Business Viability Analysis

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Executive Summary

Mambu is a vision for an online portfolio management software service for growing microcredit organizations. It could enable these organizations to outsource their technical challenges and allow them to focus on their core business. It is to be affordable, designed for usability and allows the organization to access their information anytime, anywhere.

This discussion paper describes the microfinance market, technological challenges that microcredit organizations face and how Mambu could be the enabler to overcome them. Many on-premise software products currently in the market impose high entry barriers for small- and medium-sized microfinance institutions (MFIs). Mambu would be subscription-based and so has no up-front costs and does not require extensive technical set-up, maintenance or expertise in the organization. A big underserved need in current on-premise systems is that staff cannot access organization information, keep track of clients and perform their work from anywhere.

Internet penetration and growth rates in target markets are described and how successful rollout of the solution to these markets could be achieved, especially since implementing and deploying an initial scalable prototype might be possible within a relatively short period. Employing this prototype as a base for a long-term self-sustainable business, the big challenge as we believe will be scaling and marketing the service.

We conclude with suggesting a pricing model that is based on market data and suitable for Mambu, followed by proforma cost calculations for one option to bootstrap this service. Following this option we strongly believe, Mambu can be developed into a profitable, double bottom-line business over a four-year period.

Overall, based on the one year of work, research and design in the field of microfinance we feel the Mambu concept is one with not only market potential but a strong market need. MFIs in Mozambique were inquiring when the service would be available to them and how much it will cost, based simply on explanations and hand-drawn sketches. Internet penetration rates are on the rise and soon most markets will be easily able to access such a service. We feel there is a strong unmet need for this service and the time is right to start building it.

State of the Microfinance Industry

"Gaining access to appropriate back-office technology was the single most important obstacle for the growth of small institutions and the microfinance industry in general."

Alberto Jimenez, Global Business Advisor for the Financial Services Sector of IBM

Microfinance is not a new sector, having come into public view in 1980, but it is a fast-growing one with 27% annual growth worldwide over the last ten years[1]. There are currently over 10,000 MFIs worldwide providing microcredit as one amongst other services[2]. It is worthwhile to note that once an organization starts to offer micro-savings, insurance and other services it begins to transition into what is known as a 'micro bank'. From there, the lines between it and a regular legal bank entity begin to blur as stricter national central-banking regulations come into place.

However, it's a volatile sector with some estimates that as few as 1% of the organizations become self-sustainable over the long term. The others are strongly dependent on donor funding and may end up being merged together, join other institutions, need to attract commercial funding or simply have to fold. This is consistent with the size of these institutions: often measuring their size in terms of clients, more than 73% had fewer than 2,500 clients with few branches serving them[3].

However, MFIs are not the only organizations providing microcredit services. NGOs in developing countries commonly provide services in health, sanitation, education and microcredit. In fact, up to 80% of NGOs provide some sort of microcredit services to their clients[4]. With estimates of 40,000 international NGOs operating worldwide[5] and hundreds of thousands more operating at the national levels, this market is also in need of unique microcredit portfolio management services. More and more of these organizations are starting to use microcredit as a vital tool to help the poor. Numerous informal groups that do not fall into the category of MFIs or NGOs also use microcredit as tool to combat poverty. One such example is the Self-Help Groups found in India. Numbering in the millions, these are groups of 10-20 poor women who band together for financial services including microcredit[6].They are often supported by local government agencies, NGOs and other services. Countless other informal microcredit organizations are operating in developing countries worldwide.

For the very small organizations of only a few people, using paper, pencil and spreadsheets is a perfectly acceptable solution. For very large organizations, off-the-shelf commercial products are available to meet their micro banking needs. However, for a very large portion of the industry - the small-to-medium organizations, which made about 89% in total numbers[7] in 2005 - have an unaddressed pain of being too a large for crude tracking tools but unable to afford or support the requirements of the software products currently available to them.

