advantage of it. Then the gains can be phenomenal."

~ Janine Firpo, Hewlett-Packard

Given the potential of information technology and the challenges that the African microfinance industry faces in adopting it, how can microfinance institutions in Africa make information technology a strategic tool? What can institutions do to minimize the negative and maximize the positive so as to increase the chances that their IT projects are successful? This section summarizes the most powerful and most frequently mentioned suggestions that participants had to offer.

1. Know where you want your business to go

Before starting to think about the strategic role of IT, an institution has to know where it is headed. As one participant commented during a question and answer session, "You need to know where you are going first. IT is just a tool to help get you there. If you don't know where you want to go, it doesn't matter whether you take a car or a plane or you walk; you won't arrive."

Laura Frederick echoed those thoughts, "Without business goals, you're a ship lost at sea in terms of your technology choices. But once you're clear about your path forward, it's usually pretty easy to flush out the technology requirements. For example, if you're going to transform from an NGO into a regulated institution, that defines a lot of what you're going to need in the next two to five years—you don't do savings now but you're going to do savings, so you need to make sure you have a savings module. Or, perhaps you're going to move from a decentralized to a centralized system so you can offer branchless banking in a more fluid way. That defines what you're going to need—you'll need software that can work in a centralized environment."

> *"Information technology choices are only effective if they further your business goals. Without clear business goals it is not possible to define an IT strategy or direction."*
>
> ~ Laura Frederick, Echange

Knowing where the institution is headed will also help keep up with the fast pace of change, both within the institution and in the world of technology. With that knowledge, the institution can make strategic decisions about whether it needs a scalable technology now and, if so, how much growth the technology needs to be able to accommodate, or whether it will need a different kind of technology altogether in the future, in which case, there is little need for the technology it is buying today to be capable of managing growth. Once it knows where it is going, it can also guide its vendors to keep their eyes open for solutions that it anticipates needing in the future.

2. Inform your decisions

To be strategic, IT solutions must be informed by research, testing and ongoing feedback. As Frederick advised, "Don't just go on what you think your customers want or need. Don't go on what you see your competitors doing—they're doing ATMs so we should do ATMs. That's copycatting; that's not being strategic. You need to analyze the environment, both internally and externally. Then you need to look at IT. What are the options out there? What could you get access to? Would it be possible to offer your services through other institutions or through another organization's infrastructure? Are there any attractive partners out there with whom you could collaborate to lower your costs or reach remote clients?"

Before deciding what technology tool would best assist the MFI in getting to where it wants to go, it is important to know what the institution's current situation is. What are its available resources and existing capacity? What is its competitive advantage in the marketplace—is it a low-cost service provider that aims for volume to generate revenue or is it serving a market niche? What is the competitive and regulatory environment? What is its customers' current relationship with technology? How comfortable are they with it? What does it need in order to get to where it wants to go?

Arguably, what is most important to understand are customers' needs, attitudes and behavior. What are clients looking for? "In very simple terms," says Assaad, "they're looking for security, convenience, flexibility, mobility, a variety of products, etc. But every client group, every segment, every cluster has different needs, attitudes and preferences depending on where they're located, what's their income, what activities they are involved in, what's the size of their business. Before you try to choose a technology, make sure you've already identified for which market you're choosing the technology and that you understand that market sufficiently to choose an appropriate technology.

Later, you'll want to carry out more research to define your specifications and requirements, to refine those requirements, and to adjust the system itself as feedback is received from clients and staff."

3. Define what the technology should do, not how it should work

Once there has been some research done, and business goals and needs are clarified, the MFI is ready to articulate what it wants technology to do. There are two kinds of technology needs it will eventually want to define. At the initial stage, it will simply want to articulate what kind of solution it needs, or what problem it wants to solve.

The institution should resist the temptation to run to a particular technology early on. As Frederick said, "Be disciplined and make yourself think about the "what" of the system—what do we need this system to do? Don't say how you're going to do it; focus on what you're going to do. For example, 'We're going to provide our customers with 24-hours a day, seven days a week access to their account information.' Now, how could you do that? You could do it through telephony, voice over IP, internet, mobile SMS text messaging, fax machines. There's a number of ways you could fulfill that requirement, so don't get sucked into saying, 'We're going to use this type of technology.' Focus on what it is that you need to do. Once you define what the business-focused solution is, then you can come back in the next phase of the project and evaluate all the different ways you can actually solve that problem."

Other examples of business needs were mentioned, such as, "We need to create more points of access for our customers to do transactions," and "We need to create branchless banking." Frederick elaborated on the latter. "Say, for instance, that you have a large number of mobile customers who do business in multiple locations, or who work in one location and live in another, and they need to be able to conduct financial transactions in more than one branch. How do you create branchless banking? A low-tech approach is to simply use the fax machine. Someone picks up the phone, calls the client's home branch, asks whoever answers the phone whether there's money in the client's account, and if they say yes, great, then the client can withdraw funds and the branch which dispenses the funds sends a copy of the transaction information to the client's home branch via fax, someone

inputs it into the computer and boom, you've got branchless banking. The high-tech approach these days is smart cards. Customers have their balance on their card, so it doesn't matter what branch they go into for service. The point is that there's many ways to create branchless banking. Branchless banking is the what; the fax machine or the smart card is the how. Make sure you stay focused on the what."

Once the need that the technology should meet or the problem it should solve has been defined, the institution can evaluate its various options and choose the type of technology that can best meet its needs given its situation. Then and only then should it start defining the specific requirements of what it wants the technology to do and how it wants it to work.

The clear, careful and complete specification of product requirements is critical to the appropriate selection of a software or vendor and should not be understated. As one participant said, "If you do a sloppy job, that's where your problems start." MFIs who have never developed technology requirements and specifications might want to download CGAP's MIS Evaluation Framework from www.microfinancegateway.org and use it as a reference to help think through the various requirements they might need.

4. Build a business case for the role of IT in your institution

"People often think that technology itself is innovative and that's what makes it strategic, but this is generally not true," says Frederick. "Sure, there's innovation in technology, but it's which technology you choose, how you access it, and how you use that technology that make it be strategic for your organization."

- How is a particular technology, or approach to technology going to help the institution get where it wants to go?
- How is it going to help serve its market better or improve its customer relationship?
- How will it help the institution grow, improve its asset quality or increase its efficiency?
- How will it benefit customers and delivery partners?
- What is the rationale for introducing a change?
- Why choose to use this technology and why use it in this way?

Institutions should make sure they know the answers to these questions and can clearly articulate in words and numbers how their IT strategy or solution is going to support their business objectives. They need to build a persuasive business case that can convince all of the stakeholders who are to be involved in the project that this is a rational, profitable, desirable strategy to take and it is a better solution than the other available options. Doing so will not only help in choosing a strategic technology, but it will also help bring all the necessary players into the implementation process with common objectives and the motivation to make the strategy succeed.

The choice of a technology solution will be a unique decision based on an institution's current situation, goals, resources, customers' needs, and environment. What matters is not the specific solution it chooses, but rather, the fit between its choice of tool and the task at hand. As it endeavors to choose an appropriate technology, it should make its choice a business decision, not a technology decision.

> *"How might you change the role of IT in your institution to make it more strategic?"*
>
> ~ Laura Frederick, Echange

5. Design for "should be" not "as is"

IT provides opportunities to do things differently. In order to make the most of these opportunities, institutions must be open to changing the way they do things, to redesigning their business processes, to changing their business model. One MFI representative commented, "The mistake we make usually is to try to think about computerization before we have our business right. So when we computerize we computerize the wrong things and then when things go wrong we blame the system, even though it is our processes that are incorrect."

Box 3: Moving beyond "Best" Practices to "Next" Practices

The microfinance industry today holds much in common with the U.S. financial market in the 1950's. The average loan size was $300; repayment rates exceeded 95%; there was significant person-to-person interaction, high transaction costs and challenges related to scale. What happened in the U.S. to provoke such dramatic change over the last 50 years? Financial institutions transformed business practices and as a result it was possible to achieve incredible growth. Technology was key, but it wasn't the only reason.

There were two products that came out in the late 1950s: the $1,000 line of credit and the credit card. These new product lines required dramatic rethinking of the traditional way of doing business. First, customers were allowed spend their loan funds on whatever they desired; they no longer had to agree to spend their funds on a specified purpose. This took control away from the banks and put it in the hands of the clients, which was a fundamental paradigm shift. Second, banks accepted a higher level of risk. They had initially expected a 4% default rate and they actually got 22%, which almost destroyed them, but eventually they figured it out and realized they could accept more risk because they had dramatically lower transaction costs. Third, the new delivery channel was marketed in an innovative manner—through a credit card drop. Sixty thousand credit cards were mailed in one day to a particular test zone, which was a large enough scale to make merchants interested.

New business models were also invented. VISA was a concept that never existed before, i.e., the creation of a for-profit entity that would be owned by every bank that had a vested interest in the transaction systems. Such cooperation among competitors was generally unheard of at the time. Existing banks had credit cards, but they all competed with each other and none of them were successful; they were all losing money. What VISA did was take responsibility for all of the back end processes. It standardized them, and then provided banks with access to them for a transaction fee. Today VISA is owned by something like 20,000 banks; it is a dramatically different model than had ever existed before.

Technology was a key driver in the success of the solution. Authorization was processed via an "800" number; which dropped wait time from five minutes to seven seconds. There was also enhanced data mining and risk analysis. The end result was a massive increase in scale. In less than 40 years, VISA has built a system through which $1.7 trillion dollars now passes every year.

Source: Adapted from a presentation by Jeanine Firpo, Hewlett Packard

Cracknell made a similar comment when discussing reporting requirements, "Very often when you migrate from one system to another, you just copy the reports from the old system and that is simply not right. You're developing new products and services and you need to think very carefully about what information you need." He later continued, "If you try to simply layer technology on the way you're currently doing business today, you're not going to see a lot of value added. You want to leverage the technology to be able to operate differently in the marketplace. IT works best when you redesign the processes and systems and the way you interface with IT."

Perhaps Janine Firpo summarized this recommendation best when she said, "If you just apply technology to your same old business practices, you're not going to see any change. In fact, it's going to be cheaper to do things the old way. Technology and change go together. If you want to use technology and you want to see a real benefit in your business, then you need to change the way you do business to take advantage of it. Then the gains can be phenomenal."

The recommendation was echoed by a large number of participants and not just MFIs. Hardware and software designers and vendors joined in as well. From Hewlett-Packard, "The reason handhelds don't work that well is because they were built for business people who have notebooks and calendars and daytimers; they were built for a specific purpose that has virtually nothing to do with what people need them for in these countries and they work on batteries that don't work in these countries. So

when we're thinking about providing technology solutions to emerging markets, we have to reinvent the hardware and the software; we have to reinvent our business models. If we as the major vendors in this space don't do it, other people are going to come along and do it. As technologists become more and more proficient in developing countries, they're going to build the solutions that really work in those markets and they're going to be unlike anything we've ever seen before."

6. Prioritize

No matter how much IT costs may come down in the future, the reality is that institutions will never have the time, human and financial resources to do everything they want to do. "You can't have everything, so you need to be honest and set priorities," advises Laura Frederick. "People have a tendency to make a laundry list of everything they could possibly want without prioritizing. This is where the business leaders come in. They need to put priorities on the business work flows or processes that are most critical, and they need to rank those, so you know what's most important when you go to look at a system. Then you won't run into the problem of vendors trying to sell you something you don't need or want because you've taken the time to look really hard at what you absolutely need instead of looking at the bells and whistles."

"Explore specific solutions that focus on customer needs first. Start with the highest customer need even if it isn't the most profitable for the MFI."

~ Hany Assaad, IFC

"Conduct a thorough cost-benefit analysis of all IT proposals."

~ Alex Silva, PROFUND

She later elaborated, "My mantra is 'think big, start small.' Think about everything you want to do as an organization and don't try to do it all at once. Get the big picture, the big vision, and then drill down to the most critical, simplest starting point. Do that with your IT and then build off of it. People try to do too many IT projects at the same time and that is one of the reasons why they fail. It is much better to be focused and to do a couple of projects well and build off of that because IT is all about constant evolution and constant improvement. Think broadly about what you are trying to achieve or solve, then scale it down to the most critical concept and implement that single concept first."

Those MFIs that have implemented IT solutions often noted that having adequate resources is a critical success factor for any IT project. One of the best ways to ensure that there are adequate resources is to consciously and selectively choose which technology solutions to implement, how many projects to have in process at the same time, and the pace at which to roll out a particular solution. Does the institution really need to get all of its branches on line at once, or can it focus first on those branches with high transaction volume?

"Think about staggered implementation," Frederick advised. "I think there's a perception out there that it will make you look better if you can say in your annual report 'I'm working on IT project A, B, C, D, E, F and H.' In fact, you're probably not implementing those IT projects very well because you're too distracted. You need to decide which of those projects is more critical, focus on it, make it effective and then build upon it."

Identifying and implementing priorities takes leadership. Responding to a question from Habel Mkombola of Faulu Kenya about how to balance current and future IT needs, Frederick said, "You can't get to the future vision of your organization without a sacrifice. This is where the leadership comes in. You need to make hard choices about your financial resources. You need to somehow create time for your IT manager to focus on the future because if you don't, you're never going to get to the future. You can either: 1) add another person to the IT department to do the day-to-day support and maintenance; 2) leverage external consultants because you can get them on a short-term basis; or 3) look for outside resources like the CGAP IS Fund to help out with this kind of technical assistance. When you're doing your budgeting, you need to be realistic about your IT staff department's time, and

consider how you're going to help and support your IT manager to have time to do the work they need to do for the future."

7. Don't be afraid to say, "NO"

"It is important to have the ability and willingness to say no," Alex Silva advised. "Too many times I've been in a situation in which an IT solution is brought to a Board and there's a sense that it's not right or it's costing too much money, yet somehow the inability exists to reject the project. It would almost seem that by the time it gets to top management and the Board for approval, it's already a done deal. Somehow there's the perception that if we don't do it, we're going to lose time and slow things down unacceptably.

> *"The technician will always push for the newest gadget. That's just normal. One should be able and dare to resist it."*
>
> ~ Alex Silva, PROFUND

Maybe this is just one more reason why top management and the Board should be involved all along in the process, but even if they aren't, they should not be afraid of saying no when the project is brought to them for approval. It is the people who are presenting the project that should be able to demonstrate the clear cost benefit advantage to doing the project. There is no way that any other major capital investment project would be authorized if the costs are not clearly identified, if there is not a clear person who is responsible, if management is not involved, if training has not been already in place. The same should be true for IT. One should be able to reject an unconvincing project; at times that is healthy. Send it back to the drawing board and don't be afraid of the consequences of delay. The technicians and the vendors tend to be convinced that if you don't do it now then chaos will follow, but it doesn't quite work that way."

8. Don't leave it to the technicians

Silva spoke strongly to this recommendation as well, "IT decisions are way too important to be left to the technicians. I've seen it and I myself have been guilty of it. IT decisions are often left to be made by the experts because it seems they know what they're doing. IT is such an unknown area for most of us that since we don't understand exactly what the computer experts are talking about, we tend to exclude ourselves from the decision process. That is a big mistake. IT decisions are crucial to the well being of the institution. They're strategic decisions. I don't see the Board excluding itself from any other strategic decision. It should not exclude itself from the strategic decision of what's best in terms of IT, especially when this much money is involved. The capital investments associated with computer systems are always bulky and it could very well hamper the ability of the institution to develop if those decisions are not right."

An article in the November 2002 issue of Harvard Business Review noted that most organizations are not generating the value that they could from their IT investments. The companies that have managed their IT investments wisely have been able to generate returns that are as much as 40% higher than their competitors. The most important factor of success is having senior managers take a leadership role in a handful of key decisions. What are these key decisions? There are six: [2]

1. ***How much to spend on IT?*** Successful companies usually approach this question quite differently from the mainstream. Instead of asking, "What is the industry benchmark on how much I should spend on that technology," they first determine what strategic role the technology will play in their organization. Once they determine that role, they establish the funding level that ensures they actually achieve their objective. If the strategic role and funding levels or the resources necessary to do that are not defined, typically a lot more money end up being spent without any value coming from the system.

[2] This discussion was presented by Frederick on the basis of an article by Jeanne W. Ross and Peter Weill, "Six IT Decisions Your IT People Shouldn't Make," *Harvard Business Review*, Nov 2002.

2. ***Which business process should receive IT dollars?*** Because IT is intimidating, there are lots of options, and an institution does not want to give preferential treatment to certain people or departments, it is easy not to make decisions about which IT projects are more important. Yet it is the responsibility of executive leaders of the institution to make the hard choices about which business processes are most critical to the institution and, therefore, where the institution should put its IT resources to ensure that the most critical projects get the attention required to make them successful. IT managers do not have the broader understanding of the business to make decisions about which projects are most important. Their technical knowledge and advice should be sought, but they should not be asked to make the decisions.

3. ***Which IT capabilities need to be institution-wide?*** In other words, what should be centralized and standardized and what should be decentralized and non-standard. There's trade-offs both ways. To be completely centralized and have rigid standards means lack of flexibility. It takes away the convenience of employees or of responding to customers. Having the other extreme is costly. A completely decentralized system is not efficient and does not create business synergies across the organization. The goal is to find the equilibrium between the two and to decide what is critical to have centralized, what elements of the business need to be standardized to ensure consistent delivery of service, and what can otherwise be decentralized to create innovation, empowerment and responsibility throughout the organization.

4. ***How good do IT services really need to be?*** Higher reliability and service levels are generally a great deal more costly so it is important for senior managers to determine from a risk perspective the true levels of reliability that they need from their IT. For example, if there is a connectivity provider that can ensure 96% of up time, how much should be spent on that last 4%? Some people might say, "We must have 100% uptime with our connectivity or we can't operate," but then they could end up spending twice as much getting that last 4% of connectivity as they spent to get the first 96%. So there is a need to be sensitive to the fact that the institution is growing and needs to use its resources wisely. The institution would therefore need to think creatively about how to handle the last 4%.

5. ***What security and privacy risks to accept?*** On the one hand, especially with banking solutions, if too much access or insufficiently protected access to information is provided, there is opportunity for fraud and for private individuals' information to be misused. On the other hand, if security strategies are so tight that it is not convenient for customers, the institution is going to lose market share. So it needs to find the balance between the two; they're both important. And it is not the IT manager's role to find the balance. It is the senior manager's responsibility.

6. ***Whom to blame if an IT project fails?*** It is been heard again and again in the sector how an institution did not get the return on investment that it wanted for its IT investments. Often people point to the IT department and claim that it just does not function well enough (e.g., there's not enough people, they don't know what they're doing, they're overworked), but research has demonstrated that it is not so much the IT department as it is senior managers who are non-IT executives not acknowledging the organizational change that IT creates. It is not looking at the change element that technology brings to an institution—changes to business processes, changes in the roles and responsibilities of staff, changes in the way staff and clients interact with the technology, etc. So to be effective in implementation of technology, the institution has to acknowledge the fact that it is touching every area of the organization. And, therefore, it requires a change plan as well as a technology plan.

> *"Don't get discouraged by failure – learn from it; that's how you become innovative."*
>
> ~ Robert Pertet, K-Rep Bank

In a question and answer session, one participant challenged some of this advice saying that one of the major reasons for which the Board rarely gets involved is that it is hardly available, and even if it were more available, it could become very bureaucratic to involve it in IT decisions. Is it necessary to have an IT committee at the Board level? Hany Assaad clarified, "Normally, the kind of decisions the Board takes are on the IT plan, and an IT plan doesn't change from month to month. As a Board you set the stage and say, 'We're going to get into Palm Pilots for our loan officers.' It may then take management several months and many decisions to figure out how to implement that plan. The Board decides on the overall program; it does not decide on the individual transactions, so if it meets once per quarter, that's all it needs. I've seen it work. I participate on a few Boards and it's no problem getting the IT plan reviewed as part of the strategic plan of the year. There's monitoring involved, but nothing day to day; that's the responsibility of management, as delegated by the Board. The Board determines what the envelope of investments should be and then asks for regular reporting on the progress of those investments. To answer your question, I've rarely seen an IT committee of the Board. There may be an IT committee of senior management but not of the Board; the Board just decides on the plan."

9. View IT projects as business change projects

"It's important to view technology as a change catalyst," Frederick advises. "It's an enabler of change. You don't implement technology just to implement it. You implement it to change your business models and if you're changing your business model, that's going to create change across the organization. Often when we go after technology, we think it's going to do one thing—and it does do that one thing—but it also does five other things. The impact of technology is phenomenal. You cannot underestimate how it will impact your lives."