[1] Microfinance for Bankers and Investors by Elizabeth Rhyne, Mcgraw-Hill Professional, 2009
[2] http://www.gdrc.org/icm/cgap-mfindustry.html
[3] Microcredit Summit Campaign Report 2005
[4] World Bank NGO Survey 2003
[5] Anheier et al., "Global Civil Society 2001", 2001
[6] http://www.cgap.org/p/site/c/template.rc/1.9.2706/
[7] Microcredit Summit Campaign Report 2005

Microfinance Software Market

"Many, many small MFIs would benefit from better ways to manage their information, but the market doesn't yet seem to know how to serve this group."
Lauren Braniff, CGAP Information Systems Expert

The current market of portfolio management software available to micro finance and microcredit institutions is scattered with few dominant players. With approximately the half of all MFIs using custom-built software[8], there are clear needs which are unmet in the off-the-shelf market. Custom-built software is relatively cheap to acquire in most MFI markets and therefore the job is often outsourced to small IT firms or even friends. However the quality often suffers and the long-term viability and scalability of these software solutions are questionable. Many MFIs still use only spreadsheets or paper to manage their organization and many smaller MFIs lack technically savvy employees to operate a more advanced software solution.

In the domain of off-the-shelf software providers — currently serving one third of registered MFIs — almost 100 solutions exist of widely varying prices, features, quality and localizations. Of these, the providers may or may not be still supporting their software, as getting in contact with them is difficult. Providers often advertise their software locally and so have little global presence. Of the available solutions, only a few are currently available in Portuguese Africa including CorePlus, M2, Orbit-R, Loan Performer and MicroFit. The first three are designed primarily for large microfinance banks as well as retail and commercial banks that offer these services. MicroFit is notable for currently being a collaboration between PlaNet Finance - an advisory service to microfinance organizations - and the software giant SAP which is providing some technical support to the product development. Loan Performer is currently a popular solution with over 250 MFIs using it. It is relatively cheap, well-featured and available in numerous languages. We were able to see this solution in Mozambique where a few MFIs are using it. However, long-term experience is mixed as Loan Performer has a 2:1 new to abandoning client ratio year after year.

The most interesting player to make a move in the field is Grameen Bank partnering with IBM. Run out of Grameen Technology Center in Seattle, MIFOS is an open source project that is free to download and use by any organization. It is currently most visibly being used by Grameen Koota in Bangalore, serving more than 250.000 clients and has further plans to launch in Philippines.

Common to all the previously mentioned software providers in the domain is the product based business model, which requires substantial amounts invested into hardware infrastructure, setup and maintenance. In addition, their very market segment served is on the upper end of the MFI scale: Most of the MFI organizations using these products have between 5000-25000 clients. Solutions targeting the sub-2500 client market of MFIs – 73% globally in 2005 – as well as countless NGOs providing microcredit services are not readily available.

A few providers have recently started business models and development strategies aimed towards the creation a service solution. Audech.com, a Bangalore-based startup recently launched a SaaS edition of Mifos called MAS and is piloting mobile access to this solution in India. As of November 2009, IBM and Grameen have announced the pilot project of the IBM Microfinance Processing Hub. It is a shared on-

[8] CGAP Microfinance Survey 2008

demand SAAS platform to support microfinance operations. Billing per-account, per month they deployed the solution with very large MFIs in India and Mexico. The Processing Hub provides banking-oriented on-demand services to microfinance organizations. Very little usage information is currently available, but it appears the target market for this product are solely very large microfinance institutions as an IBM attempt to leverage its banking software and consulting expertise to bridge the gap between microfinance and banking institutions.

Both Audech and IBM are certainly important competitors to watch and both could have a significant impact on Mambu's acceptance in the market. At the very least, the existence and initially success of the IBM HUB SAAS solution confirms the vast microcredit market is ready for online, on-demand services.

Marketing: Reaching out to Small MFIs

Oftentimes MFIs are organized in associations or networks that usually hold 10 to 40 MFIs under their umbrella. These organizations play a vital role in guiding their members in terms of new best practices in the domain or new technological solutions becoming available. AMOMIF is one example network in the Mozambique market that already showed interest in piloting the Mambu service with five of their member organizations. Even though in the long run online marketing efforts will increase and partnering with global initiatives will become crucial, networks like AMOMIF will be very important partners for scaling up a service solution like Mambu in the start-up phase. Usually these networks are similar to NGOs, or organized as NGOs themselves, and very focused on benefiting their domain. They are very well aware of the problems their members face and will be readily available to promote solutions that create value for their members. By their very nature, networks are not only closely connected to their member organizations, but also to other networks, central banks and NGOs in their respective countries. We expect word-of-mouth marketing in between these networks and MFIs to play a vital role in the success of Mambu.