> *"Technology rolls over us like an unstoppable juggernaut. Only by understanding this can managers intelligently apply technology, assess its affects, and be reasonably prepared to cope with [its] unpredictable eventualities."*
>
> ~ Richard Farson, Management of the Absurd

It is human nature to resist change—any kind of change—but the bigger the change is, the greater the likelihood that resistance will appear. Technology projects, with their new requirements, their new ways of doing things, and the uncertainty they bring with respect to what the future will hold, are often resisted by staff and sometimes even by clients. If MFIs view IT projects as business change projects, they can prepare themselves for the changes that need to take place and for the resistance that is likely to come from stakeholders as they transition from one way of doing things to another. Managers can employ different strategies at different stages of the transition process to gain acceptance of and commitment to change, as shown in Table 1.

Table 1: Change Management Strategies

Stage of the Transition	Managerial Strategy
Denial	Announce; confront openly – do not keep the project a secret
Resistance	Invite feedback; acknowledge feelings and fears
Exploration	Stimulate ideas; challenge and involve people
Commitment	Focus on an action plan; inspire and acknowledge accomplishments

Frederick approached this topic from an innovative perspective when she explained, "Just as you can have financial capital or human capital or social capital, you can also have change capital within your organization. It is an asset just like financial capital. If you fail to invest in your staff and to plan for the change process, and to include people and help them move through that process, you de-motivate your employees, you create poor morale and you erode your organizational capacity to move forward, to accept, to adopt, to change, to invent, and to meet the demands of the marketplace. As business leaders, you have the opportunity to acknowledge that the capacity to change is real and important and can be cultivated. Over time, as you introduce new technology and new initiatives, your staff and your organization become better at it. They can adapt quicker, they can move through it with greater ease,

all because you've done the proper things to create a culture of change within your organization."She later continued, "If you view your IT project as a business change project, you might find the star model to be a useful approach or method for implementing your project. This model incorporates the fact that you're leveraging technology to accomplish a business objective, but the focus or the emphasis is not on the technology; it's on the strategy and the business value that you're going to bring to the organization through change.

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To apply the model, you begin by asking questions. You do an inventory in each of the areas represented by the star as it relates to your IT project. You start at the higher levels of your organization and move progressively deeper. Then, based on the responses you get, you do change management planning to set up and move forward with your project. Some of the questions you might ask include:

- ***Strategy:*** What are the business objectives and success metrics driving the collaborative technology program? Who are the stakeholders? Are all stakeholders aligned around the objectives?
- ***People:*** What are the roles, responsibilities, and performance objectives of individuals impacted by the collaborative technology? How are they impacted by this technology, and how might they need to change to best leverage the technology?***Culture:*** What are the norms, values, and beliefs in the organization that may help or hinder acceptance and use of the technology?
- ***Process:*** What are the processes and procedures that guide the organization's work, and how will they need to change in order to align or best leverage the technology?***Structure:*** What organizational structures and reporting lines are in place, and how might they need to change to align with the new way of doing business."

10. Get top level commitment

With many other speakers supporting her case, Frederick argued, "For an IT project to be successful, it must have visibility and commitment at the senior management level." "You need a project champion," says Robert Pertet, "because he or she is the one who will push your project." In Murray Gardiner's words, the champion "manages relationships to drive the project forward."

Yet a champion alone is not enough. There is also a need for buy-in or commitment from others at the senior level who may not be championing the change, but who will agree to lead or support it. How to secure buy in?

> *"It's critical that your business leaders lead the change and take responsibility for the return on investment or the business value added that you get out of the technology."*
>
> ~ Laura Frederick, Echange

First and foremost, it should be demonstrated how the IT project will benefit the institution. The idea has to be presented in a way that will make business managers understand what it is the institution wants to do. Gautam Ivatury explained, "It's about communication and presenting the argument effectively. The technology team gets quite excited about technologies and new products, but their excitement can't be translated into management speak, into a rationale for the management." Joe Jackson concurred, "In my experience as a provider of MIS solutions in Nigeria, Ghana and Togo, the biggest problem is that MFIs do not see MIS systems as benefiting them. Most of the MFIs we've dealt with have looked at the MIS as something to satisfy donors, not as something to make them more

efficient or to help them run their business better. So there's rarely true buy-in from management. We've had only two successes in implementation and they were those in which the management felt the system was for them."

> *"If you ask me of all the critical success factors which is most important, it's **management buy in.**"*
>
> ~ Joe Jackson, theSOFTribe, Ghana

It is critical to have clear goals, to explain what needs are today, and to articulate what the technology is expected to do. Gautam continued, "That is the way for a technology team to present a convincing case to management and also address the things that management may be most concerned with, which are costs and potential benefits. One of the things we're doing at CGAP is developing a tool to help MFIs figure out the costs of the system they're developing and think about how to quantify the potential benefits. That kind of calculation, that kind of thinking, and the articulation of that thinking will convince management that this is a worthwhile project for consideration." Of course, once the institution has explained what it is it want to do, it must periodically report on its progress so that it can maintain the top-level commitment that it worked so hard to obtain.

11. Don't isolate IT

Many IT staff members are currently housed within their MFI's finance or accounting department. This seems to be the natural result of how MFI operations have traditionally evolved. Many MFIs first applied technology for accounting or finance purposes and it may have made sense to place whatever IT resources existed inside those departments, especially if the finance managers had more competence and understanding of computers than the operations managers. As Cracknell noted, "It's partly to do with the degree of evolution of the organization. As organizations evolve, you tend to see a more distinct operations function and a more distinct marketing function and you tend to then find IT as a more distinct department in itself rather than an adjunct to finance. So part of it is an evolutionary process within an organization as it grows and develops."

Although some participants argued that creating a separate IT department was key to making IT strategic in their institution, others recognized that if there is a one or two-person IT department, chances are the institution is not paying a high enough salary to attract someone at the same level as its Chief of Operations. Depending on the market in which it operates, it may be difficult to find a quality network database administrator who also has the management skills necessary to lead an IT department, someone who understands microfinance as a business and understands how technology can lever that.

> *"You should think about structure because it has an impact on how change and technology get discussed, vetted, incorporated and adopted into the organization."*
>
> ~ Laura Frederick, Echange

More important than ***where*** in the institution the IT department sits is ***how*** it sits and ***to whom*** it answers. As Frederick noted, "It's a really poor scenario if you have an IT manager who feels his direct boss doesn't understand technology and doesn't understand how technology can impact or help the organization, yet he can't go around his boss to get to the Executive Director. As the CEO or General Manager, you need to make sure that whoever the IT manager reports to understands technology, isn't afraid of technology and isn't so overwhelmed with their other responsibilities that they're not able to provide leadership for your IT staff."

Regardless of where the IT department sits, it should not be isolated. It needs to be integrated with other departments in the organization so that it can address the needs of the marketing staff, finance staff, operations managers, as well as other users. And it should never implement an IT project on its own. For IT projects to be strategic, technologists need to be part of a core team that also includes business leaders, users, service providers and vendors.

Box 4: Moving Your Data Successfully from a Manual to an Automated System

Microfinance programs moving from manual to computerized systems all face the challenge of data conversion. The challenge is universally underestimated because institutions do not really know what the quality of their records is until they go through a process like conversion. It is then that they find out where the bugs and errors and problems are, where staff have taken shortcuts, where there are incomplete records, etc.

Data conversion is responsible for the failure of a lot information technology projects, especially in microfinance. It involves huge amounts of staff time and energy and must be managed carefully, but it can work, and work very quickly. Equity Building Society converted 40,000 accounts from manual to computerized within a few months. It did this by putting in a large team to do the necessary reconciliations and to bring up the data quality prior to computerization. As the team moved from branch to branch it grew even bigger because it absorbed the surplus employees who were temporarily not needed in the computerized branches as computerized transactions made it possible for each employee to work faster and serve more customers.

To carry out a successful data conversion, there are four lessons that MFIs might want to keep in mind:

1) Define who is responsible for data conversion before signing a contract with a vendor. Is it the vendor's responsibility to get the data into the right shape or is it the institution's? The vendor can do many things, but if the base data is poor, it's not necessarily the vendor's job to correct the quality of data.
2) Although the conversion process itself may not take long, getting the data quality necessary for conversion can, so institutions should not try converting all data at once. They should do it branch by branch, zone by zone, step by step.
3) Operations should not be frozen while the conversion is in process. One MFI shared the story of how it froze its operations during the data conversion process because the vendor promised it would be completed within two weeks, but the process went on for two months and operations were paralyzed.
4) Finally, institutions should be critical with vendors about their data conversion process. Particularly once an MFI is computerized and wishes to convert from one automated system to another, the conversion process can be tested several times and staff can be trained using test data before the system ever goes live with the real data conversion. Because of all the testing, organizations can be flipped to the new system over a weekend. The planning and preparation can pay off.

Source: Adapted from a presentation by David Cracknell, MicroSave

12. Think first, act second

The phrase, "Think first, act second" came from David Cracknell, but Gautam Ivatury sang a similar tune when he advised MFIs to "Plan, plan, plan." Kamal Budhabhatti echoed them both when he said, "You have to prepare yourself first." All three presenters delivered a similar message, i.e., for IT projects to be strategic, they must be carefully planned.

MFIs should have the future in mind when making and implementing technology choices and prepare their business processes, their data and their people for the changes to come. "Be patient," Budhabhatti says. "Sometimes organizations are very anxious to bring in a new system because they think that once the system is in place, everything will be okay. They literally push us, as suppliers, to

install the software. We suppliers also make mistakes because our payments are linked to installation, so sometimes we are blind and just install the software, not considering that you might run into difficulties because your data has a problem or your training has not been done properly." Rushed installation can lead to lengthy and expensive fixes, or worse, project failure.

Pertet recommended that MFIs develop an IT strategic plan to serve as a road map for their IT investment, to help them think through the order in which things need to happen, to make sure that key people are available to participate in the project as necessary, and to plan for contingencies. Frederick suggested setting deadlines and budgets for different phases of the project. Others stressed the importance of making sure that requirements and specifications are complete, policies and procedures are established or updated, a backup or disaster recovery strategy is in place, and security needs are taken into account. There may be regulations or international protocols that must be followed, as is the case with ATM and POS technology. In any of these areas, a little planning and preparation can go a long way towards helping an IT project be successful.

13. Have a process

An important part of planning and preparation is defining the process through which the implementation of a new technology solution will be identified, introduced and managed. It does not matter so much which process is chosen, but it is important to have one. As Frederick noted, "The challenge is that there are so many people involved in the process all along and everyone has a different idea about what they need or what they're building. So, it's really important that you use a good methodology to determine what your needs are, to articulate what those needs are, to select the right partner, and to communicate constantly throughout this process."

CGAP's Information Systems (IS) Process was mentioned several times as one useful approach to finding the right system. Ivatury described the six steps of the CGAP process as follows:

1. **Preparation.** This means preparing the project as well as preparing the organization. Who's going to be leading this? Who do needs to be involved? How to ensure that various members from various departments of the organization are working together and jointly defining the system's requirements?

2. **Needs analysis.** The institution must figure out what its needs are today and what they will be tomorrow. What kind of technology context is it operating in? What environmental considerations does it need to take into consideration? Whom does it need to report to? What kind of reports do its managers need? This step requires detailed documentation of information needs and work flows.

3. **Design.** This is most important if the institution is designing its own system, but it is also relevant if it is planning to buy someone else's system. The institution needs to define and document in detail its solution's requirements. The results of all its previous analysis should be brought together in this phase, reviewed in light of the impact on the entire organization, and integrated as appropriate to create the new design for the information system. By the end of this stage, the institution should have a clear idea of what its system should be able to do and what it will enable the staff to do.

4. **Selection.** During this phase, members of the information systems team research options for addressing the requirements defined in the needs analysis phase. This involves researching companies, distributing a request for proposals, and evaluating the responses received. The

institution should select the technology option that it thinks will work best for the institution and its clients and will fit within its budget.

5. **Implementation.** The implementation phase transforms the information system from a plan to a functioning system. It encompasses the hardware installation, software installation, data conversion and transfer, acceptance testing, staff training and general process alignment. A lot of MFIs have the wrong impression about this stage. Looking at the cost structure of buying a computerized information system, training and implementation is six times the cost of the actual software bought. It might cost $15,000 for a software license, but the training and implementation could cost $90,000. That is where the cost comes in, yet that is also where the software becomes productive or not productive for the institution. It is important that everyone—the management and Board included—expects there to be a lot of training involved and is prepared to bear with that cost.

6. **Management.** The management of an information system involves not only caring for the hardware and software that are the main conduit for the collection and dissemination of data, but also attending to the people, procedures, processes, and policies that comprise the complete system.

More detailed information on this process can be found at the CGAP information systems website at http://www.cgap.org/iss_site/index.html.

14. Involve users early and regularly

Frederick summed this recommendation up best when she said: "Technology acceptance and use is driven by perceived usefulness as well as ease of use. If your employees or users think it's a difficult thing they have to adopt, they're going to fight it. One way to help with that is to involve them in the decision-making process. That empowers people and helps them to begin shifting toward the new system."

"It will typically take you three to four months, if you're fast, to determine what your new information system or delivery channel option will be, so instead of having a select group of people in secret rooms doing all this work and then just announcing at the end of the four month process, 'We're now implementing this new technology,' involve people in that four month process so that by the time you get there and you're ready to move forward, so are they. Involve them in the definition of requirements as well as the selection process. When you have the vendors come in and present to you, get as many people in the room as possible to look at the software, to examine the approach, to talk about it, to be involved. Obviously, the ultimate decision lies with the general managers and the board, but it's your whole organization that's going to help you come up with the business case for what you're doing. The IT department should not go off by itself and decide what the institution wants." It needs to interact with the users, up and down the organization, and it needs to do so early and regularly. Not only will this increase technology acceptance, but it will also likely improve the quality of implementation. The earlier the technology is adjusted to meet user requirements, the less costly those adjustments will be and the faster the technology can be implemented.

15. Apply project management best practice

The best practice principles of project management apply to IT projects just as they do to any other kind of project. Cracknell went so far as to argue that, "Project management, the ***way*** you introduce a system, probably has more influence on the success or failure of an IT project than any other factor. If you don't have the project management skills in-house, buy them. I would pay—even if it's only one day a week—for someone to come in and make sure that the process is happening."

The need for ongoing monitoring, review and adjustment was reiterated by numerous seminar participants. "An IT project," Pertet commented, "is a continuous process. As your organization grows, your IT projects will grow with it."

"Make adjustments," Frederick advised. "Once you've decided on a solution and things aren't going right or properly, that doesn't mean the solution is wrong. Maybe the way you're deploying it is not working. You don't need to throw the whole solution out the window, but you might need to tweak it a lot, particularly if your business or technical assumptions changed."

> *"Systems are dynamic. They grow and change and this process needs effective management. One of the distinguishing characteristics between MicroSave's Action Research Partners has been the application or otherwise of project management approaches."*
>
> ~ David Cracknell, MicroSave

Some of the specific recommendations made in the area of project management include the following:

- ***Monitor progress toward very clear, agreed-upon priorities.*** At Teba Bank, they have not only identified priorities but have also numbered them, and every report they produce examines progress on the priorities in order. As a result, Cracknell notes, "There is absolutely no confusion about where the majority of effort should be directed."

- ***Map out a project plan***. Frederick elaborated on this point, "You can use an Excel spreadsheet or, if you prefer, a more sophisticated tool like Microsoft Project Manager. The tool itself is not important; rather, it's the setting up of a timeline. If you can't articulate to your managers what your targets and deliverables are in some sort of visual way to help people stay on track, you're probably not going to stay on track. This should not come at the end of the project when you're scheduling how roll out will proceed. As soon as you decide you're going to do something, you should start setting up a project timeline. Initially, you'll only be able to scope out the first set of activities in detail, but then you can move forward phase by phase. Once you know what your specifications are, you'll do your research and selection and contracting with your vendors. But when you get to the point that you're starting to negotiate with your vendors, you'll need at least a draft implementation plan so you can appropriately schedule the time and consulting services that you're going to need."

- ***Have financial models in place.*** "Pricing is incredibly difficult because it relies upon assumptions," Cracknell commented, "and I haven't seen assumptions that are more difficult to make than the assumptions that have to do with transaction-based electronic banking because very often it's green field. We're not talking about the high-end Visa and MasterCard market where transaction volumes are relatively established. But the advantage is that transaction patterns are established very quickly. If you have your financial models in place when you roll out your solution, you can actively look at how it's performing, have back up strategies to try to understand why people behave in the way they do, and try to adjust your solution to encourage more transactions."

- ***Watch out for scope creep.*** As the design of your IT project evolves over time, you'll find that people become aware of what can be done and their desire to add things on will grow. According to Frederick, "You have to manage that scope creep. Some of it is desirable because you don't know what a system can do until you're immersed in the process of building it, but you've got to manage it nonetheless, or you'll soon find yourself exceeding both your timeline and your budget, and you may run the risk of not achieving your original goals."

- ***Manage change requests.*** "Articulate and document the changes in your IT requirements and specifications over time because they will change," Frederick counsels. "It's usually in a meeting or a conversation by the water cooler that ideas for changes come up and you have to be strong about documenting those ideas so that you as an organization know what the changes are and you can communicate them effectively to the software vendors. You've got

to know exactly what change you want to make and specify that change precisely in terms of deliverables—'We want this to happen.' Have a change management process that actually documents change request #1, change request #2, etc. so that you have control. Otherwise different people can drive the change process in different ways, which is a recipe for failure."

- ***Establish an ongoing steering committee*** for advocacy, guidance, and decision making. Use whatever terminology works within the organizational structure, but put together a team of high level thinkers who have responsibility and leadership for the project and bring in some of the users and the IT department who are responsible for the actual work on the project. Be sure to clarify team member roles and responsibilities: who's going to be involved, at what level, and to make what contribution.

16. Have clear, measurable objectives

There are three aspects to this recommendation. The first, making sure to set goals or objectives, has already been mentioned, but the second and third aspects have yet to be stressed. It is important to set measurable performance targets, and to make sure that both an institution's objectives and metrics are clear. Without clear, measurable objectives, it will be impossible to know whether the IT project is successful, and there is a risk of not demanding what is necessary to get a return on the investment.

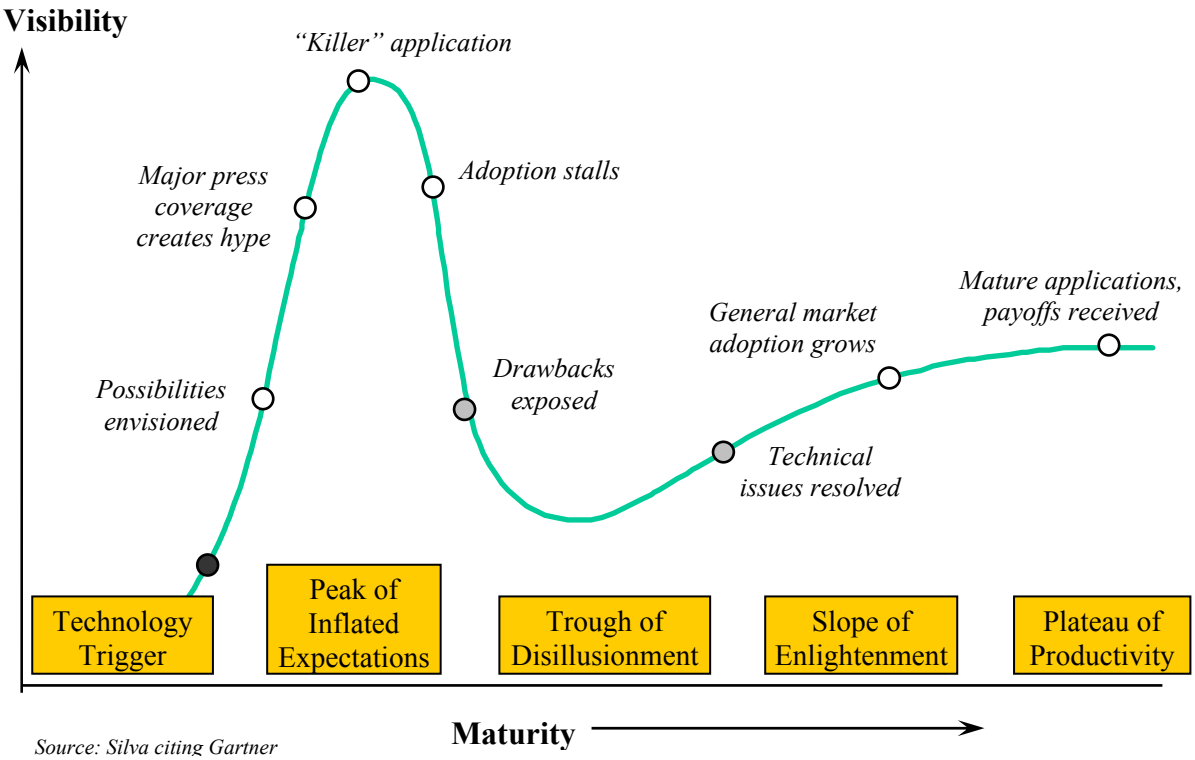
Frederick cautioned, "A lot of people like to slide on this. They come up with really vague things like 'improve my customer satisfaction.' But you need to drill down to something measurable. For example, 'I'm going to do a survey and I want 80% of my customers to mark satisfied' or 'I'm going to keep a log in my IT department so that every time my staff calls in about an issue, we track that issue, and once it gets resolved, we call that employee back and ask if they are satisfied.' You need that affirmation that you're doing things effectively for the organization."

Ivatury made a similar point, "If I have a system today that gives me a certain portfolio quality, and if I introduce a computerized system, how much do I expect my portfolio quality to go up, how much do I expect my repayments to improve, how fast should my reporting be, and how much better should the reporting quality be? If you have some expectations or targets, and if you can measure the results quantitatively, you can say to your Board, 'We introduced this system last year and these are the results we achieved.' Being able to do that creates a lot of confidence on the part of the management and it also gives you confidence in the system that you've bought or built."

> *"Define expected results and 'success' before implementation. Different parts of the organization define success and failure in different ways, so it's important to define what exactly you want to achieve."*
>
> ~ Alex Silva, PROFUND

17. Set realistic expectations

Alex Silva shared the chart below which shows the general pattern of how IT projects evolve. "When you first hear about something," he said, "say smart cards or credit scoring techniques, and how it might reduce your workload, everyone gets excited. The vendor tells you it will be ready in six months and cost you $500,000 and expectations soar. Once the idea gets rolling and the work actually needs to be done, then reality slowly starts sinking in. Typically, there are cost overruns and the system doesn't deliver what it was supposed to be delivering, and it's certainly not delivering in the time frame that it was supposed to, and eventually you settle on what the real value is of the application you started implementing."



Source: Silva citing Gartner

This rollercoaster ride of inflated and then deflated expectations can be emotionally exhausting and can even threaten the success of an IT project if stakeholders give up on the solution before the major kinks are worked out. The extremes of this cycle can be moderated by setting and communicating realistic expectations about what the IT project will achieve, how much it is likely to cost and how long it will take to implement. Presenters offered a few practical tips for meeting this challenge.

Silva advised, "Whatever the IT provider offers you, you need to use the rule of two. If he tells you it will cost X it will cost two times as much. If he tells you it will take a year, it will probably be ready in two years. I'm not trying to give anyone a hard time; that's just the way it is. I've never seen an IT project that was finished ahead of time and I've never seen a project that was finished below budget. The way to deal with this is to ask the right questions, know what to expect, and manage this like any other project in which you bring out all the variables, you quantify it, and you cost it through before getting started."

> *"You need to be within your budget, so don't dream dreams; build reality."*
>
> ~ Andrew Kimani, EBS

Recognize that IT projects take time. "If solutions are starting from scratch now," Cracknell noted, "depending on the value you want to give to the customer and depending on the level of research and care you're taking in developing the solution, it could take two years to go from the idea to having the idea rolled out. You might have a pilot test before the two years go by, but that pilot test may last six months or more to get the other bits of it right – the training strategy, the distribution strategy, etc."

"Use benchmarking," Silva advised. "In most other areas of microfinance we have benchmarks. We know what our arrears are and what we need to compare them with. We compare them with peer institutions in our country, with the MIX, the average of the MIX; we do all kinds of comparisons with all kinds of indicators. Yet somehow IT has very little benchmarking. I found very few statistics on how much is actually invested in IT, what percentage of operating expenses is dedicated to this, or how much the investment is as a percentage of assets. That is a very important benchmark. If you have a portfolio of fifteen million dollars and someone's proposing that you invest four million dollars in a computer system, it should somehow strike you that you're going to be investing 25% of your assets in a computer. Other ratios I've seen used include: capital investments as a percentage of

portfolio, and annual depreciation and amortization as a percentage of operating expenses. Another interesting aspect that one might want to look at is what does this do to me in terms of unproductive assets. Most financial intermediary managers would feel very uneasy if an amount equivalent to their net worth, i.e., to the equity of the company, was being invested to buy, for example, a building. That's an unproductive asset, unproductive meaning it's not yielding for you; it's not portfolio that's paying you back in interest. Well, investing in hardware and software is also unproductive—by no means as much as the building since you need the hardware and software to operate, and I'm not suggesting that you don't invest in them. What I'm saying is that if you're investing in an amount equal to your equity in an unproductive asset you should pay careful attention to what you're doing."

On the theme of benchmarking, Hany Assaad recommended looking at the IT innovation series on the CGAP website. "They are very well done papers that go into such topics as biometrics, PDAs and smart cards and give you some idea of the benchmarks." One consultant proposed that national microfinance networks work together with IT vendors and consultants in their country to come up with standards on what should be guiding IT adoption in their microfinance sector. "The issue is not that IT providers choose to deliver an inappropriate solution, but rather, that microfinance is a new area. Not many people who are IT people have any inkling into what is involved in microfinance. So when you tell them to automate and you are not giving them proper guidance, then you get an improper system."

> *"The key thing is to manage expectations. You've got to cut the cloth according to what you can do rather than what you would like to do."*
>
> ~ David Cracknell, MicroSave

"Don't launch new products until systems stabilize," Khadija Shamte recommended. The organization and the system need to adjust to each other. Then, when the decision to launch is made, "IT should advise management on real time scales for doing so because if you don't, your management and your marketing people will launch the product based on what you said you could deliver." Then, if it is not deliver as promised when promised, "the product can fail and it can take you a long time to recover."

Robert Pertet warned, "The effects of new IT systems take time to be felt; it's not immediate." Alex Silva gave the example of Banco Solidario in Ecuador, which has heavily invested in IT. "I sit on the Board and, to be honest with you, I am at times concerned with how big a gamble the bank is taking. We would all like to think that it's paying off, and I say 'would like to' because it hasn't yet. It's been a huge investment and, of course, it's an investment that no one expects to yield its returns immediately, but that's one thing you should all be aware of, that when you make an IT investment it never or seldom yields immediately; it's a medium to long-term gamble that you're taking."

18. Test

Test the business and technical assumptions, test feasibility, test timing. Test it with a pilot or with phased implementation. Moving headstrong into implementation without testing in order to speed the results along is a false economy. As Cracknell noted, "If you go to market straight away, you're going to the market with whatever errors are in your solution. That might not be the thing to do. During the pilot test, changes are relatively easy to make and they're not very expensive. When it comes to actual implementation, change can be much more expensive."

Frederick illustrated his point, "Consider, for example, that you're going to implement smart card technology like we're doing in Uganda. We're starting with 2,000 clients. We're first going to figure out the training, marketing, business models, costs, timing and test the technology. Once we get it right with a small group of customers, then we'll roll it out big. But if you start with a big group for your testing, all you're doing is magnifying the problems—and there will be problems; there are always problems. So, if you start with the smaller subset in your pilot, tweak it until it works really well, plan, and then scale up quickly, you'll have a lot more success."

"Do a dry run," says Khadija Shamte. "Try it in a branch that is near the city, work out all the problems, then (and this is a test that's not usually done) use your IT person to bring the system down and see what backup procedures you have."

"Every successful implementation that I've seen," Silva highlighted, "has first started with a pilot through which the problems could be debugged, you could realize whether this is really going to work, and you could actually do several iterations in which you could define and redefine success and find out exactly what it is that you want."

19. Learn from others

Alex Silva was also one of many who recommended that MFIs get the advice of knowledgeable, independent experts. "If, for whatever reason, we don't know enough about IT we should look for expert advice, the same way we do in most other areas that involve the successful operation of an MFI." "Others have been there first," Cracknell added. "Learn from the mistakes of others, particularly at the beginning. Get advice on procurement. It costs so much that you need advice there; you can pay for advice later from the vendor, but that could cost you a huge amount of money and time. If you tie down your contracts more tightly at the beginning or you get advice in how to pilot test your intervention, you are far more likely to save money."

"Listen to the vendor and their experience, says Kamal Budhabhatti. "Sometimes we suggest something to our customers and they think we are suggesting it just because we can get an advantage out of it. Sure, it sometimes happens that vendors take advantage of an illiterate user, but not always. You should still listen to vendors so you can learn from our experiences."

Speaking in more general terms, Cracknell advised, "You need to have a vision of what is possible. Visit organizations. If you can get in the door, get them to show you what they do, and that will give you an idea of what is possible. If you have an idea of what's possible it's much easier to envision what improvements you can make to your own systems."

One excellent source of knowledge that was mentioned on numerous occasions is the CGAP Information Systems Website at: **www.cgap.org/iss_site/**

CGAP's site contains a help desk with an IT glossary, a list of frequently asked questions and answers, and a set of information system process guidelines. The product section provides a listing of various software products, some of which have been reviewed in depth and can be compared to other products in the areas of functionality, scalability, ease of use, quality of management reporting, technical capabilities, and services (implementation, training and technical support). There's also a discussion group, through which one can seek advice, and a resources section, where one can find information on consultants, training, IT initiatives in the sector and other related tools and documents.

Another CGAP resource to keep in mind is the CGAP Information Systems (IS) Fund. Launched in April of this year, the fund is designed to assist MFIs in their process of IS needs assessment, research, selection, design, implementation and even follow up assessment. It aims to do this by building the demand for and supply of expert IS consulting services, using CGAP co-funding. It has already identified a list of consultants, 75-80% of whom are in emerging market countries. As Ivatury stressed, "It's not a matter of bringing in a high-priced consultant from somewhere else; there's a lot of local expertise and we think it would be useful for MFIs to leverage local expertise and that's what we want to do with this fund."

The IS Fund will pay for 60% of consultant costs up to US$ 10,000 per MFI and will ask that the organization commit to using the results to improve its system. The consultant's summary report, which tells quite a bit about the organization's implementation and technology capacity as well as its institutional goals, will be made available on the IS Fund website for donors and investors to look at so they can easily identify institutions that are serious about their information systems and about

achieving their strategic objectives, and may therefore be interesting funding candidates. According to Ivatury, consulting support for technology innovations will also be considered. "At this stage, since we're just launching the fund, we want to keep it broad. If your MFI is at the stage that it wants to try using handheld devices, if it wants to implement an ATM network or a POS network or use a wireless internet system to connect its branches, we're open to considering the consulting part of that effort for funding as well."

20. Communicate

This may be an obvious recommendation, but it is still a critical one. Making IT strategic requires communication at all levels and at all stages of the project's implementation. Why is it important?

- To raise awareness and keep people informed about what is happening and what will happen.
- To eliminate fear and help make people feel comfortable with what is happening.
- To lessen resistance to change and build buy-in.
- To effectively document procedures and systems and define institutional requirements.
- To market the solution; to "sell" its benefits among staff, clients and other partners.
- To increase the quality of the solution.
- To help keep the process on track and on time.

How can an MFI effectively communicate with respect to its IT endeavors? It does not have to be anything special or sophisticated. As Frederick suggested, "You can do that however works best in your institutional culture. Maybe you have monthly all-staff meetings, maybe weekly departmental meetings, newsletters, memos or e-mail. Whatever your standard ways of communicating are in your organization, leverage that to keep people informed about your IT progress and your IT projects."

Cracknell commented, "We've had very good results with MFIs that have put in an intranet. They've used the internal internet to drive their information dissemination so that all front and back office staff have access to the appropriate information for them to do their jobs. You can do training, on-line newsletters, policy and procedure guides, information about products and services, etc. For example, in a large organization, or one that's expanding quickly, you'll find that everyone can't know everyone else and this can create problems as people move around the network asking for information and they're saying, "Who are you?" Having a section on the website that says, 'This is the staff' is a good idea. Online newsletters are another mechanism. In one of our Tanzanian action research partners, the Managing Director used to write a note every Friday and he'd have different people write a note on their department as well and it actually improved internal communication tremendously. People knew what was happening."

"You facilitate sessions with your users throughout the process," offered Frederick. "It's amazing when you bring all the key players into a room and you start talking, you think you're all going to be on the same page because you agreed to certain things a month ago, but you soon realize that you're not. New ideas have come to the business leaders, new understanding has developed within the IT department, and new solution options have come up. So it's important that you have facilitated meetings to look at how your requirements are changing, how your business needs are changing, even within the process itself. These sessions can really be useful in bridging the gap between technologists, business managers and users, in raising or resolving issues, and in gaining buy-in."

Speaking from the perspective of a vendor, Kamal Budhabhatti commented, "Vendors prefer that you have an external consultant consulting between them, as suppliers, and you, as an organization. The advantage for you is that the vendor will be less able to fool you. The benefit we get as a vendor is that when we come up with some suggestions or solutions, the party in between would be able to explain those to you and then we would get the right feedback. So we prefer that you have a liaison that can facilitate communication."

However it is done, the key seems to be doing it regularly and openly. "Don't be afraid to communicate bad news," says Pertet. "Continually check-in with customers and make adjustments to

the design as you learn about the solution," says Frederick. "Have a feedback loop," says Ivatury. Use a process that encourages a two-way flow of information between the producers and users of information, one that can both inform decisions and respond to internal and external customer needs.

21. Make sure people will be able to use your technology solution

"A lot of people think that when you install a new type of system, you have to teach people how to push the buttons and move the mouse, etc., but it's so much more than that," Frederick asserted. "It's not teaching someone which icon you click so they can save their data. It's teaching the concept or function of saving, i.e., you always need to save your work. So when you're looking at training on a new system, it's about teaching people their function within the organization. Why is what I'm doing important? And then, what are the specific skills I need to have to interface with the system and fulfill my function or do my job and do it well.

> *"It's not worth investing in technology if you cannot invest in your staff. People are the most important resource in a system."*
>
> ~ Andrew Kimani, EBS

Remember, systems have no value. You give a system value by wrapping around it all the business and organizational changes that you implement when bringing in the new technology. A rule of thumb is that it takes about $6 to implement $1 of software and hardware. That's a good metric to think about when you're doing your IT budget. If you're going to buy a $100,000 software application, that means you're probably going to need another $500,000 in technical assistance, whether it's in-house or outsourced. You can't underestimate the cost to deal with the people side—the marketing, the training, the technical support, etc. that's required to actually get the business value out of the hardware and software."

So, how to ensure that people will be able to use the technology solution? The institution can create opportunities for people to try out the new technology in a non-threatening environment. Cracknell asked, "Can people trust the POS network or the ATMs or cell phone banking? People need to try it and learn to trust it and see how often it goes right and see how often it goes wrong." Equity Building Society installs a training environment for its staff two months before roll out and it monitors the number of valid transactions that each user carries out, with the goal of having each one capable of achieving a target number of transactions before the system goes live.

An institution can be creative about how it trains people, especially in the rural areas because it does not want to have to wait for support to show up from the head office in order to solve a technology problem. As much as possible, it will want to be able to deal with it immediately, in real time. So any kind of cross-learning it can create within the institution or a network will be useful. A help desk, frequently asked question sheets, and proper documentation of all new procedures and systems can also make a difference.

"Make sure you align staff incentives with new roles and responsibilities," Frederick added. "A lot of people get scared with new systems; they think their job is going to be replaced by a computer and they're not going to add value to the institution any longer. Wrong. But they're probably not going to add value unless you train them to do different types of functions or tasks and you give them the opportunity to do that. That's why we want to automate anyway. Why have twenty people doing data entry when you could have twenty people out in the street selling products? There are always opportunities to use people in the organization to bring more value added, but you need to explain that to your staff, incorporate it into your training process, and make sure pay and benefits support the new roles and responsibilities."

An institution also has to think about loyalty incentives for its IT staff. Cracknell explained, "There's a more intense need for IT capacity within the market in general, so that puts microfinance at a disadvantage. You have to figure out how you're going to keep your IT staff loyal to your institution. What professional development paths do you have? What bonuses do you have? What opportunities

do you have for them to grow and mature so that they feel their skill levels are increasing—that's the number one thing with an IT person. If I feel like my skills are not getting increased and I'm losing ground by being in the job I'm in today, then I'm out of here. It's not just about money. It's about keeping my skills fresh. So that means there has to be a constant learning process. They need to either have time built into their workflows or schedules to access resources that are free online or have distance learning opportunities created for them. As we all know, technology is the wave of the future; it's not going to go away, so those pressures on your IT capacity are only going to get stronger. You need to invest in your IT people, and if it requires, create different salary structures. Don't say you can't afford it because if you do the analysis, I think the point is you can't afford not to."

Of course, it is not just staff members who need to be able to use the solution. All partners, issuers, merchants and call centers need to understand and be able to use it. Customers need to be comfortable with it as well. Cracknell elaborated, "People are not familiar in this part of the world with plastic, with POS devices, with biometric security, with cell phone banking. So you need to help people understand what the solutions are and how to use them. This is in markets where not only financial literacy but also literacy itself may be an issue, so you have to think about how you can explain. In a literate market, you may be able to use a Z-fold, a piece of paper that folds out like a concertina and contains information or instructions that can be packaged with a smart card or other solution. In an illiterate market you might have to have other forms of training or more direct assistance."

According to Cracknell, when Standard Chartered introduced ATMs in Uganda, customer service representatives took people from the queues in the banking hall, escorted them outside, and personally demonstrated how an ATM card works. They did that thousands and thousands of times. After just two years, there were more than 100 ATMs in the country. In Kenya, NIC-Move has created mini-branches around ATMs with one or two staff to advise people on how to use the ATM as well as to promote other products and services.

22. Collaborate

"One of the key questions that MFIs have to ask is, 'Can we develop a solution by ourselves or should we be part of a broader partnership, either with banks or collectively.' Even a bank can't go it alone," argued Cracknell. "Multiple partnerships are involved, including those with:

- *Technology providers*: The company providing the basic e-banking solution
- *Participating banks*: A licensed deposit taking institution—at some point, financial transactions need to end in a financial institution
- *Communications companies*: To provide secure communications for the e-banking solution
- *Card Issuers*: Institutions issuing the debit or smart card solution
- *Merchants*: To provide the basic payments footprint
- *Marketing Companies*: To develop a brand, to develop a promotional campaign
- *Government*: To provide common infrastructure, payment solutions for pensions, benefits, etc.
- *Researchers (internal or external)*: To provide key research on the solution in the design and testing phase
- *Card Suppliers*: Supplying cards
- *Trainers*: To develop training material for internal customers, issuers, call centre staff, and end users
- *Regulators*: To ensure an appropriate regulatory environment
- *Equipment Suppliers*: POS devices, ATM machines, service agents to maintain physical infrastructure
- *Users*: Users could and should be more active in identifying and addressing areas of common concern. People are not talking to each other enough. Common problems are being experienced, and common pressure needs to be put on vendors to come up with solutions. Common infrastructure could be built to respond to common needs.

All of these players are partners in one sense or another in making the solution work. A failure in almost any one of these aspects can result in a failure of the overall solution."

"The idea of integrating and collaborating is something that runs through everything I've heard at this seminar," observed Stefan Harpe. "There is a whole range of issues where competition needs to be outside the door while inside the door you talk about issues that affect everyone and where there's some benefit from cooperation. If this discussion can provide some stimulus to that ability and willingness to collaborate around a common table then I think we will have achieved something that supports the emergence of the microfinance industry itself."

> *"Partnerships need to go beyond sharing of information and services to co-creation. When you want to have growth and change and scale, you're really talking about co-creation, working together to co-create a future."*
>
> ~ Janine Firpo, Hewlett Packard

23. Look for partners, not vendors

In the words of K-Rep's Robert Pertet, "IT investments are expensive, so you need to look at them as strategic investments. Whoever you partner with, you must partner with them for the long-term. They must have your best interests at heart and be in it for the long haul. Be wary of vendors who want to leave you to your own devices. Look for partners not vendors."

Vendors, interestingly enough, had the same advice, "Consider your vendor as a development partner," says Kamal Budhabhatti of Craft Silicon. "Don't consider us as your enemies or think that we're only there because you've paid us. Treat us as family members."