As will be shown in later pro forma calculations, we would suggest basing initial marketing efforts on workshops and road shows in cooperation with these networks. Focusing on alleviating the pain for costly IT solution maintenance and initial licensing costs, these workshops will provide a forum for marketing, training and setup of the solution on-the-spot with the right people in place on both ends. Scheduling consultants to hold these meetings and then being readily available for a period of few weeks will also allow for on-the-spot migration support or even paid migration services.

A free, easily available trial period of the service will also be essential to having new MFIs adopt the solution. This could be achieved by offering free usage months, however we feel this option restricts MFIs to a tryout period that could not fit to their office reality at the date of signup. We therefore also suggest making the service free for very small institutions – for instance up to three seats or 100 clients. We feel like this would be an ideal option to have MFIs signing up for the service and trying it out for an unlimited duration while already dealing with their real customers in the solution.

Common to the aforementioned options of marketing the product is their focus on cost savings that results from using the service and allowing customers to scale their organization without worrying about

technical infrastructure. Emphasizing these points which are unique to the online service will be critical for the success of all marketing efforts, both towards networks as to MFIs themselves.

Internet Penetration and Growth in Target Markets

By proposing to deliver our software services online, it is critical that the targeted customers have reliable access to the Internet. As the solution requires that all transactions be performed on a central server structure for all clients and it is accessed – at least initially – via web interface, the operations of an MFI using the solution would be severely disrupted in case of frequent Internet outages. While technical solutions are available to overcome short-term Internet breakdowns, the process of recovering from these outages – namely typing fallback paper forms back into the system – would threaten one goal of the solution: allowing MFIs to reach more people by reducing manual labor. In addition, designing and implementing local caching mechanisms and local backup solutions might be expensive and slow down the development process of the solution.

During studies in Mozambique, we experienced that short term Internet connection outages are still occurring in urban areas and are more common in rural areas. The availability of broadband is strongly dependent on each individual organization's location. However mobile Internet connection over GPRS has proven to be very stable and could serve as a sufficient fallback solution if regular broadband or dialup connections fail. Since there is no inherent need to the solution for Local Area Networking (LAN), a comparatively cheap wireless Internet device as provided by MCell or other operators in Mozambique would be enough to ensure connectivity with the solution. Similar devices are available in many other countries of interest, but should – due to their additional cost – rarely be considered as a permanent solution.

Looking at worldwide statistics, the rise in Internet penetration has been enormous and can be expected to continue to grow at an exponential pace in the near future. While the worldwide average growth in absolute Internet users was about 380% from 2000 to 2009 (134 % USA, 297 % Europe) the following table[9] shows a tremendous growth in the potential target markets. Particularly interesting markets are highlighted on country level.

Region	Estimated # of accessible MFIs	Population (Millions)	Current Penetration	Internet User Growth (2000-2009)
Africa	400	991	6.8 %	1392 %
Mozambique	40	21	0.5 %	1066 %
Asia	550	3808	19.4 %	545 %
India, Pakistan	230	1330	7.8 %	1700 %
Indonesia	70	240	4.1 %	1150 %
Philippines	120	97	24.5 %	1100 %
GUS	200	270	N/A	N/A
Latin America	300	586	10.3 %	890 %
Mexico	50	111	24.8 %	917 %
Peru	70	29	25.8 %	205 %

Table 1: Internet growth rates in potential target markets

It is worthwhile to note that organization usually have significantly better access rates to Internet than the clients they are serving. Although these figures are encouraging and there is data available that

[9] All data obtained from http://www.internetworldstats.com and http://www.mixmarket.org

suggests Internet growth underlies Moore's law[10], we expect it will need at least 4-5 years to build a solid internet backbone in most African and many Asian countries that could ensure service availability to a 98%+ level. As penetration rates are not fully correlated to quality of service, a sizeable subset of organizations in all these markets will still be able to access the services. Succeeding in test markets with low coverage will provide also provide additional credibility for markets with better coverage. Conversion rates however can be increased by focusing on markets with already-high penetration rates such as in the Philippines and some Latin American countries.

Pricing Model

"The smaller MFIs are still having a hard time finding a quality solution at a price they can afford."
Lauren Braniff, CGAP Information Systems Expert

To make the pricing model for Mambu attractive, it has to be closely tied to the subscribing MFI's loan account base. As presented earlier, the high entry barriers in terms of technical expertise and licensing cost for robust solutions prevent smaller MFIs from acquiring long-term and scalable IT solutions. So while the options for pricing a service like Mambu are almost unlimited, we have explored three apparent pricing strategies in detail.