Ron Webb of Paynet Kenya lamented that this idea has been so slow to catch on. "Historically, I find in East Africa that financial institutions are used to dealing with vendors. It's a much more arms-length relationship, a transient thing in which 'I want to buy something from you and then you must go away. I'll only speak to you if something goes wrong thereafter.' It's only more recently that longer term partnerships are coming to the fore. When we first started here three years ago, we found it very difficult to get that concept across. A longer term relationship between supplier and customer was not that readily accepted."

"IT partnerships are just like any other partnership," says Webb. "They're just like a marriage. It's important to pick a good partner; nothing seems to work unless you get that right." Section five of this report explores in more detail the factors to consider in selecting a partner, but what happens after selection? How can partners build a relationship that makes an IT project successful?

"On the strategy side," Webb noted, "We found it to be critical that both of you are sharing the same strategy, the same vision, and have a common understanding of the direction—not how are you doing it, but why. The partnership needs to be mutually profitable. It has to make it make sense for both partners. Often partnerships are very one-sided, and what happens in that case is interest in the partnership wanes very quickly.

Have a clear understanding of what's going to be delivered. Have a properly crafted service level agreement. Absolutely document exactly what you're expecting each other to do. Be clear and concise; it's not going to be cast in concrete. The business environment changes and the demands on your partner are going to change, so make sure you have a means to review that agreement periodically and add in those new functions or features that you require. What constitutes a good service level today will not necessarily be a good service level tomorrow. Make sure you leave yourself room to negotiate that as you move forward.

> *"Have a service level agreement with all your vendors, and consider having an outside expert review it for you."*
>
> ~ Andrew Kimani, EBS

Make sure that you put loyalty into the partnership as well. What we prefer is to do more business with fewer customers. Rather than having 1,000 small customers out there, we'd rather have ten key

partners that we do a lot of business with. Extend the value of the relationship and make sure that you keep each other's attention because of the amount of business that you're providing. Added value certainly means added attention."

> *"We sit down with our vendors and we tell them, this is our vision; this is where we want to go. If you're not ready for that, please tell us and give us a project plan with respect to when you'll be ready for that, how long I will take you to get there, and what resources you might need, because we have to go hand in hand."*
>
> ~ Andrew Kimani, EBS

Budhabhatti added to Webb's list, "First, never employ vendor staff on your payroll. As a vendor, I may be biased, but I have a reason. If you hire someone from the vendor side, then management starts thinking that because you have this person who knows the system inside and out, you don't need the supplier anymore. You start customizing the software and rely completely on the one person. If that person leaves, you're in a total fix, and if you have to ask the vendor to come back, we can take advantage of you by insisting on a higher price. Second, pay vendors on time. If you don't, you give us an excuse for not delivering what you need.

Third, don't demand something which you're not going to use. The reason I say this is because if you keep demanding things you know you're not going to use, it creates a culture between the organization and the vendor in which the organization is always ordering things and not using them. Later, when you have a genuine requirement, we'll still take your requests very lightly and may not deliver on time. So try to be precise with your requirements and when you have a real need, then bring it up. Finally, share project responsibilities with the vendor, and let the project be owned by both parties. That is the only way to be successful. Both unilateral cases lead to failure. If you want a smooth transition, make sure it's a co-owned project."

Microbanx offered a creative strategy for managing the relationship between MFI and vendor—a subscription-based model. "With conventional software you have to pay a lot of money up front and then you hope it does what you want it to do. One way we try to address the real problem of project risk is by offering a subscription model that you can cancel if you don't like it. It's a simple solution because we're confident you will like it and pay the monthly payment, but if you don't like it, you can cancel."

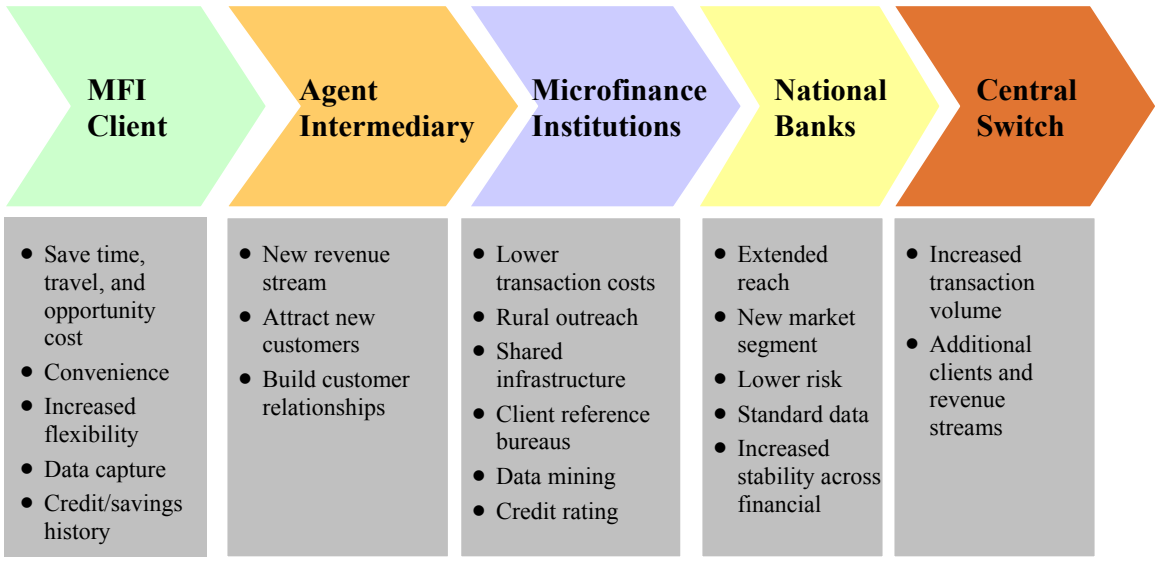
24. Make sure everyone benefits – especially your customer

"There is a value chain in microfinance in the same way you see a value chain in the rest of the financial sector," notes Janine Firpo. "You start with the most important group, which is the MFI client; you find different ways to reach that client through different kinds of agent intermediaries (which could be technology intermediaries); information and transactions flow through to MFIs which can then flow through to national banks which can then flow through to central switches. You can also go directly from MFIs to central switches, but the point is that if you really want to think about scale, you have to think strategically about what all the pieces of the value chain are, how you begin to put those pieces into place, and how each piece is going to benefit."

> *What value does technology create for your customer?*

> *"Everyone has to make some money."*
>
> ~ Tidiane Sarr. FERLO Proiect

It is not enough to understand how the technology solution is going to help the institution internally. The institution also needs to understand the value proposition for the clients. How is it going to help its customers? How is it going to help reach more customers in the marketplace? And, if it is partnering with other institutions, what is in it for its partners? The institution should do its research and let its IT choices be driven by client and business needs, but it is important to remember that everyone in the chain has to benefit. Those who do not benefit, or who do not perceive any benefit, are unlikely to embrace the opportunities IT provides and may even contribute to the failure of the project.



Now that 24 recommendations have been made, readers may find it as difficult to prioritize as seminar participants did at times. One participant specifically asked a presenter, "How do we prioritize?" Cracknell offered one response, "Make sure the functionality is there; make sure the value to the customer is there. If you don't get sufficient value to the customer, you will fail." He used the example of smart cards to illustrate his point, "If there's no reason for the customer to hold your product, if it's just a smart piece of plastic that offers no value to the customer, then it might as well not exist. Cash is a wonderful product and you're competing with cash. If people have cash in their pocket and you're trying to put them onto a card, you've got to offer them something that cash does not. Money transfer is an incredible draw on something like an electronic product, being able to send money to your mother, top up your phone, etc. But if you're using the card simply to replicate what customers can already do with cash, you may end up spending a huge amount of money and not actually offer anything of value."

V. Taking a Look at Some of the Options

"Even though you may be a little skeptical about infrastructure, believe me, by the time you're ready with your application, my infrastructure is there. Once your business model and application are ready, the operators will be ready to support it."

~ Richard Bell, Kenya Data Networks

"When it comes to managing the switch, there are very few people who have the expertise, so you might have to outsource the management of the switch to PayNet or Kenswitch or maybe another player."

~ Andrew Kimani, EBS

"Wouldn't it be wonderful if you could be a little MFI and you've got a line to the Internet somehow and you can logon and buy just a piece of the software that you need?"

~ Murray Gardiner, Temenos

MFIs seek technologies that can help them capture, store, organize, analyze and communicate information. In the past, most MFIs have used manual technologies to accomplish these ends, but today there are many automated options that institutions can take advantage of to manage information more effectively and efficiently. In general, the options fall into one of two categories: 1) technologies that create new types of access points; and 2) technologies that enable access points to communicate with each other and/or with the institution's core information system.

An MFI's core information system (often referred to as its MIS) includes portfolio tracking, internal control, accounting, data analysis, internal and external reporting functions and, perhaps, a savings module, data warehousing, or credit scoring. It is the backbone of any institution's capacity to manage information. In addition to these functions, the core information system also supports the institution's delivery channels—the systems through which the MFI delivers products and services to its customers. Access points are simply the contact points at which customers access those products and services. An access point could be a loan officer, a savings collector, a branch office or a teller window in a banking hall.

This section of the report presents some of the new access point and communication options that were discussed during the seminar as relevant options for MFIs to consider as part of their business strategy.

Access Points and their Enabling Technologies

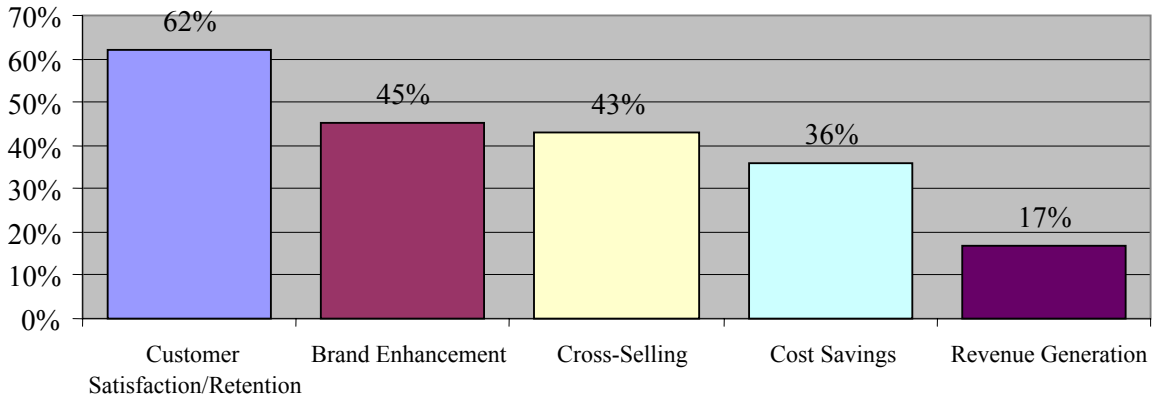
Technology makes it possible for MFIs to greatly expand the size and scope of their current distribution network. As a result, customers are able to access financial information, manage financial transactions, and make purchasing choices through a larger number of more convenient and more appropriate access points. They can transact with their financial institution at their own time in their own way; they can contact the institution through multiple channels and from multiple locations. Such flexibility introduces a powerful element of freedom and choice into the microfinance market.

"For financial institutions," Hany Assaad explained, "what [technology] provides is an additional channel for maintaining closer contact with customers while reducing operational overhead. The most important factor is the closer contact with customers. That is the relationship they're trying to develop. Such contact allows the opportunity to strengthen the overall customer relationship, with the potential to increase account activity or size, while ensuring that the customer's needs can be met at anytime from any location. It supports new, value-added products and services, providing new

business and revenue opportunities that build on existing products, with additional elements of interactivity and immediacy. So when you think of new delivery channels or access points being introduced by the big banks, it is not a cost-cutting strategy or revenue generating strategy; it is a customer-focused strategy."

Assaad shared the chart below, which shows the results of surveys that the IFC commissioned from the Tower Group in 2001.

Figure 3: Why Offer Electronic Banking Solutions?



Approximately 150 banks across all regions participated in the survey and what they found is that banks offer electronic banking solutions first and foremost for reasons of customer satisfaction and retention. Cost savings is a factor only 36% of the time, which shows that the driver is customer satisfaction. "When you look at the first three responses," Assaad notes, "they're all customer related; the last two deal with costs and revenues. That's very important, because when you're thinking of your delivery channel strategy, it is not the cost saving component that is going to drive it."

He continued, "Many banks are looking at mobile phones as a delivery channel. It is not very cost effective for big banks, but they're willing to provide it because it gives them another channel of delivery, of reaching the client. There's also the concept of cannibalization of delivery channels. In other words, if you put a kiosk next to an ATM next to a phone for the same client and they suddenly have three choices, you might expect that the presence of one is going to reduce the use of another. We find the banks don't mind that; they prefer to give customers more choices even though it's going to cost them more because the premise is customer service, not cost efficiency."

Can MFIs follow a similar strategy? Assaad recommends, "Don't think of each delivery channel separately, but rather, how to integrate them. For example, if you introduce telephone banking, there's no need to get rid of ATM machines that you've already invested in, because they target different clusters of clients. Branches are a very expensive delivery channel once you've developed other points of sale, so think about how you can create an integrated system. Use the branch as your core customer relation center, out of which can go mobile kiosks. It doesn't mean you go after all technologies in one go, but it also doesn't mean you have to get rid of the old when you bring in the new."

The requirements, strengths and weaknesses of the main access point options discussed in the seminar are presented in Table 1.

Table 2: Summary of Access Points and their Enabling Technologies

Technology	Description	Requirements	Pros	Cons
Automated Teller Machine (ATM)	A machine that can furnish account information, accept deposits, effect balance transfers, and disburse cash	▪ Reliable and affordable communications and power infrastructure ▪ Central database ▪ Ability to securely transfer currency to machines	For clients: ▪ Convenient service ▪ Flexible account access ▪ Increased hours of operation For MFIs: ▪ Reduced transaction volumes/costs ▪ No staff needed to complete transaction ▪ Can attract savings deposits	▪ Expensive to own and operate ▪ Need for integrated systems ▪ Maintenance & cash refilling is costly ▪ Security issues (including transport of cash)
Mobile Branches	An ATM on a truck or a branch in a bus that goes from one village to another in rural areas which can be served infrequently (e.g. once a week). Combines ATM functionality with operational staff.	▪ Should be combined with smart cards and point of sale devices ▪ MFI staff capable of providing range of services	▪ Full range of financial services ▪ Expands branch network to low density rural areas ▪ Much lower cost than setting up a branch ▪ More secure than a permanent ATM ▪ Not dependent on telecommunication infrastructure	▪ Clients can only transact when the mobile branch is in the village ▪ Higher per unit cost than ATMs ▪ Need a staff of 2-3 to drive and service the mobile branch ▪ Higher operating costs (travel distances, maintenance)
Point of Sale Device (POS)	Small machine located at a point of sale that can be used to authenticate the transfer of funds from customer to the retailer	▪ Retailer buy-in and support ▪ Solid communications infrastructure ▪ Centralized database ▪ Coordination between institutions	▪ Significant reduction of paperwork ▪ No need for data entry personnel ▪ Immediate reconciliation of transactions	▪ Expensive to implement and operate ▪ Need for inter-institutional coordination & shared infrastructure
Smart Cards	Wallet-sized plastic cards with embedded computer chips that can process information or simply store data	▪ Reliable electrical and communications networks ▪ Dial-up facility for updates ▪ Software integration between cards, readers and central MIS ▪ Presence of associated technologies	▪ Store information ▪ No need for real-time connection ▪ Automated transactions ▪ More secure ▪ Quicker administrative functions ▪ Increased transaction accuracy	▪ Need to purchase associated technologies ▪ High upfront development costs ▪ Security issues with stored information
Mobile Phones	Permit client to request information from, or conduct business with, an automated system through their mobile phones	▪ Solid MIS ▪ Centrally stored, real time data ▪ Network availability at affordable rates	▪ Not reliant of poor land-line phone infrastructure ▪ Permits access to rural clients ▪ Frees staff time ▪ 24/7 accessibility	▪ Lack of mobile network in rural areas ▪ High cost of operation ▪ Expensive to install and maintain ▪ Need for centralized database

Technology	Description	Requirements	Pros	Cons
Interactive Voice Response (IVR) Technology	IVR technology allows callers to request information from, or conduct business with, an automated system by speaking into a telephone or inputting information through its keypad	▪ Easy & affordable telephone access for clients ▪ Centrally stored up to date data ▪ Secure databases	▪ Can serve many clients at once ▪ 24/7 service ▪ Frees staff time for more personalized tasks (business counseling, collection calls)	▪ Need access to telephone services ▪ Initial costs between US$10,000 and $50,000 for in-house system ▪ Need for central system to control personal identification numbers (PIN)
Personal Digital Assistants (PDAs)	Small, handheld digital computers that can run specialized programs to manage MFI and client data and perform financial calculations	▪ Well functioning MIS ▪ High speed access to MIS data from branch offices ▪ Capable technical support ▪ Solid institution and good products	▪ Increased productivity of field staff ▪ Applicable to wide range of tasks ▪ Can run various software programs ▪ Can standardize procedures ▪ Reduced volume of paper records ▪ Reduced labor costs	▪ High initial and maintenance costs ▪ Long development process (9 months to 2 years) ▪ Need for custom designed database applications
Internet Banking	Internet technology enables users to perform a variety of banking activities, including fund transfers, bill payments, securities trading	▪ Solid MIS infrastructure ▪ Centralized database ▪ Reliable and affordable communications and power infrastructure	▪ Flexible account access ▪ No staff needed to complete transaction ▪ Increased hours of operation ▪ Eliminates need for data entry personnel	▪ Need Internet access - connectivity ▪ Need for integrated systems ▪ High initial costs ▪ Typically requires higher income and higher literacy rate
Biometrics Technology	Measures an individual's unique physical or behavioral characteristics to recognize and confirm identity	▪ Reliable electrical power for card or biometric readers ▪ Solid processes and adequate staff ▪ Software integration between cards, readers and central MIS	▪ Greater security ▪ Convenience for clients ▪ Local verification ▪ Speedy verification which does not require staff ▪ User identity is stored safely and is tamper-free	▪ Time, money and energy required for setup and maintenance ▪ Need to train users ▪ Slow user acceptance/user refusal ▪ System integration may require changes in other pieces of hardware

Automated Teller Machines

An automated teller machine (ATM) performs many of the same functions as a cashier or teller, but it does so electronically rather than manually. Clients approach the machine, insert their plastic identification card and enter their password, fingerprint, or personal identification number (PIN). As soon as the machine recognizes their identity and retrieves their account information, they can conduct a range of transactions. The machine guides clients through the steps of a transaction using written instructions and/or pictures on a computer screen. Some machines, such as the one developed by PRODEM in Bolivia (see Box 5) can even guide clients through the steps of a transaction using spoken instructions.

Box 5: Smart ATMs at PRODEM FFP

To promote the use of ATMs among the poor, the machines have been customized in many countries. In Bolivia, for instance, PRODEM has taken the core technology and adapted it for use in rural environments to overcome both language and illiteracy barriers. Instead of entering an identification number to access their account, customers place a finger in an identified location to enable the machine to detect their fingerprint and identify the client. After identification, a friendly voice welcomes the customer by name in his or her native language and then guides the user through his or her desired transaction using touch-activated screen icons based on pictures and symbols. The machine speaks in three languages and can be programmed for up to 60 dialects. It operates completely offline using smart cards and a batch processing communications process.

Source: Adapted from a presentation by Hany Assaad, IFC

Customers can use ATMs to withdraw cash, make a deposit, obtain account information and/or transfer funds. From the client's perspective, the key benefit of the machines is convenience. Customers can access them at any time of day or night; they generally do not have to wait in long lines to use them; and they can often access a machine at several different locations or at a more convenient location than the office at which they opened their account.

For MFIs, ATMs can be a cost effective means of providing financial services since staff members do not have to be present in order for transactions to be conducted. The machines can be placed in the same location as a branch office, thus increasing the number of clients that can be served in that location, decreasing congestion in the banking hall and/or maximizing the branch's hours of operation. ATMs can also be placed in locations where there is no branch office, thus increasing the institution's geographic outreach. No matter where they are located, however, the machines must be serviced. Deposit envelopes must be retrieved, cash replenished, and maintenance conducted. This places limits on the ATMs' cost effectiveness, particularly in remote areas.

Currently, an ATM costs between $7,000 and $25,000, although the price is falling (according to one participant, there's a group in India that has built and is currently testing a $700 ATM). Depending on the cost of other access point options and the projected demand for services that can be met by an ATM, the technology may or may not be an attractive choice. Thus far, ATMs have proven most cost effective in urban areas, where the cost of opening a satellite or branch office tends to be much higher than the installation of an ATM and, once installed, the machines are relatively inexpensive to service. In rural areas, by contrast, infrastructure challenges can make it both expensive and logistically challenging to maintain the machines and the communication connections required for the machines to operate.

Mobile (ATM) Branches

With one or more ATMs on the back of a truck , an institution can create a mobile branch capable of serving multiple communities on a rotating basis. In South Africa, 300 such vehicles are reaching 1.7 million pensioners using smart cards and biometric identification. Each month, the trucks deliver

US$150 million in pension and grant payments, which recipients can collect in the form of cash or store on their smart card (see below for additional information on the smart card technology). The use of ATMs reduces pension check theft, fraudulent claims, and transaction costs for the recipients, who would otherwise have to pay check-cashing fees to merchants in order to collect their pension payments.

Mobile branch technology makes it unnecessary for MFIs to create permanent branch structures in areas with relatively low transaction volume. Capital investments are still required to finance the machines and the vehicles which transport them. A staff of two or three people must also be hired to drive and service the branch, although this operational team can provide significant value above and beyond simply moving the branch from one location to another.

As Hany Assaad noted, even in permanent ATM locations it is not necessary that the machines be completely un-staffed. Some MFIs have found that the cost of having an employee present alongside a machine is not very high and can actually generate substantial benefits, particularly when a machine is first introduced. The staff person can provide a certain sense of security to those customers who do not know how to use an ATM. He or she can answer questions, help customers complete transactions, market the institution's other products and services, and sign up new customer accounts. "What happens is that you separate the transaction component from the client service component. The MFI staff person can focus on customer service, rather than the transaction itself. It's not necessary to get rid of the human element." This may not hold true in a country with very high salaries and very low equipment costs, but for a $20,000 machine and a field officer's average salary is $2,000-$5,000 per year, the efficiency gains and customer service benefits gained by staffing the machine can far exceed the cost.

Point of Sale (POS) Devices A point of sale device is a small machine – about the size of a large accounting calculator – that is located at a point of sale and can be used to authenticate the transfer of funds from a buyer to a seller. POS devices can be portable or be housed in a permanent retail establishment.

"The POS device has a battery life of 18 hours if you have the device running all the time. In remote areas, we're looking at using cellular power to keep it charged, but even if your battery runs out, you won't lose the transaction information because the smart card in the POS device stores the information until you download it. It cannot be erased by a cut in power or by a user's request"

~ Jeanine Firpo

How do they work? Take, for example, the case of a beverage distributor who delivers regularly to an established set of retail clients. That distributor could carry a POS device with him so that instead of receiving payment for each delivery in cash, he could input the purchase information into the point of sale device and the shop owner, after entering her account information and password, could authorize a transfer of funds from her bank account to that of the distributor. When the distributor returns to town, the information would be downloaded from the device and sent to the relevant financial institutions so that a funds transfer would be made and both the retailer and distributor accounts would be updated. The distributor would not have to travel with large sums of cash and the retailers would not have to have large sums of cash on hand to pay for the beverage delivery.

The same transaction could also take place if retailers (rather than the distributor) possessed POS devices. Under this scenario, retailers could then transact both with suppliers and with customers, provided customers had access to smart cards, debit cards or credit cards. If an MFI were to establish an agent relationship with a village retailer, the local grocer could become a banker, accepting payments and disbursing cash on behalf of the bank, with the POS device managing the transactions and the retailer managing the cash. If the retailer's device were continuously connected to a communications network, account information could be updated immediately. If the device worked

off-line, the transfer of funds could be made as part of a batch of transactions that would occur once an electronic connection was made.

Smart Cards, Debit Cards, Credit Cards and ATM Cards

Smart cards, debit cards, credit cards and ATM cards are all thin pieces of plastic about the size of a business card that can be used to complete financial transactions. Credit cards, debit cards and ATM cards have a magnetic stripe on one side that stores a limited amount of information about the cardholder, usually just enough information to identify who the cardholder is and where his or her financial information can be found. Once the card is swiped through a reader (e.g., an ATM machine or a POS device) and the cardholder's identity verified (through a password, PIN or biometrics), the cardholder can access his/her funds via an electronic connection. In the case of ATM cards, users can access their current account, checking account or savings account and either withdraw funds, make deposits or transfer funds from one account to another.

Debit cards are essentially payment cards, although most can also be used as ATM cards. Instead of paying for a good or service with cash, cardholders can make purchases at retail locations with compatible POS devices using their debit card. They simply insert or "swipe" their card through the POS device and request that funds be transferred from their account to the account of the retailer.

Credit cards function similarly to debit cards, but they allow a cardholder to make purchases on credit rather than by debiting funds from an existing checking or savings account. MFIs that offer clients a credit line product could use credit cards to efficiently manage that service.

A ***smart card*** resembles these other cards on the outside, but inside it is fundamentally different. It contains an embedded micro-processing chip that can hold up to 800 times the amount of information that a magnetic stripe can, including personal data, account balances and transaction history. Smart cards can function as debit cards and/or credit cards; they can store account information for several different financial products; they can even be programmed to hold and transfer money. Unlike magnetic stripe cards which require expensive terminals and reliable telecommunications to conduct transactions, smart cards store sufficient information for transactions to be conducted off-line using battery-powered readers without a permanent network connection. Eventually, the card readers must communicate their transaction information to update the accounts of the relevant financial institutions, but this communication can happen once every few hours or at the end of each day. Real time access to financial institutions is not necessary to complete transactions because the smart cards themselves carry clients' up-to-date account information.

Where infrastructure exists, smart cards can be used to pay for public transportation, vending machine items, phone calls, loans and other consumer goods and services. They can also be programmed to offer an unprecedented level of security by embedding security technologies in the processing chip on the card. Without question, the functionality options with smart cards are greater than with other types of cards, for example, in terms of the number of products that can be managed with a single card, the transaction history that can be downloaded and analyzed for the purposes of market segmentation or scoring, and the increased protection against fraud. Smart cards can also be more efficient as a result of the bulk electronic settlement routines that reduce communication charges while providing accurate accounts, a fully transparent and tamper-proof electronic audit trail, and reduced central accounting time.

Smart card technology is more expensive than debit, credit or ATM card technology and that is its main disadvantage. Whereas a debit card may cost 25 to 50 cents, smart cards can cost anywhere between four and ten dollars.

Box 6: MFT and the Remote Transaction System, Uganda

The Microdevelopment Finance Team (MFT) consists of eight organizations (ACCION International, BizCredit, Echange, FINCA International, Freedom from Hunger, Grameen Technology Center, PRIDE Africa and Hewlett Packard as the leader and convener of the group) who got together about two years ago to consider how they could bring about a breakthrough in the effectiveness, relevance and scale of microfinance with the ultimate goal of catalyzing an end-to-end system of formal, sustainable financial services. The group decided that if it really wanted to mainstream microfinance, it needed to use technology to get microfinance transactions into an electronic form.

One of the first steps it took was to create what it calls a remote transaction system (RTS). It defined the requirements for a piece of hardware that would be able to capture data from customers, particularly rural customers, who may be illiterate and live in places where there is no connectivity or electricity. Initially, MFT assumed it would have to build a prototype device that could meet these requirements, but it soon realized that POS devices were already on the market that came fairly close to meeting its needs, so it decided to use these devices for its pilot test.

How does RTS work? Each client has a smart card that contains his or her account balance. This is necessary in order for the system to run in batch mode rather than having to be online all the time. Clients can insert their card into the POS device and then make their desired transaction. They can key into the device, for example, the amount of the loan payment they want to make and the POS will produce a receipt that clients can take with them to prove they made their payment, to whom and when. Once the device is connected online, the transaction information is sent to a server and becomes part of the MFI's information database. The server can be anything; just a simple personal computer will suffice. The software involved is very simple and easy to maintain. If something goes wrong, staff can simply shut the server down and then boot it back up again.

To prove that the technology works, MFT has developed detailed business models for its three microfinance partners so that it will be able to show, by the end of the project, that there can be a positive return on investment not only for the MFIs involved, but also for the agents and clients who use the technology. Each partner is testing a different set of assumptions, and the results are being monitored.

One of the partner MFIs, FOCCAS, uses a traditional group lending methodology and is moving from capturing financial information at the group level to capturing individual level information. It was going to have to hire typists to sit at computers and input into its MIS all the little pieces of paper that came in from the field. What it is doing instead is to have loan officers take POS devices into the field and capture this information electronically. The second partner, FINCA Uganda, has chosen to build a small rural branch that is basically a little office. It will have a staff person, a POS device and a safe. From time to time, money will be transferred back and forth between the rural office and a larger regional center. FINCA thinks that it can use this technology to dramatically reduce the cost of a branch and, thus, increase its rural outreach. The third partner, Uganda Microfinance Union (UMU), is going to empower some of its higher-end clients to serve as agents. These people will take the POS device and put it in their point of operation and clients will come and transact with them. UMU will pay a small transaction fee to that agent so the agent will actually have an additional revenue source.

The pilot started in the beginning of 2004 and it will end in December. Based on the results of the business models, MFT plans to create a tool that will allow other MFIs to plug in their own numbers and determine whether or not this technology could benefit their institution.

Source: Adapted from a presentation by Janine Firpo, Hewlett Packard

Mobile Phones

In his presentation on alternate delivery channels, Hany Assaad argued that a cellular phone is the first thing an entrepreneur in a developing country buys. "They don't get a land line and they don't get a fridge. Even in remote locations where there's no electricity, they can get solar panels to run their

mobile phones. Cellular phones have become an important tool and MFIs should think of them as a device through which they can reach their clients."

Some MFIs are already using mobile phones in conjunction with Interactive Voice Response (IVR) technology to enable clients to request account information and conduct financial transactions via an automated system. Customers communicate with the system, which can be programmed for different languages and dialects, by speaking into their mobile phone and/or inputting information into its keypad.
In Zambia, Fundamo has launched a product called Celplay, which allows subscribers to use their mobile phone to pay bills, transfer money between enabled bank accounts, and purchase goods or services such as petrol and pre-paid mobile phone airtime. User costs range between 1.5% and 2.5% of the transaction amount. In just four months, the product has attracted more than 2,000 subscribers.

For mobile phones to be an effective access point, it is unnecessary for every single client or every member of a community to own their own phone. A microentrepreneur who has a phone can sell mobile phone service to the whole community. Community members can use the phone to conduct business, to receive calls from far away relatives and/or to conduct financial transactions. The microentrepreneur can even make "house calls," arranging to meet clients at their place of business or residence at a particular time to make or receive a call. Such microentrepreneurs can become agent access points for an MFI, facilitating access to certain services at a much lower cost than a traditional delivery channel (i.e., physical branch or permanent field staff) ever could.

Personal Digital Assistants (PDAs)

Personal Digital Assistants (PDAs) are small, handheld computers that can run specialized programs to manage MFI and client data and perform financial calculations. They are portable and can run on a battery that lasts up to one month. Their main benefit lies in allowing loan officers to carry the MFI's information and evaluation techniques to the field.

Using PDAs, loan officers can record client information, fill out loan application forms and conduct quick and automated credit analysis in the field without having to return to the MFI office and without having to make multiple site visits in order to make a credit decision. This can significantly increase the efficiency of an MFI's lending decisions by decreasing both processing time and costs.

PDAs can also facilitate the consistent implementation of credit methodologies and operating policies, since their specialized programs guide users through standardized processes. Programs can be written, for example, to accept only a certain range of entries (e.g., a second-time borrower may be eligible for a loan up to a certain maximum amount) or to require that certain steps of the process be completed in a particular order. If a loan officer forgets the order or tries to exceed an agreed upon limit, he or she may be reminded of the MFI's policy and be asked to obtain approval for his or her request from a supervisor.

Since all client data and visit records are stored electronically, the need for paper files is drastically reduced. This cuts printing and storage costs for the MFI, but more importantly, it increases the speed and accuracy with which client information becomes available to the MFI. It also makes that information easier to access in the future for the purposes of planning, analysis and follow up. At any point in time, loan officers can consult an electronic list of borrowers in arrears to plan their collection visits. They can identify which clients are ready to apply for their next loan and set up site visits. They can also identify which former clients have not made use of the MFI's services lately and arrange marketing visits. In addition, the database of up-to-date client information can be mined by marketing, operations and financial staff who may be developing the institution's products and services, monitoring performance, or planning and budgeting for the next period.

Box 7: Alternate Delivery Channels: The Case of Banco Solidario, Ecuador

Banco Solidario is currently applying four technological innovations: Palm Pilots, credit scoring, smart cards and remittance transfer. Together, these innovations speed up processes and save time and money for the bank while lowering transaction costs for clients.

After three years of development and implementation, Palm Pilots are now being used in all fourteen of Banco Solidario's offices and noticeable results have already been achieved. The number of clients served by staff with the Palm Pilot is 49% greater than those without and the portfolio outstanding is 73% greater with a very similar level of risk.

Three different types of credit scoring are currently being used: selection, segmentation and collection. The objective of selection credit scoring is to provide the bank with automated support based on a statistical model that evaluates predictive information from a new loan applicant and generates a score that quantifies his/her probable future performance. The scoring process either recommends denial, low profile manual evaluation, high profile manual evaluation or approval. Decision makers can choose to reject these recommendations based on their own experience but are expected to provide an explanation for doing so.

Segmentation credit scoring is also based on a statistical model, but it evaluates a client's historical information. The score helps loan officers to decide whether to provide subsequent loans, to perform different evaluations and verifications of a client's request, to automatically renew a loan or, for the best clients, to provide an automatic line of credit. In addition, segmentation scoring provides valuable information for collection analysis and helps reduce evaluation and disbursement times.

Collection credit scoring predicts a client's future behavior based on current loan performance. The score is derived as a function of various personal, economic, and activity variables taken from a client's profile and his/her performance in the bank's client database. The score has to be calculated daily, or according to the frequency of payments, and based on this score, different collection strategies can be applied. The tool is being implemented in several offices and is achieving positive results. Total portfolio risk has fallen from 12.7% in December 2002 to 4.5% in December 2003.

La chauchera is a popular term for money purse; at Banco Solidario, it is an "electronic purse" in the form of a smart card. It allows microentrepreneurs to buy the raw materials they need from big industries at wholesale prices; it also offers them a revolving credit line and can function as a debit card. To access La Chauchera, a client goes through a single credit approval which consists of a permanent line of credit. Advisors already have credit bureau information loaded into their Palm Pilots, so they can process the information collected from clients and, if appropriate, negotiate a credit line immediately. Banco Solidario is currently testing this product with massification planned for 2005, but already it has 14,774 La Chauchera clients with a total portfolio of US$4.4 million being administered through the product. It is working with 25 different wholesalers, 164 POS devices and, using the BANRED network, 1,082 ATMs.

Banco Solidario's remittance transfer product is known by the name "***Mi familia, mi país, mi regreso***" (my family, my country, my return). The goal of the product is to channel emigrants' efforts and sacrifice abroad towards building their return, by buying a home or improving their businesses in Ecuador. It also provides a safe method of transferring remittances while giving clients control over the use of those funds in line with their goals. As of December 2003, Banco Solidario has transferred a total of 15,543 remittances worth US $28 million through this product.

Of course, all this innovation had a cost. Product development investments alone are estimated at $23,000 for the Palm Pilots, $100,000 for credit scoring, $363,600 for La Chauchera and $829,300 for the remittance product. If human resource, organizational change, and operational costs are included, the total investment in technology as of February 2004 is estimated at $5.5 million, of which $1.7 million has already been amortized.

Source: Adapted from a presentation by Santiago López, Regional Manager, Banco Solidario

Unlike the other technologies described above, PDAs do not create additional access points for an MFI. Rather, they improve the efficiency and effectiveness with which current access points operate. PDAs can assist field officers, but they cannot stand on their own. Eventually, they must be connected to an MFI's core information system (MIS) so that data can be downloaded to update the MFI's records.

Internet Banking

Many assume that internet banking is too sophisticated to be relevant in rural communities of developing countries, but this is an increasingly false assumption. In rural areas of Northeast Cambodia that have no satellite connection or phone line, men on motorbikes drive from one village to another downloading and uploading e-mail using a receiver box powered by the motorcycle's battery. Once in range of an antenna that is located, for example, on the wall of a village school, the receiver uploads outgoing e-mail messages from the school's solar-powered computer to a processing chip inside the receiver box. Incoming e-mail is simultaneously sent from the receiver box to the school. Newly collected data is stored in the chip until the motorcycle returns to town, where a central processing center (again, typically a school) is equipped with a satellite dish that allows bulk e-mail exchange with the outside world. Doctors at a rural hospital use the e-mail exchange to send patients' photographs and vital signs to specialists in other countries and to receive their diagnoses and counsel.

As another example, a network of bicycle-powered computers gives remote villages in Laos access to the Internet using a simple dial-up modem in the local hospital. The villages use it to get better prices for their crops and for the traditional textiles that they sell over the Internet. Internet access also gives them a telephone link to each other using a technology called Voice over Internet Protocol, or VoIP.

With internet technology already reaching some rural areas, it may simply be a matter of time before rural users are able to perform a variety of financial transactions including fund transfers and bill payments over the Internet, thus eliminating the need for any proprietary physical access point.

Connectivity and Communication

In order for a client to communicate with an MFI, for branches to communicate with headquarters, or for MFIs to communicate with other institutions, networks and payment systems, a connection must somehow be established to link one party or point of communication to another. In order for an MFI's core information system to communicate with ATMs, POS devices, PDAs and other technologies, information must somehow be able to pass from one piece of hardware to another. The connection can be physical or electronic, but ***connectivity***—the ability to connect—must be there.

a. The OSI Stack

Richard Bell, Managing Director of Kenya Data Networks (KDN), introduced the topic of connectivity with a brief look at a model called the "OSI Stack." The OSI Stack is used to explain how data communication works and how it is structured. The stack has seven layers, the top one containing the applications or programs that an MFI might use to organize, query, analyze and manage its information. Although individual MFIs may have some trouble selecting and maintaining appropriate applications, the seventh layer is generally not the one that MFIs struggle with most, and it is certainly not the one that has prevented MFIs from making cost-effective use of technology in their operations thus far. In general, MFI limitations and frustrations are rooted in the bottom three layers of the OSI Stack – in the data communications infrastructure that supports the applications.

The first layer of the stack is the physical layer. It consists of a dozen or so different technologies that physically moves data from point A to point B: fiber optic cable, copper wire, microwave link, radio link, VHF radio connection, an infrared laser, or a VSAT link (which is just a radio wave bouncing off a satellite from a dish off a satellite down to another dish). For example, a GSM radio network uses radio waves as its layer one technology to move data from a mast to a cell site to a cellular phone. Radio waves are the physical link.

Layer two is the switching layer. In a traditional telecommunications network, each telephone was connected to an exchange, so that when someone placed a phone call, a switchboard operator would take the person's telephone line and plug it in to another line going into another exchange and then the operator at that exchange would plug the person's line into another line until the call eventually reached the destination the person wanted to phone. That is known as manual switching. From there, technology moved on to circuit switching with valve-driven exchanges and today there are a number of other layer two technologies that serve a switching function. There is ATM switching, frame relay switching and Ethernet switching, to name a few of the more common technologies, but they are all just switching technologies to get a connection from point A to point B.

The third layer is the networking or IP (Internet protocol) layer. It is at this level that an institution establishes its network and it is upon this foundation that it starts building its applications. One important thing to understand is that Internet service providers work in layer three; they do not necessarily build their own infrastructure; they buy infrastructure from someone and then they build a network on top of that. There is no reason why MFIs cannot do the same.

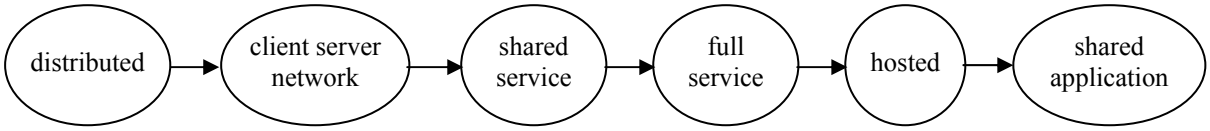
Why does the OSI Stack matter to MFIs? Because MFIs want to get their services into areas where telecommunication has been difficult and where there have been many obstacles to the adoption of information technology. Most financial institutions assume that they cannot do microfinance in these rural areas using IT because they cannot get IT into those areas; they think the infrastructure simply does not exist. Bell and other seminar participants argued that the infrastructure situation has changed, to a large extent. There are extensive mobile networks in Uganda and Kenya, for example, which have a physical, layer one coverage through radio wave networks that covers 60 to 70% of the population. Bushnet, a company serving both countries, asserted that if there is demand for connectivity in a location with a GSM mobile cellular mast, it can meet that demand.