One solution was to charge a simple fee per client per month, with discounts for very large organizations. This is reasonable to the organizations as the number of clients is tied to their revenue via the average loan size and the respective annual performance rates. It also rewards larger organizations to stick with the solution and become a relevant part of the revenue stream. However this model is complex once it comes to group loans which form of the core of most MFIs operations, as groups can vary widely in numbers of clients associated with the group. Small MFIs would furthermore not be encouraged to operate efficiently and could free-ride the solution or at least maintain their low-efficiency for a very competitive price.

Transaction-based pricing was suggested by AMOMIF as an alternative, but rejected by the MFIs themselves. Transaction-based pricing is unpredictable for the organizations, and a transaction itself is difficult to define. Fieldwork has revealed that organizations would mistrust this model and expect the service provider to cheat in order to maximize its profits.

A seat-based business model is similar to client-based pricing in that there is often a predictable ratio of clients to staff in the organization. It is more predictable as MFIs cannot foresee how many new loans will be issued in any given month, but hiring new staff can be directly associated with a new billable account in the service. However, it is very different in that it encourages efficient operations and self-sustainability in the MFI. Aiming for high client per staff ratios is an elementary part of driving down APRs (Annual Performance Rates) and creating a sustainable, if profitable, MFI. In the end, the seat-based model offers a very simple pricing model that is predictable, easy to communicate and consistent with how these organizations evaluate their own size, growth and success. In addition it allows Mambu to retain flexibility towards other services than microloans since the business model is not directly tied to the number of active loan accounts in the system.

[10] See http://www.physorg.com/news151162452.html

For the following explaining calculations of the seat-based business model we assume that the subscription cost for the IT solution should not exceed roughly five percent of the annual loan-based revenue of the organization. As APRs go down and revenues go up with increasing loan sizes this model will allow MFIs in markets with comparatively big loan sizes (greater than $500) to adapt the service to a very competitive price, as it will be priced so it still attracts clients in markets with small loan sizes. The following table represents one single realistic set of simplifying assumptions which is yet valid for a substantial set of very small MFIs in markets with very small loan sizes and serves as a basis for further exemplary calculations:

Assumptions		($ USD)
Mambu Price: Per Seat/Month	**$**	**20,00**
MFI Avg. loansize	$	200,00
MFI Avg. APR[11]		36 %
MFI Avg. rev/client	$	72,00
MFI Client/staff ratio @ 500 clients		60
MFI Ratio growth per 500 clients		5 %
MFI Annual service cost to revenue @ 500 clients		5.33 %

Table 2: Simplifying assumptions based on market data

Given the previous assumptions, having no dominating player in the market, the disruptive nature of Mambu and reflecting an aggressive investment into marketing and support for the solution within Year 2, we expect the customer distributions in Table 3 can be achieved within a four year time period. This is also considering the fact that due to migration issues smaller MFIs can be acquired faster as new customers than larger MFIs and initial customers either grow in size or may drop out of the solution. Furthermore once the solution is solidified in the market we expect larger MFIs with a pure focus on microcredit to migrate to the solution as well. We therefore simplify the distribution to a bell shaped curve that moves up in segments over time.

[11] Note as a general rule: The smaller the loan, the higher the acquisition and operating costs for the loan. Further information on this topic is well available on mftransparency.org

				Year 1		Year 2		Year 3		Year 4	
Segment	**# Clients**	**Client/Staff ratio**	**# Staff**	**# Customers**	**Total/Yr**	**# Customers**	**Total/Yr**	**# Customers**	**Total/Yr**	**# Customers**	**Total/Yr**
Small MFI 1	500	60	8	5	$9.600	40	$76.800	60	$115.200	80	$153.600
Small MFI 2	1000	63	16	0	$0	50	$192.000	100	$384.000	150	$576.000
Small MFI 3	1500	66	23	0	$0	35	$193.200	120	$662.400	180	$993.600
Small MFI 4	2000	69	29	0	$0	15	$104.400	80	$556.800	200	$1.392.000
Small MFI 5	2500	73	34	0	$0	5	$40.800	40	$326.400	180	$1.468.800
Small MFI 6	3000	77	39	0	$0	2	$18.720	15	$140.400	100	$936.000
Medium MFI	10000	152	66	0	$0	1	$15.840	5	$79.200	15	$237.600
Large MFI	30000	200	150	0	$0	0	$0	0	$0	5	$180.000
Huge MFI	150000	280	536	0	$0	0	$0	0	$0	0	$0
Gross Revenue					**$9.600**		**$641.760**		**$2.264.400**		**$5.937.600**
Number of Customers					5		148		420		910
Estimated Market Size					12000		13000		14000		15000
% Market Share					0,04%		1,14%		3,00%		6,07%

Table 3: Customer distribution and revenue at the end of each year until the end of year 4.