Bell argued, "The infrastructure is already there. The mast has air conditioning for its equipment at the base of the mast, it has stabilized power, it will have a microwave link from that mast back to the nearest aggregation point, so we simply go to the cellular company and say, 'Sell me a big pipe to this mast, let me put a bit of equipment into that mast site, mount it on top of your mast, and I can start providing broadband service in that area.' But as you'll hear from others, you don't even have to do broadband service. Even over the GSM network, you can do a huge amount of work in layers three to seven of the OSI Stack with the existing infrastructure that's in place. In Kenya, we have a service with Kencel called Access 350 where you simply have a simcard, you plug it into your phone, you plug your phone into your personal computer, you dial 350 and you're connected to the Internet. All we've done there is to connect a port of the switch in Nairobi to an ISP (Internet service provider) and, using the KenCel physical layer 1 and 2 infrastructure, enabled you to get from a mobile phone anywhere within their coverage back to that switch in Nairobi.

That's the tip of the iceberg. Now that layer 1 and 2 infrastructure is more widely available, what everyone is now doing is finding quicker, better, more efficient ways to get productivity out of that infrastructure. You'll see in the next couple of years that people are compressing data and moving it in a variety of ways to make it more efficient. They're using GSM infrastructure and SMS applications to harness the infrastructure even more. Where demand is greater and there's a broadband requirement, you'll see people are using that infrastructure to deploy their own overlaid infrastructure on top of what's already there. The good news is that I believe the infrastructure, at least in East Africa, is ready for you to do what you want to do with it."

One participant expressed skepticism that wireless communication networks could be affordable for rural communities, even if they are available, but others responded that the cost of wireless equipment is already within reach and is falling by the month. 802.11b radios, or "wi-fi," which many people use, are less than $10 each. Can there be a line of sight problem in areas with mountains, forests or other physical obstructions? "Sure," Bell argued, "but the costs are coming down so much that you don't have to worry about the mountains. Just put in more infrastructure. It's actually a cheaper way to do it than trying to use really expensive infrastructure to get around the obstacles." MFIs can

Figure 4: Connectivity Continuum



collaborate with each other and/or with the network supplier to co-finance this infrastructure and make it more affordable for all concerned.

b. Shared Services

In setting up connectivity solutions for an institution, there are a range of options to consider. Murray Gardiner of Temenos presented these in the form of a continuum. As shown in Figure 4 below, at one end of the continuum is a distributed model in which each site or branch manages its own technology and the individual units are not centrally connected in any way. At the other end of the continuum, branches are not only connected with each other, but they are also connected to a range of applications and services that are provided outside the institution's own infrastructure. Each stage of this continuum is briefly described below, followed by a series of four case studies that help to illustrate how institutions have implemented some of the connectivity options.

Option 1: Distributed. As introduced above, this option consists of individual sites that are not centrally connected in any way. Each location must have sufficient skill to manage its own database locally. There is no consolidated view at the head office level, so the institution depends on each branch to submit regular reports from which it can create a snapshot consolidation of the institution's position at a particular moment in time. The roll out of any new IT solution or upgrade is necessarily slow because the process has to be managed on-site, branch by branch. Any service provided by the head office requires physical travel to a branch. Connectivity requirements are minimal, but information management capacity is limited.

Option 2: Local Client Server Network. Under this option, each site or branch is connected to a central database that is managed internally at the head office. This option allows the institution to consolidate and, therefore, to leverage its skills. It does not need to have highly trained specialists at each branch; it only needs one or two at the head office who can support the rest. Upgrades, changes and fixes can all be managed from the head office, which facilitates faster implementation. Moving to this kind of shared network is a natural step in a progression that allows a financial institution to reach some kind of scale.

Option 3: Shared Service. This option goes a bit further, allowing the institution to have an outsourced relationship in which a central database is physically located on the institutions premises, but it is managed by someone else at a remote location outside of the institution. The arrangement allows the institution to access a higher concentration and depth of IT expertise than it could possibly maintain internally, even at a head office level. Essentially, instead of building high-level internal IT capacity, it sources that capacity from a vendor that is supporting similar technologies elsewhere. Such service providers can monitor and maintain the institution's applications and operating system; handle archiving, upgrades and backups; provide period reports and performance indicators by email; provide skills training for its systems administrator, IT manager or other onsite staff; keep technical and process documentation up to date; develop new functionality based on client requirements; and assist with change management processes more generally. With this option, minimal application and database skills are required onsite and the service provider guarantees a certain standard of application performance.

Option 4: Full-Service. This is an extension of option number three in which the onsite staff is actually employed by the service provider and all equipment would be provided by the service provider as part of a bundled package. The central server is still located on the institution's premises, but the management of the IT infrastructure is entirely outsourced and run remotely. If the institution grows beyond the capacity of a certain piece of hardware, it can easily swap it for something larger because everything is leased from the service provider. The provider essentially becomes an IT

consulting group for the institution. Under this arrangement, MFI management can focus on strategic issues, understanding how they can use technology and grow their business without having to manage the IT infrastructure.

Option 5: Hosted. The next stage is to move the institution's server off its premises and into an external facility with multiple servers and higher levels of security. The host provides a bomb-proof environment where it can manage the operating system, server, hardware—the whole technology—and the institution just has a connection to that center. In addition, the institution can have a third party (the application support provider) who's also connected to that facility. The host just provides IT infrastructure in a central facility, someone else runs the application, and the institution is the one that uses the application. This option provides the advantages of a shared or full service agreement without the cost of maintaining an onsite environment, and with the added benefit of improved security.

Option 6: Shared Application. At the far end of the continuum is the shared application service provider (ASP) option. It offers all the advantages of the hosted ASP option plus additional services that may be relevant to the institution's particular business. For example, the shared ASP could offer on-line enquiry services, reports, financials, budgeting, accounting, credit scoring tools, market information, online chat or user group forums, e-learning opportunities, product manuals, video clips, training courses, a call centre, a help desk, etc. This could be a particularly attractive option for small MFIs who do not need and cannot afford the full banking application required by a large financial institution, but do require certain elements of it. As Murray Gardiner commented, "Wouldn't it be wonderful if you could be a little MFI and you've got a line to the Internet somehow and you can logon and buy just a piece of the software that you need? If you could buy a loan product and pay per click or account per month via the Internet? We will get there. We're moving to an environment in which there's more and more shared application."

The further an institution moves along the continuum, the more it can capture economies of scale by having a center where it has got a concentration of skills and infrastructure. Does this mean it necessarily loses its competitive advantage? Gardiner argued, no. "Even if you share skills and infrastructure with others, your application (whichever application you're using) is still your application. You can take your server and put it somewhere else, or have your server on your site with your specific configuration and just have technical experts come in and manage that server. If you go to the other extreme, where you're logging onto the Internet and having access to tools, that's going to be for very small institutions. The continuum is not a progression in terms of scale of organization. The larger organizations will do it all in-house. For very small organizations that want to have access to that kind of technology in a shared application environment, they still need to have their own configuration; they still need to have access to technology that is flexible enough that they can fine tune to their specific market; and they have to be able to make choices about how to use that technology."

Gardiner continued, "There are people that are very good at running facilities and environments; there are people that are very good at running networks; and there are other people that are good at designing and supporting applications. So it really takes a partnership between three types of entities: 1) someone who provides the application software and support, i.e., the tools; 2) someone who's an expert at the network environment; and 3) someone who's able to run the systems and services infrastructure. For this to work at the right level, you have to get those alliances together and make them work in concert. You need a local champion to manage the relationships and to drive them forward. And that's wrapped with a deal that includes billing and pricing and marketing of the service and the facility—a business driver if you will."

The four case studies below explore some of the concrete options along the connectivity continuum and provide several examples of the technology options that MFIs have actually chosen and how they implemented their decisions.

c. The Case of Bushnet, Uganda

Adapted from a presentation by Matthew Rudd, Managing Director, Bushnet
Ten by Ten is a rural wireless network launched by Bushnet which started off about two years ago and has been growing ever since. It is considered to provide the first and the last mile by working in synergy with a local GSM (Global System for Mobile Communications) operator, literally piggybacking them. It straps its small antennae onto their existing large masts, and leases from them their leased links. Everything it does is really a blend, taking the best of the wireless technologies known as 802.11a and b and blending them to come up with something that is ten times faster and ten times cheaper than the typical satellite. That is where the "Ten by Ten" name comes from. Bushnet is confident that the technology is infinitely scaleable, given what they have been able to install already, and very upgradeable to catch the next generation of wireless devices. They are setting themselves up to be the first application service provider in Uganda, hosting services from Kampala distributed in rural areas.

Particularly since MTN came to the market as the second national mobile telephone operator, there has been a very efficient and competitive environment in Uganda, which means that there is infrastructure pretty much all around the country. This bodes well for the microfinance industry as it tries to get out and reach poor people. Where GSM goes, MFIs can follow. Bushnet feels that they have proven this.

Bushnet knows that MFIs do not want it to cost much to get connected and they feel that $600 for the equipment to connect a branch anywhere MFIs like on Bushnet's network represents quite good value. Installation is easy. Provided the MFI in the line of sight of one of the MTN masts, it is a four hour install. There is a fixed monthly cost and Bushnet guarantees a high percentage of up time and a dedicated minimum bandwidth. In other parts of Africa people are used to hearing, "Well, you're asking for 32 kilobytes per second and we'll give it to you if we can." Bushnet's model is slightly different because of the strong infrastructure of MTN. They can guarantee a minimum of 32 kilobytes per second with the possibility to burst, i.e., when the network is not busy, the MFI can have up to two megabytes of bandwidth per second. They are trying to keep monthly costs low, below $200 for 32 kilobytes per second bandwidth, and there are economies of scale to that.

Slowly they are attracting MFIs onto their network for branch connectivity. This is going to become an even more viable option now that there is a new computer terminal on the market called WYSE. It is much less expensive than a computer; it is not necessary to store redundant applications on it; and there is little chance of it failing because the fan broke or the power surged. It is much more robust and much more appropriate for IT solutions that involve multiple locations, particularly multiple remote locations. WYSE is just a terminal that accesses information and applications from a centralized server, which can be located in an urban environment and be easily maintained for the benefit of many branches. A system built with these terminals can drastically reduce IT costs—typically by 20-30% with savings of 70% possible in the right situation. In addition, data security can be improved; adjustments can be made more quickly; business processes can be more flexible; and the IT system can accommodate more rapid business growth. Staff can access information from anywhere, anytime. It takes one small solar panel and a 12-volt battery to get power for 36 hours minimum guaranteed. As long as a mast can be seen, there is a possibility of having a terminal with very high access speeds to either the institution's network or to the devices it requires.

d. Branch Connectivity: The Case of Equity Building Society, Kenya

Adapted from a presentation by Andrew Kimani
As recently as 1999, Equity Building Society (EBS) had manual systems, poor reporting, and weak policies and procedures. It took more than 20 minutes to serve one customer; banking halls were crowded; employees were over-worked and morale was extremely low. At the same time, customers were becoming more sophisticated and their financial expectations increased. New product development demanded holistic, timely and accurate reports about customer profiles, credit trends and repayment performance.

The year 2000 was a turning point for EBS, which calls its shift in strategy the "Millennium Technology Embrace." It enacted a computerization program through which banking software was implemented on a phased basis, staff was trained, and computers and local area networks were implemented across all branches.

When it started looking at the different kinds of networks and database models available, EBS considered three main options: distributed systems, centralized systems, and hybrid systems (which is really just a combination of the other two). Distributed systems assume no connectivity within the branches. This was the model adopted by EBS at the onset of computerization in 2000. All branches had their own servers and the only available connectivity was through the telephone.

Under a centralized system, branches connect to a centralized server with dual redundancy built in. Branches do not have a local branch server. The centralized server allows external vendor middleware to be connected to allow for holistic extrapolation of transactions and reports, e.g. ATM switches, data warehousing models, and audit tools. The system assumes fully online 99% availability of the branch network and 99% availability of back up lines in case there is a failure in network connectivity. This is important because customers cannot be served if there is a failure. A centralized system assumes that reliable communications infrastructure is available. If an MFI is considering a centralized system and it knows it wants to go to rural areas, technology will dictate where it can go rather than the other way around.

EBS ultimately chose to adopt a hybrid system. All of its branches connect to a centralized server, but they retain their local branch servers. Online availability of the network is assumed, but the model allows for a fallback option through local branch servers when connectivity fails. If the system goes off line, people in the branch can still be served locally; it is only inter-branch transactions that cannot go through. The centralized server still allows for holistic extrapolation of transactions and future products can still connect to the centralized server.

Since the hybrid system offers a local branch server to fall back on, it is unnecessary to build redundancy into the lines of connectivity. An MFI does not, for example, need to have two different communication lines from two different vendors to connect the same branch to its system just to increase the odds that if one goes down the other can still keep it connected. Rather, the institution can go with a single line and if its connection temporarily goes down, it can use its local branch server. This brings the cost of connectivity down. Some form of reliable, efficient connectivity is still needed, however, in all branches.

Once EBS knew that it wanted a hybrid system, it still needed to select a connectivity solution. It designed a connectivity matrix which it used to determine the most appropriate connectivity choice. It considered VSAT, microwave, digital leased line, ISDN, dialup telephony and two systems of GSM, and it actually ended up choosing both VSAT and microwave options. Microwave connectivity was preferred because it is fully symmetrical, which means that if a certain amount of data enters the system at speed X it should also leave at speed X. VSAT, by contrast, is asymmetrical and this can create bottlenecks. Microwave is also much cheaper and is not subject to major latency issues (i.e.,

delays that can result from transferring information via satellite). However, an MFI branch that does not have a cell phone mast in the area where it operates cannot use microwave. This is why EBS chose to start with VSAT connectivity in some branches, with a plan to change to microwave when microwave sites become available.

e. Breaking Growth Barriers with Branchless Banking: The Case of TEBA Bank, South Africa

Adapted from a presentation by Dirk Bruynse
TEBA Bank is a savings-oriented bank that has its roots in the mining industry, providing salary remittances in difficult environments. It has been providing banking services to rural and urban areas for the last 100 years, but has focused on rural operations. It is a regulated retail bank with total assets of US$280 million, savings deposits of US$185 million, 150 points of presence and 700 staff. Its e-banking solution had the following objectives:

- to provide services in users' own environment in which they could do banking and finance transactions for convenience and accessibility; to reduce the risk of handling cash;
- to provide low-cost financial services to rural and under-serviced communities; and
- to provide a system that delivers efficient payments linked to a bank account.

To meet these objectives, TEBA endeavored to essentially eliminate the need for cash in its environment. TEBA determined that the most efficient way to handle transactions was to create an automated, centralized processing environment. In order to provide the lowest possible cost of banking, it aimed to make that environment as efficient as possible from every single aspect. Communication into and around the centralized environment was vital. Data had to be session-based because the smaller the amount of data, the more cost effective communication would be regardless of the mode of communication. Existing infrastructure had to be used whenever possible to avoid spending capital on building infrastructure.

From an accounting perspective, the system had to integrate fully into a general ledger and have full activity based cost tracking as well as per transaction settlement (not bulk settlement because that requires manual intervention and manual processing), no month or year end processing, and multi currency operability. It had to integrate all applications including electronic funds transfer, ATMs and POS devices to minimize operations costs. In terms of the IT platform, the solution had to have the simplest operating system configuration possible and the back-end processing had to be resilient with multiple, redundant operations for high availability, a full transaction audit log separate from the database log, inherent fault tolerance, etc. It also had to build this in a way that anyone—even someone with very low levels of IT skill—could maintain it.

The solution that it came up with was an application that is written in an open source language called Erlang, which is used in the telecommunications industry where cellular networks switch far more transactions than any bank. It used a GSM network to enable its POS, and it used wide area networks (WAN) and Internet for its branches. The structure upon which the software is based is completely scalable. It can be used by the smallest MFI right through to an international switch on exactly the same technology. And it was not as expensive as one might think. To implement processes, procedures, write the software from scratch, buy the hardware, implement the network and buy the POS, it cost TEBA less than two million pounds, which includes everything from salaries to marketing.

Creating the system has translated into competitive advantage for the bank. It has a patent that allows it to seamlessly reissue a lost card without a branch infrastructure; it has point of sale card issuing that allows agents to issue cards on behalf of the bank; it has the lowest cost of communications in the market and its cost of maintenance, deployment, switching, processing and hosting is the lowest in the industry as a result of the efficiency of its processing. Every single transaction it processes is an

online transaction, which means that it can check exactly what is happening to a client's account at any time and that reduces its risk, which again translates into lower transaction costs.

Another notable advantage is that TEBA's cards can be used to transact in any payment stream as a result of their multiple account number structure. This allows a person to transact with other deposit takers such as the Post Office, a franchise branch infrastructure, ATMs, etc., which means that a retailer (depending on all sorts of regulatory requirements around that retailer and the size of that retailer) now has the ability to perform banking functions for a fee. By working through such retailers, TEBA can avoid the full cost of creating a branch infrastructure. It can use the face to face communication of the retailer, who is usually a trusted member of the community and has been doing business there for years, and just leverage the relationship to allow the retailer to sell another product—a banking product.

f. Introducing Smart Card Technology into MFIs: The Case of FERLO, Senegal

Adapted from a presentation by Tidiane Sarr
Ferlo is the result of collaboration between two companies: AfriCap, a specialized investment fund for MFIs, and ByteTech, which specializes in supplying an electronic payment system. The two companies decided to install and operate an electronic payment platform that could be used by all MFIs in Senegal. The project was launched to test the viability of a shared platform for the industry, with ByteTech providing the intellectual property and AfriCap providing the operating capital.

Ferlo expects that the project will improve the services that MFIs offer to their customers by:
helping to relieve congestion at cash points;

- increasing the volume of transactions while reducing processing costs;
- facilitating access to non-financial services such as insurance and prepaid phone card sales;
- reducing the management of cash and the risk of theft; and
- modernizing the MFIs and improving their image.

The pilot began in March 2004 and will last eight months. In the business model that was put in place, Ferlo is a service provider. It is not selling a platform; rather, it is acquiring transactions from different points (e.g., from an internet café, a POS device, an ATM, etc.) and delivering those transactions to subscriber MFIs. The operation of the shared platform has been outsourced to ByteTech.

A multifunction smart card has been created which gives users access to five basic services: membership, savings, credit, funds transfer and internal payments. Because smart card technology was chosen over magnetic strip card technology, this functionality can be increased significantly over time. It is projected that the pilot will have 1,000 card holders, 20 POS terminals, two ATMs and four reloading points split between the institutions. There is also one personalization center through which MFIs give their information and Ferlo returns information relevant only to their clients. It is a closed user system, so no MFI has access to another MFI's client information. Neither can clients from one MFI make a transaction into another MFI. An international standard service platform is being used, which provides the opportunity for interconnectivity with other platforms, like an authorization switch for a VISA program.

The business model is based on an MFI entry ticket. There is a subscription fee of $2,270 and annual maintenance and management fees of $1,360. Each client card costs $9. In terms of pricing, two important decisions were made prior to launching the pilot. First, in order to remove as many barriers to entry as possible, AfriCap decided to subsidize the subscription fees and the annual management fees during the pilot phase. However, MFIs know the full cost and they know that AfriCap is subsidizing the cost. Second, to avoid having access to the product be entirely free, the cards for the end user are sold to the MFI. In a normal business process, the MFI would then sell the cards onto

their customers, but in Ferlo's contract with MFIs, it is stipulated that MFIs will pay for the cards on behalf of their clients and not pass on that cost during the pilot phase. Ferlo did this because it wanted to capture transaction volume quickly and if clients had to pay for the cards, take up would be slower. Also, since this was only a pilot and no one new if it would succeed, selling the benefits of the card to end users would have been difficult.

Revenue is shared by Ferlo and each MFI because it is a partnership. A small, flat fee is charged on each client transaction at a POS, ATM or cybercafé, 80% of which goes to Ferlo and 20% to the client's MFI. Currently, there is a great deal of discussion about whether this is an appropriate split and whether larger MFIs should get a bigger piece of the pie, etc. and the pilot is taking this into consideration as it tests the revenue sharing model.

g. An ASP Alternative to an In-house System: IBM's Mexican Experience

Adapted from a presentation by Marcelo Pérez, IBM Business Consulting Services, Mexico
There are a number of projects being implemented in Mexico through which the Federal Government supports MFIs: a technical support project, a training project, a technology platform (Application Service Provider) project, and "La Red de la Gente" which is an alliance between BANSEFI (the National Savings and Financial Services Bank) and the regulated Popular Credit & Savings entities. The goal of the Application Service Provider (ASP) project is to support the development of Popular Credit & Savings entities through a technology platform that would integrate institutions and allow them to take advantage of economies of scale in order to reduce costs.

A shared platform is expected to:

- facilitate supervision of the entities;
- allow them to better manage their financial services and products as well as their internal administrative processes;
- enable BANSEFI to provide additional services such as treasury, risk evaluation, trust management, etc.; and
- assist entity Federations in providing services to their members.

Through BANSEFI, which will act as an ASP, microfinance institutions, credit unions & community banks will gain access to technology and systems, such as remittance transfer networks, that will allow them to increase the products and services they offer to customers. As BANSEFI assumes its new role, it will pass its more than two million savers around the country to MFIs as part of the Government's new approach to small savers.

IBM will be BANSEFI's partner in implementing the technology solution, but BANSEFI will own the solution itself. The US$35 million project is funded by the World Bank, which covers the cost of consulting services, software licensing, training, business process design and support services, but excludes hardware. MFIs will pay a per transaction fee to access the shared platform.

The technology platform will be an integrated solution in which components are sourced from different companies. BANSEFI plans to provide an open platform in order to facilitate regulation of the overall solution and to enable easy and affordable user access to the system. It plans to deliver the service to MFIs in a variety of ways, including satellite communication, broadband connections and remote units (e.g., a truck with a satellite channel) that can reach branches in rural areas. Finding a way to provide its service to every branch, no matter where it is located, is one of the biggest challenges that BANSEFI faces in implementing its solution.

VI. Choosing an Appropriate Technology

"It's not about the technology. You have to look at information systems in terms of the organizational context. You have to look at your strategy; you have to look at your processes. You have to look at the people who are using it. Business and technology should work together."

~Robert Pertet, K-Rep Bank

"It's high time that MFIs thought about their access to technology the way microfinance clients think about access to technology – it's not ownership; it's access."

~ Laura Frederick, Echange

"The choice comes down to what clients need and want. The profile of the client will dictate your choice of technology."

~ Hany Assaad, IFC

Obviously, microfinance institutions have numerous options from which to choose as they attempt to define a strategic role for IT within their organization. This section summarizes seminar discussions on how to choose among the available technology options. Participant comments are grouped into five categories, each of which addresses a particular question: 1) where should an MFI start; 2) how can an MFI get the right fit between its needs and its chosen technology; 3) should an MFI choose in-house or outsourced solutions; 4) should it consider shared solutions; and 5) how can it select the right vendor or partner?

Where Should an MFI Start?

In the words of Elizabeth Littlefield, "The world of technology can be broken into two very distinct components: 1) the core MIS or information systems; and 2) the delivery systems. It's absolutely imperative to get the core MIS right first before building any kind of delivery system on top of that." Littlefield's comments were affirmed by others, including Alex Silva, "There is no sense even thinking about other applications if the basics are not in place. As a board member, I would not even discuss the issue of moving forward with a more advanced IT application like ATMs or POS devices if I were not satisfied that the basic applications were already up and running to the satisfaction of management."

Silva later continued, "It's not adequate only that the system is working well; it must also be appropriate for the size and demands of the applications you are thinking of introducing. It may sound so obvious, but we have seen several cases in which an MFI's MIS was working well for the things it was doing, but then it introduced additional IT applications and the whole system just clogged up. Instead of becoming more efficient, the system became completely inoperative."

Participants described the core MIS as "the basic building block" or "the central nervous system" of an MFI, yet they acknowledged that it is often one of the weakest components of the institution. As noted in section two of this report, 64% of African MFIs still operate with manual information systems. Thus, for most institutions, the most strategic application of technology will be to strengthen their core MIS.

But how can an MFI know what to strengthen or how to strengthen it? And if the institution feels it already has a reliable MIS, how can it discern which other technologies might be appropriate for it to introduce?

As described in section three, MFIs should begin by defining where it is they want to go and what they need in order to get there. Looking at a list of technology options and selecting the one that seems to be most exotic or "cutting edge" is not the best way to start. Rather, the institution should:

1. know its business objectives;
2. research its needs, options, available resources and current environment;
3. define its priorities and limitations; and then
4. select the technology that can best meet its highest priority need given its limitations.

As Laura Frederick said, "You have to go back to your business goals. You have to go back to your environment and your context. What is strategic for one organization is not a strategic choice for another organization."

Selecting an appropriate technology is essentially a process of defining what priority needs are and then choosing the technology (or technologies) that can best help meet those needs. Frederick continued, "Accounts payable is not your most critical business process. Making a loan decision, getting collections and repayment; those are critical processes. When it comes to implementation, a lot of people start with accounts because they think that's an easier entry point, but what's most critical? What's going to bring business value to your organization—getting your accounts a little more automated or getting your tellers faster? How you order the implementation of technology should always be driven by the business value and the business goals."

The number of needs that can be met with an institution's available resources will depend on the size and type of needs it identifies as a priority and the size and type of resources that are available to address them. For example, if growth is the focus of the institution's business strategy, then the scalability of the technology will be important. Finding a software application that works perfectly today will be insufficient; the institution will also need to look at what will happen when it grows.

The specific technology to choose will also be dependent on its feasibility in the current environment and the cost relative to other available options that also meet the need. Will external factors support or at least allow the introduction of the technology under consideration? Is appropriate connectivity and communications infrastructure available? Is the financial marketplace sufficiently developed? How much banking and retailing infrastructure already exists? How much potential is there for partnership? How financially literate is the market? How much trust already exists?

How to Get the Right Fit?

To get the right fit between needs and a chosen technology, participants offered the following suggestions from their own experiences, stating that an institution needs to:

- Know its business strategy, objectives, who its clients are, and what product(s) it wants to deliver, before it starts thinking about selecting a technology.
- Be as specific as it can with respect to its needs, priorities and objectives.
- Decide what it wants its chosen technology to do before it looks at what the technology is capable of doing. As Alex Silva explained, "When you're buying a car, you first decide what kind of car you need. Are you going to be driving on dirt roads? Are you single and need a sports car? Once you know what you want, you go out shopping for cars. Of course, once you've seen the cars, you may want to adjust a little bit what you designed. Once you've seen the specifications of the IT systems available to you, there may be a couple of procedures that need to be adjusted. But basically, you design your operational requirements first."

> *"For a long time in Africa, top of the range, multi-function ATMs were deployed everywhere even in locations where only cash dispensing is required, and that's a much more expensive device than it needs to be – more expensive to purchase and maintain."*
>
> ~ Rob Webb, PayNet

- Know what problem the IT solution is supposed to solve.
- Remember that clients' needs are the institution's needs;
- Take into account client culture, preferences, ability to change and financial literacy levels.
- Undertake proper segmentation in order to determine clusters of customers that can be served by the same technology.
- Consider the widest possible range of options including both manual and automated solutions, existing infrastructure that could be modified, solutions that must be built from scratch, solutions that help maintain what is already there, in-house solutions, shared solutions, outsourced solutions, and proprietary solutions.
- Employ risk managers and designers to design risk management mechanisms into the solution.
- Keep the design simple, especially when pilot testing something new. Even if the technology itself is not new, the application of that technology in the institution will be new to staff and customers.
- As much as possible choose something that can be controlled from a central position.
- Not be impressed by hi-tech solutions or intimidated by the vendor using unfamiliar terms or vocabulary. Try to get a system that it understands and that is working as it should be.
- Not assume that manual systems are necessarily bad. If it is a small institution serving a small number of clients, its mission does not involve large scale growth, and it is able to produce the reports it needs, a manual system may be the right system.
- Identify holistic solutions. The institution should not just focus on creation and set up, but think about implementation and distribution strategy as well. As Cracknell explained, "It's not just how we're going to set up our POS devices or our ATMs or what we're going to use, but also how are we going to maintain that, how are we going service it, how are we going to support the merchants if they use the POS devices?"
- Before making decision, convene a task force, and have a business or marketing person there to drive the process, not just finance, accounting, or IT staff.
- Select the best technology that meets a particular need, not just the best technology. The right technology may be a technology that has been discarded by someone else or has not worked for someone else.
- Explore solutions that focus on customer needs first. Start with the highest customer need even if it is not the most profitable for the MFI.
- Let the person (or people) analyze the options, but then sit down and let them explain what it all means – not just in terms of cost – but what it means to have this service.
- Focus first on the functionality needed then at how much it is going to cost. The institution should not be distracted by the hype and the bells and whistles and the stuff that are not needed.
- Make sure to have the human resources to implement the desired solution.
- Consider all kinds of costs: set up costs, monthly costs and maintenance costs.
- Look for opportunities to leapfrog. As Richard Bell argued, "What I say to you as MFIs is: don't do what the big banks are doing. You want to get to rural areas cheaply and the way to do that is not to go for lacy networks. If you try to run your businesses the way the big banks run their businesses, you're not going to be able to achieve your aims. The only way you're going to be able to achieve your aims is by harnessing new and cheaper technology. Don't go for the more traditional stuff; it's history."

Do It Yourself or Outsource?

In terms of acquisition, the range of technology options can be divided into three main categories: 1) generic technologies that have been developed and tested for a mass market and can be bought "off the shelf;" 2) specialized technologies that have already been developed by someone else and could be modified to meet an institution's needs; 3) technology solutions that do not yet exist and would have to be built, either in-house or by an external partner.

Existing options, because they have already been developed and tested and are available for mass consumption, are typically less risky and less expensive. They are also less customized to a buyer's individual needs than a home-grown solution. It is for this reason that MFIs have traditionally opted to build their own information systems rather than to buy an existing product off the shelf. According to Ivatury, "Only 11% of MFIs have actually bought something. Most institutions tend to have the view that they're special; they're unique; they have unique clients or products; they have unique circumstances and whatever's out there cannot work for them. Frankly, that isn't true. Most institutions are more common than we would think and a lot of the software out there could support them."

"In the past, it was the norm to do it yourself internally," says Cracknell, "but we're moving away from that. What may have worked well for you with one simple product will probably not work as well with an increasingly diversified product offering. Internally developed systems offer flexibility to make changes to source code, but they are often designed with much less flexibility than full banking systems. Support for internally developed systems can also be poor if the individual who developed the system gets a better job elsewhere and moves on."

Each MFI will have to decide whether it will build something itself or whether it will outsource that development process to an external entity or partner. In making this decision, Laura Frederick suggested that MFIs ask themselves how they can most cost effectively access their chosen IT solutions. "Historically people have thought about this as ownership. But it's high time that MFIs thought about their access to technology the way microfinance clients think about access to technology – it's not ownership; it's access."

What kind of quality can an institution get for what kind of price? If it can get more for less by outsourcing, why do it in-house? Fredrick commented, "If you look at the way financial systems have grown over the last 20 or 30 years, you'll see that all the leading banks share their ATM networks. Why? Because it's more cost effective. They outsource the maintenance of their ATMs and they create more points of access by doing this."

What exactly can an MFI outsource? "Think about outsourcing select services or components of your technology," Frederick continued. "One of the most strategic ones to outsource is your connectivity. There's no reason why you should build a satellite to get connectivity to your branches." Several participants suggested outsourcing the training function.

"Typically, you want to be looking at your ratio of how many IT people do you need to support how many staff members," says Cracknell. "Sometimes people look at IT to loan officer ratios, or IT to overhead. When you're starting up, it's harder to justify a couple of IT people when you don't have the organization to support it. Get someone on contract who can come in and provide you with especially hardware support. You're probably not going to start out with a network, so get someone part-time or shared-time. It's a good strategy."

"You can also look at selling your own infrastructure or your processing services," Frederick added. "If there's something you think you're really good at, if that's your competitive advantage, see what other institutions might be able to leverage that."

Box 8: The Potential of IT Partnerhip: the Case of NIC-MOVE in Kenya

The NIC-Move project was a partnership between PayNet and NIC Bank in Kenya. NIC was under pressure to offer ATM services to its customers just to keep up with the competition, but given its relatively small size, PayNet suggested this would not work. Unless the bank had a proper business case for putting ATMs out there, just trying to keep up would not viable. The mantra was business case, business case, business case. Forget the technology, forget the delivery channels, what is the business case? What is the institution trying to do?

The first thing NIC wanted was revenue diversification. It was trying to grow its non-interest income. The only way it could do that was to have lots of customers. It had to grow in scale, which meant an increased retail presence, and it wanted to offer new service delivery channels.

It eventually came to the market with a product based on Move Zones, which is what it calls its branches. The bank realized that to compete with the majors it had to have some presence in the field but to try to replicate a 50 or 100 branch infrastructure would be too expensive using traditional branch banking tactics. However, if it put fairly small, cheap sales units out there and provided an environment in which customers could get all the information they need, could be advised, could purchase services, could access internet banking with staff available to help them use it, and could even have a cup of coffee, the bank could provide branchlike services without the typical overhead of managing cash. A cost-reduced, manned presence was possible.

NIC uses an ATM fleet for its Move Zone operations. The ATMs provide all the cash services, deposit services, funds transfers, balance inquiries, mobile recharge and bill payment services. Instead of going for the fairly non-transparent "every time you do something you pay something" model, it offers a fixed monthly fee so the customer knows exactly what he or she is paying in exchange for access to these services. NIC can scale this fee for different sectors of the market.

PayNet worked with NIC to prepare a full financial model for this business case. It also assisted with vendor selection, picking the right ATM for the right location, and then implemented the technology, which included the creation and documentation of procedures as well as the consideration of security aspects. The project lasted 18 months, with about 60% of the time being spent in the financial modeling / business case strategy phase and the remaining 40% being spent in implementation, which seems to have been a good mix.

In the outsourced operation that PayNet runs with NIC-MOVE, PayNet provides the ATM servicing, network management, second and third line support to the ATMs, switching, and an interface to systems like VISA. It also provides a single interface back into NIC's banking system and it manages the reconciliation back into the bank's general ledger. NIC recieves 24 hour a day, 7 days a week, 365 days a year service with triple redundant technology without having to worry about the ATMs at all. The bank could have invested a third of a million dollars putting this infrastructure in place, but by making use of what was available in the marketplace and sharing this infrastructure with others, NIC was able to take the capital that it would have used in back office infrastructure and open ten new locations – ten additional sales points and ten new opportunities to bring in customers.

Adapted from a presentation by Rob Webb, PayNet

To Share or Not to Share?

Frederick's comment about leveraging one's own infrastructure raises another question that MFIs must consider as part of their technology choice: will they implement a proprietary solution, or will they create a shared solution in some way?

Proprietary solutions have been preferred in the past for reasons described above, and because they are seen to be simpler and more strategic in terms of gaining competitive advantage. Yet, as Murray Gardiner argued, there are some pretty strong imperatives to share:

- ***Reduced Hardware Maintenance*** – The need to buy, maintain, and upgrade in-house hardware that is needed to run modern systems can be reduced.
- ***Upgrades*** – The latest versions of software can be accessed any time without the need for costly site-by-site in-house upgrades, changes and system administration.
- ***Reduced Implementation Time*** – New users or workgroups can be signed up on short notice without the need for complex implementations. New products and services can be launched faster and more users brought on from remote offices quickly.
- ***Core Banking Solutions*** – Enterprise level banking solutions can be used with more capacity and function than distributed PC based applications. There are some excellent solutions available in the marketplace, but access to those solutions is difficult because they're so expensive. If there are ways of sharing infrastructure around those types of solutions, an institution can gain some advantages.
- ***Information Management*** – Loan portfolio can be aggregated and risk across large networks of small branches assessed. The institution can do peer group analysis, look down into a data repository and understand how microfinance is working, understand behavior of entrepreneurs, segment markets, etc. This takes a large repository of information; it cannot be done on a few hundred accounts; but if the institution pools its information, it can.
- ***Regulation and Supervision*** – If institutions have a shared network and a large environment where they start to consolidate information, they can provide some assurance to regulators that they have the ability to regulate themselves. But if there are 100 points on the map, each one with its own little database and its own delivery system, then to regulate and supervise there is a need to have to have a relationship with each and every one. Credit unions have been able to self-regulate in a number of countries by setting up their own deposit insurance and having a large network of independent institutions that pool funds into a risk management facility fund; they can do their own auditing and manage central regulation on behalf of the regulators. But there has to be transparency for this, and there has to be the ability to aggregate large enough numbers to understand what that environment is all about.

Other participants added to Gardiner's list by arguing that shared solutions are a cost effective and less risky way to proceed for an individual MFI. Jeanine Firpo was among them, "We keep hearing about the struggles that you're facing as far as bringing IT into your operations, how much it costs, how hard the technology is to use, how ineffective the technology is once you move past an urban and peri-urban area, how challenging it is to have IT management skills; and, as you move towards becoming more mainstream financial services, and as you try to bring in technologies that are even more sophisticated, it's going to mean that your back end operations have to become even more sophisticated and harder to manage and harder to run. One of the conclusions I've been coming to during this conference is that a step forward may be getting rid of the back end. Why bother with it? If your business is really about making loans, and providing financial services to clients, why do you want hassle with an entire technological infrastructure that you have trouble figuring out, that you don't know how to keep it running, etc. It may be better to start thinking about how you can all work together as collaborators in your particular countries and come up with solutions and systems that are shared by all of you and that fit into the kinds of central switches and backend switches that we've

been hearing about. That way you just become a pass-through of the transaction. That could be where this industry could go."

Are shared solutions a realistic option for MFIs? Santiago López, Regional Manager at Banco Solidario in Ecuador offered one specific example. "We don't have our own ATMs; we use the switch and the network of other banks. We have 22 banks affiliated to the switch and that's the reason why our clients have access to 1,000 ATMs nationwide through their smart card." Adding the access points available to Banco Solidario customers resident in Spain (negotiated through separate agreements in which money transfers are passed through the SWIFT system), there are more than 4,000 places from which Banco Solidario customers can access their account.

Frederick added, "You're not a very interesting customer if you only want a couple thousand of something, but as soon as you want a hundred thousand or a half million, then you're an interesting customer. So you can create a lot of value by partnering with other organizations to purchase your IT needs."

MFIs can also come together to define what their common needs are and communicate these to vendors. Frederick continued, "I think we see a number of off the shelf information systems in microfinance today because people went out there and said, what are our common requirements and from that the vendors were able to create standardized off the shelf products. Institutions came together and defined what they need."

How to Select a Vendor?

Regardless of whether an institution buys an off the shelf solution or buys the parts and build a solution itself, whether it implements its solution in collaboration with others or on its own, it eventually has to come into contact with vendors and make some hard choices about whom it is going to buy technology inputs from. Participants offered the following tips for choosing a vendor wisely.

Use a requirement matrix. An institution should make sure that it has complete requirements and specifications before it goes out shopping, and check to see how each vendor's product matches up with the list of things it need. It should pay attention to its technical constraints, such as existing operating systems and platforms. For example, if its whole operation is on Windows NT, then there is no point in looking at a software product that only runs on Novell.

> *"We spent quite a lot of time on the ATM Selection. There are all types, shapes, features. It's very important to get to the bottom of what you want to deliver to the market and why. We built up a feature comparison matrix that looked at about 72 different comparison points looking at what really are the differences between them. We normalized the pricing and came up with a total cost of ownership over 5 years for the different ATMs and that was quite revealing; it was different from what we expected."*
>
> ~ Rob Webb, PayNet

Match the size of the institution and the size of vendor. If it is a one-branch MFI, it should not go to the largest supplier of microfinance software in the world. If it does, it will not get the support it will require. It may send them a customization request, but they will never answer because for them the institution is too small. Similarly, if it is a very large MFI and it goes to a software supplier that is possibly a one man show, it will not work out either. It should try to find a supplier that is at the same level, so that they can sit across the same table and discuss what is needed.

Carry out site visits to see how things are done. Before an institution chooses a vendor, it should visit the sites of other institutions with which they have worked, talk to vendor clients one-on-one, and ask about the nature of the relationship with the vendor, the process of implementation, the quality of

communication and responsiveness, etc. If possible, it should visit institutions that are using the product or service it wants to buy; not just meeting with the Managing Director, but talking to the people who are actually using whatever it is the institution wants to buy.

Look for reliable support. Locally available support can be a key success factor, offering flexibility and convenience, yet it can also become easily over-stretched and difficult to access. International support adds costs and delays when a technician must travel from afar in order to solve a particular problem, but it can add quality. There is no magic recipe, but the institution should choose a vendor that offers what it needs in terms of support, and be sure to specify the promised level of support in writing in the service level agreement.

Consider lifetime costs, not just acquisition costs. With some vendors, it is possible to get a very good deal on the initial equipment and software because they know they are going to make their money on the post-installation service contract. If that is not built into the expectations, the institution can get locked into an expensive maintenance agreement, and can get stung.

Do not compromise on connectivity equipment. Sometimes it is possible to purchase reconditioned or second hand equipment at a much lower price than new equipment. In general, participants felt this was a risky strategy, but could be cost effective if the MFI knew exactly what it wanted to buy and had people who could test the equipment. Few participants were willing, however, to compromise on communications equipment; in this area, quality seems to matter much more than cost.

Do not overcustomize the software product. A software that meets requirements with little customization is the most ideal software. If there is too much customization—even if the installation is successful—the system will become isolated from the mainstream product and when the vendor comes up with a new release, the institution may not be able to benefit from it because the customization that was done specifically for the institution will probably not have been addressed in the new release.

Box 9: Sample Parameters from Equity Building Society's Connectivity Matrix

- Availability / uptime
- Functional completeness / appropriateness
- Expandability and institutional growth
- Value added services
- Enhanced service quality reputation & interactivity
- Project scheduling objectives
- Interface with cutting edge technologies
- Flexibility on network growth
- Response time/ transmission speed
- User friendliness
- Efficiency in information handling
- Installation base or density (how many times or in how many places has the technology has been installed)
- Worldwide adoption, future trends
- Governmental & supervisory adherence
- Leapfrog digital divide
- Synchrony to globalization
- Data security & control
- Support infrastructure & ease of maintenance
- Institutional technical integration capacity
- Throughput at peak busy times
- Technology & architecture
- Transmission qualityEase of network trouble shooting
- Size of initial capital outlay
- Costs vis-à-vis increase in distance / branches
- Cost on 5 year amortization
- Stability of forecasted expenditures

L*ook for compatibility.* If there are two management teams that just do not get along, the relationship is not going to work no matter how good the IT company is or the MFI management is. Commitment from both partners to the relationship is key.

Select a vendor that pays attention to R&D. Although technology is evolving quickly, it still takes at least two years to develop something from an idea to a scaled up project, so it is important to look for vendors who are thinking about what needs might be in two to three years. Do they have an eye on what the marketplace is doing? What do they have in the pipeline? Is it something that the institution might need in two to three years? Due diligence should be done with the vendors, with the goal of finding out how much they're spending on research and development, how many staff members are focused on R&D, and what is on their R&D list for the future.

VII. Conclusion: Can Information Technology Fulfill its Promise?

"If microfinance is to scale up and reach the hundreds of millions of poor people we want it to reach, the solution is to set up alternative delivery channels."

~ Xavier Reille, CGAP

The whole way the technology industry works has to change if we really want to bridge the digital divide. I challenge the technology industry to start putting more energy and emphasis on the fundamental reinvention of hardware products, services, distribution channels and business models—to be willing to develop appropriate, affordable and relevant solutions for all people.

~ Janine Firpo, Hewlett Packard

Information technology clearly has the potential to transform the microfinance industry, but the extent to which it actually does so will depend on a number of factors, namely the extent to which MFIs take advantage of the opportunities that IT provides and integrate information technology into an overall business strategy that is creative, collaborative and keenly focused on clients' needs.

As Elizabeth Littlefield commented, "Technology certainly has the potential to help us do the one thing that microfinance has not been able to do except in very few places thus far and that is scale up exponentially. It can do this by enabling a rapid expansion in access points through improving operations, profits, customer service and, importantly, outreach to underserved populations, especially in rural areas."

Yet Xavier Reille questioned, "Can these new delivery channels truly help us to reach the poorest? On this the jury is still out. In fact, we have to recognize that these new delivery channels are generally targeting the medium or high end of what we consider to be the microfinance market, and few of them are really targeting the bottom end. I know of only one such experience in India with BASIX right now trying to use technology to provide loans below $50."

Alex Silva admitted, "We're not yet sure [that IT will result in lower cost or greater outreach] because some of these applications have just been introduced and we don't know the extent to which the depreciation and amortization costs will impact the cost structures of the institutions. However, the assumption that is being made, and this is the basis upon which these investments have been accepted by different Boards of Directors, is that they will actually reduce the costs, and clients will not only not see a reduction in rates, but also an improvement in the quality of service, not to mention that we also anticipate an increase in the quality of portfolio and in the collection process, thus again, reducing the overall cost to the client."

One conclusion that emerged clearly from the seminar is that MFIs cannot do it alone. Partnerships are going to be key, and stakeholders must build and share open infrastructure. As Stefan Harpe observed in his concluding remarks, "The issue of linkages and collaboration came up over and over again, not only with respect to hardware and equipment, but also with respect to software—anticipating the type of services you want to provide and the technology that's coming down the road, and building that into your design and your purchase and your negotiation of appropriate software." He later continued, "The idea is linked to other issues facing commercial MFIs. Institutions need to start finding opportunities to collaborate in discussions around credit bureaus, in negotiations with the Central Bank and with regulators, and in a range of other areas where competition needs to be outside the door and inside the door you talk about issues that affect everyone and where there's some benefit from cooperation."

Perhaps, as Murray Gardiner suggested, "If we can find efficient ways of aggregating and getting some kind of scale, maybe IT can be more accessible and smaller institutions can push that frontier of microbanking."

No doubt there is a need for further research into the development and application of more appropriate technologies for the market microfinance is trying to reach. As Janine Firpo noted, "We know that the technology industry currently sells its products and services to approximately 10% of the world's population. Ninety percent of the world cannot use the computers, servers and other devices that the industry sells. Some of the reasons for that have already been mentioned—the stuff is too expensive and it doesn't work where there are extremes in temperature or limited connectivity or erratic electricity. Thus, if we really want to bridge the digital divide, we have to change the whole way the technology industry works. We have to reinvent hardware products, services, distribution channels, and business models so as to develop appropriate, affordable, and relevant solutions for all people."

"Equivalent to the investment required in the technology, and perhaps even a precondition of successful implementation and utilization of technology, is the investment in staff and capacity," remarked Harpe. "Planning is needed," argued Silva. "IT can be a very important tool, but it has to be well managed." There is also a great deal of work to be done in the regulatory area to make the technology and deployment of technology feasible and fast. And as Reille noted, "It's obvious that we need to learn from each other; we need more guidance on technology usage; we need to be able to choose and compare technologies based on clear metrics and criteria."

If all this is done, can technology transform microfinance in Africa as we know it today? During the seminar's closing session, Wagane Diouf argued, yes. "By using technology, microfinance can change the economics of its business. It can change its business model and can turn something that is today a high cost, relatively slow growth industry into a high growth industry and a pervasive service that anyone can access at a reasonable cost. If we can achieve that, I think that microfinance could change the rules of the financial services game, and by doing so it would force the conventional financial players to either compete with MFIs or embrace the microfinance industry."

Whether or not Diouf is right, the seminar clearly demonstrated that the technology promise is real and the microfinance industry is keen to test it. Participants identified numerous strategies, approaches and helpful hints to assist microfinance institutions and other stakeholders in making information technology a strategic tool for microfinance in Africa. The challenge now is to put the ideas into practice and to see if technology's promise can be kept.

Annex I: Seminar Agenda

Monday April 26

08:00 – 09:00 Registration

09:00 – 10:30 Opening Remarks
- Welcome by AfriCap
- Amb. Mohamed M. Mahamud, Permanent Secretary Ministry of Regional Development, Kenya
- Keynote Speech: Elizabeth Littlefield (CGAP): ***Building Financial Systems for the Poor in Africa***

10:30 – 11:00 Coffee Break

11:00 – 13:00 Plenary Presentations
- ***Leveraging Technology as Strategy to Achieve Business Goals*** (Laura Frederick, Echange)
- ***Electronic Banking: Is technology the Key Issue?*** (David Cracknell, MicroSave)

13:00 – 14:30 Lunch / Technology Forum

14:30 – 16:30 Workshops
- ***Guidelines for Preparing, Selecting and Implementing MIS***
    - *Guidelines to introducing computerized MIS* (Gautam Ivatury, CGAP)
    - *Key success factors and challenges in selecting and implementing MIS: A practitioner's perspective* (Robert K.O. Pertet, K-Rep Bank, Kenya)
    - *Key success factors and challenges in selecting and implementing MIS: A vendor's perspective* (Kamal Budhabhatti, Craft Silicon)
- ***Alternative Delivery Channels***
    - *Selecting the right delivery tool/device for your institution* (Hany Assaad, IFC)
    - *How alternative channels will change the face of microfinance* (Santiago Lopez, Banco Solidario, Ecuador)
- ***Shared Networks/Platforms***
    - *Application service provider: alternatives to in-house system? IBM's Mexican Experience* (Marcelo Perez, IBM)
    - *Application service provider: alternatives to in-house system? Temenos' Perspective* (Murray Gardiner, Temenos)
    - *Partnerships in IT implementation: key success factors and challenges* (Ron Webb, Paynet Kenya)

16:30 – 17:00 Coffee Break

17:00 – 18:00 Plenary Session
- ***The State of IT Use in Microfinance in Latin America*** (Alex Silva, Profund/AfriCap)

18:00 – 19:30 Technology Forum/Product presentations

20:00 – 22:00 Dinner hosted by EBS

Tuesday April 27

09:00 – 09:30 Plenary Session
- AMFI: ***The Kenyan Microfinance Industry*** (Betty Sabana, AMFI)

09:30 – 11:30 Workshops
- ***Status of Data Communications Infrastructure in East Africa – Guidance for Connectivity***
    - State of technology in connectivity (Richard Bell, Kenya Data Networks)
    - Achieving Connectivity in Rural Areas: Bushnet's Experience in Uganda (Matthew Rudd, Bushnet)
    - Selecting and implementing connectivity solutions (Khadija Shamte, Echange)
    - Branch connectivity: The EBS experience (Andrew Kimani, EBS, Kenya)
- ***Alternative Delivery Channels***
    - Breaking growth barriers with Branchless Banking – The vision of TEBA Bank (Dirk Bruynse, Teba Bank, South Africa)
    - The HP initiative for microfinance (Janine Firpo, Hewlett Packard)
    - Creating card network externalities for the microfinance industry – The case of FERLO (Tidiane Sarr, Ferlo Project, Senegal)
- ***Practical Considerations / Challenges in Using IT for Strategic Management***
    - Managing IT projects (Laura Frederick, Echange)
    - Strategic IT challenges within MicroSave's Action Research Programme (David Cracknell, MicroSave)

11:30 – 12:00 Coffee Break

12:00 – 13:00 Closing
- ***Building a Vision of the Future of IT in Microfinance in Africa***
- Closing Remarks by Stefan Harpe, AfriCap Investment Manager

13:00 – 14:30 Lunch/Press Conference

15:00 – 17:30 A CGAP event
- ***Business Models for Point-of-Sale Technology for Credit and Savings Operations***

15:00 – 18:00 Technology forum / Product presentations

Annex II: List of Participants

Name	First Name	Country	Organisation
Adebajo	Peju	Nigeria	Fate Foundation
Aggrey	Kilifima	Kenya	Pride Ltd
Akol	Mike	Uganda	Uganda Women'Finance Trust Ltd
Aleke	Dondo	Kenya	K-rep
Angui Feby	Michel	Ivory cost	ECLOF-CI
Anyango	Ezra	Nigeria	Fate Foundation
Appenteng	Kwadwo	Ghana	GHAMFIN
Assaad	Hany	USA	IFC
Batchelor	Simon	UK	Gamos
Behague	Sabina	USA	
Bell	Richard	Kenya	Kenya Data Networks
Kahungo	Benjamin	Kenya	Octagon Systems
Bérard	Catherine	Canada	CIDA
Bessane	Gladys	Senegal	AfriCap
Bruynse	Dirk	South Africa	Tebabank
Budhabhatti	Kamal	Kenya	Craft Silicon
Bunei	Samuel	Kenya	CoopBank
Burritt	Kiendel	USA	UNCDF
Campaigne	Jonathan	Kenya	Pride Africa Nairobi
Chanza	Teddie	Malawi	New Buiding Society
Chege	Nelson	Kenya	Harambee Co-operative Sacco
Cheruiyot	Augustine	Kenya	K-Rep Development Agency
Chikami	Masuna	Zimbabwe	MicroKing Finance
Cook	Tamara	Kenya	CGAP
Countinho	Felistas	Tanzania	FINCA
Cracknell	David	Kenya	MicroSave
Davis	Amy	USA	Consultant / SEEP
Diouf	Wagane	Senegal	AfriCap
Dioum	Anta	Senegal	CBAO
Duhu	Ignatius	Nigeria	Bridge Microfinance
Ene	Chibuzo	Kenya	Neptune Software Plc
Esipisu	Ezekiel	Kenya	K-ECLOF
Esther	Komett	Kenya	EBS
Firpo	Janine	USA	HP
Forster	Dayo	Kenya	Consultant
Frankiewicz	Cheryl	Tanzania	Consultant
Frederick	Laura	USA	Echange
Gambalagi	Itandula	Tanzania	CRDB Bank Ltd
Gardiner	Murray	South Africa	Temenos
Githaiga	Mwangi	Kenya	Kenya Women Finance Trust
Harpe	Stefan	Senegal	Africap
Holtman	Martin	USA	CGAP
Ishaya	Edna	Nigeria	Centre for Microentreprise development
Ivatury	Gautam	USA	CGAP
Jackson	Joe	Ghana	theSOFTtribe
Staley	John	Kenya	EBS
Kabugi	Nguru	Kenya	Octagon Data Systems
Kagugube	Simon	Uganda	Centenary Rural Development Bank Ltd

Name	First Name	Country	Organisation
Kakembo	Godfrey	Uganda	Finca Uganda
Kaluli	Sam		
Kamau	Kiringai	Kenya	WillPower Entreprise Development Ltd
Kandie	Phyllis	Kenya	KMEPP
Ka-Niang	Bintou	Senegal	AfriCap
Kantai	Rosemary	Kenya	Kenya Women Finance Trust
Kanthambi	Paul	Malawi	New Buiding Society
Kariaki	Benson	Kenya	Kenya Women Finance Trust
Kashangaki	John	Kenya	K-Rep Advisory Services Ltd
Kaunjuga	Margaret	Kenya	Education Training Consultants
Keraita Migiro	Hudson	Kenya	K-ECLOF
Keyah	William	Kenya	ARDESC Technical and Management Support Unit
Kimani	Andrew	Kenya	Equity Building Society
Kisaale	Deborah	Uganda	Uganda Women'Finance Trust Ltd
Kisabuli	David	Kenya	Bungoma Family Devlopment Programme Ltd
Kishoiyian	Mary	Kenya	Faulu Kenya
Kitabu	Benson	Kenya	Kenya Women Finance Trust
Kiyingi	Vincent	Uganda	Faulu Uganda
Kunyiha	Kiriga	Kenya	Aureos
Kuwik	Brian	Uganda	Accion International
Ledgerwood	Joanna	Uganda	SPEED
Leif	Doering	USA	Chemonics Int'l
Littlefield	Elizabeth	USA	CGAP
Lopez	Santiago	Ecuador	Banco Solidario
Lugogo	Rita	Kenya	Choice Humanitarian - Kenya
Mabonga	Simon	Kenya	Bungoma Family Devlopment Programme Ltd
Magani	Michael O.	Kenya	Regional Computers Ltd
Maina	Anthony	Kenya	Pride management Services - PMSL
Maitha	Mary	Kenya	Banki Kuu Sacco
Maiyo	B.K. Jacinta	Kenya	Kade Ltd - World Vision
Malai	Constantine A.	Kenya	MicroFinance Partners
Malima	Rashid	Kenya	Pride management Services - PMSL
Mangi	Beth	Kenya	Consultant
Masaki	Sebastian	Tanzania	CRDB Bank Ltd
Mayunga	Maricus	Kenya	WEDCO Enterprise Development Ltd
Mbatia	Samuel	Kenya	Octagon Systems
Mbugua	Joseph	Kenya	Data Integration Technologies Ltd
Mburu	Laban	Kenya	Investment Promotion Center
McCabe	Thomas	USA	Microbanx
Mkombola	Habel	Kenya	Faulu Uganda
Morocho	Mauricio	Ecuador	Microbanx
Morolari	Abiodun	Nigeria	Centre for Microentreprise development
Msaki	Isidori	Tanzania	Akiba Commercial Bank
Msella	Joel	Tanzania	Pride Tanzania
Msoma	Conrad	Tanzania	Pride Tanzania
Mtulia	Mohamed	Tanzania	Akiba Commercial Bank
Muchena	Loyford	Kenya	Faida Biashara
Muchira	Alfred	Kenya	Harambee Co-operative Sacco
Mulwa	Edwin	Uganda	Crystal Clear Software Ltd
Mungai	Wairimu	Kenya	Consultant

Name	First Name	Country	Organisation
Munyororo	Charles	Kenya	Neptune Software Plc
Muriuki	Patrick	Kenya	Fintech Kenya Ltd
Museau	Caleb	Kenya	Zedesen Associates
Mutero	Tony	Kenya	Kenya Women Finance Trust
Muthoni	Virginia	Kenya	K-Rep Advisory Services Ltd
Mwangi	James	Kenya	Equity Building Society
Ngeno	Roslyn	Kenya	Investment Promotion Center
Ngure Kabutha	John	Kenya	Snowmount Center For Business and development
Njunge	Mary	Kenya	Wakarimu Sacco
Ntungwa	Januario	Uganda	Centenary Rural Development Bank Ltd
Nyambura	Koigi	Kenya	Postbank
Nyongesa	Robert	Kenya	Harambee Co-operative Sacco
Obadha Ogutu	Kenneth	Kenya	Saga Thrift & Enterprise Promotion Ltd
Obunga	Tom	Kenya	Oikocredit
Ochola	Philip	Kenya	Jamii Bora Trust
Ogembo	Lameck	Kenya	African IT Exhibitions and Conferences
Ogwenoh	Benard	Kenya	Faulu Uganda
Oladokun	Olatunde	Nigeria	Self Reliance Economic Advancement
Ondanga	P.A	Kenya	Afya Sacco
Opinya	Zupher	Kenya	Regional Computers Ltd
Osanga	Emmanuel	Uganda	Pride Uganda
Perez	Marcelo	Mexico	IBM Business Consulting Ser.- Inter.
Pertet	Robert K.Ole	Kenya	K-Rep Bank
Peyron	Jérôme	France	Western Union
Reille	Xavier	USA	CGAP
Ridley	Jonathon	UK	Enterplan/Financial Deepening Challenge Fund
Ringeera	Rose	Kenya	World Vision
Robert	Gathu	Kenya	Safaricom
Rudd	Matthew	Uganda	Bushnet
Sabana	Betty	Kenya	AMFI
Sabetta	Janis	USA	IBM Business Consulting Ser.- Inter.
Sambu Ole	Bosco	Kenya	Pride management Services - PMSL
Sarr	Tidiane	Senegal	Ferlo
Sayumne	Yotham	Tanzania	Dar Es Salaam Community Bank
Schuster	Rodney	Uganda	Uganda Microfinance Union
Shah	Anjna	Phillipines	Southern Horizon Ltd
Shamte	Khadija	Kenya	Adeptsystems
Silva	Alex	Costa Rica	Profund
Steenstrup	Barbara	USA	IBM Business Consulting Ser.- Inter.
Tagaba	Sylivia	Uganda	Uganda Women'Finance Trust Ltd
Taylor	Russell	South Africa	Temenos
Thoithi Wanjiru	Mercy	Kenya	MicroFinance Partners
Verkoijen	Hans	Uganda	Crystal Clear Software Ltd
Wainaina	George	Kenya	Kenswitch Ltd
Waititu	Allan	Kenya	EBS
Webb	Ron	Kenya	Paynet/Kenya
Wright	Graham	Kenya	MicroSave
Yaya	Sheila	Kenya	MicroKenya Ltd
Zucker	Leslie	USA	Echange