Proforma Venture Expense Projections

As a basis for discussion we want to give a preliminary overview for an option to jumpstart this service model. Starting out with two skilled design-driven developers who have a deep knowledge of the processes and challenges involved in microcredit organizations, we believe that within six months a testable prototype of the service can be achieved. Based on a rigorous design process, solid architecture and cloud computing infrastructures, this prototype can then be tested and refined in the field with few clients in a test market. For this we expect a third person to join the venture in the second part of the first year, who would be responsible for user testing, supporting the initial client base and ideally provide an additional language to the system.

Aiming for an incorporation of the venture by the end of Q3 in the first year of operations some external effort for the appropriate setup of a brand, which could provide the framework for trustful interaction with clients, will have to be factored in. We also expect some effort to be associated with the acquisition of software licenses, as soon as the required frameworks used in the system will be deployed to commercial use.

Anticipating successful user studies and a general positive attitude of the market towards Mambu we expect a substantial investment into marketing of the service by the end of year one. This will be accompanied with two more employees for development, support and administration of which one would ideally contribute and maintain another language to the solution. Also the cost for travelling now includes road shows and workshops on a per country basis according to the marketing plan for the largest markets. Continuing on this path the venture would have to drastically increase workshops and partnering with MFI associations in year three to eventually break even operative income and expenses at the end of year three, reaching profit zone at the beginning of year four.

	Y1/Q1	Y1/Q2	Y1/Q3	Y1/Q4		Y1	Y2	Y3	Y4
Assumptions									
Number of Customers	0	0	0	5		5	148	420	910
Employee Headcount	2	2	3	3		3	7	18	32
Disbursements									
Salaries	$ 20.000	$ 20.000	$ 30.000	$ 30.000		$ 100.000	$ 490.000	$ 1.260.000	$ 2.240.000
Hosting/Technical Services	$ 100	$ 100	$ 600	$ 800		$ 1.600	$ 5.000	$ 7.000	$ 10.000
Travel	$ 2.000	$ -	$ -	$ 5.000		$ 7.000	$ 24.000	$ 40.000	$ 60.000
Rent	$ -	$ -	$ 3.000	$ 3.000		$ 6.000	$ 12.000	$ 24.000	$ 40.000
Law/Audit/Biz Consultants	$ 5.000	$ -	$ 5.000	$ -		$ 10.000	$ 10.000	$ 15.000	$ 20.000
Computer & Office Eqp.	$ 3.000	$ 3.000	$ 3.000	$ -		$ 9.000	$ 12.000	$ 20.000	$ 40.000
Software Licenses	$ -	$ -	$ 1.600	$ 3.000		$ 4.600	$ 8.000	$ 20.000	$ 20.000
Marketing	$ -	$ -	$ -	$ 5.000		$ 5.000	$ 80.000	$ 200.000	$ 400.000
Gross Costs	$ 30.100	$ 23.100	$ 43.200	$ 46.800		$ 143.200	$ 641.000	$ 1.586.000	$ 2.830.000
Gross Revenue				$ 9.600		$ 9.600	$ 641.760	$ 2.264.400	$ 5.937.600
Estimated Capital Requirements						**$ 200.000**	**$ 300.000**	**$ -**	**$ -**

Table 4: Proforma calculations and estimated external capital requirements

Risks to Mambu

In the following section we look at the greatest external and growth challenges we could see this venture facing, the chance of the respective risk seriously impacting the business venture, as well as the mitigation strategies the project team should undertake to lower both the likelihood as well as the impact of the risks.

Risk: Microfinance organizations will not trust their portfolios to an online provider

Threat: High
Portfolio management is at the heart of the microcredit organizations - especially the smaller and medium-sized ones. They may fear becoming dependent on an internet service provider and this concern was raised frequently during primary research in Mozambique.

Mitigation Strategy:
Concern will generally include ensuring client data is secure, always accessible, exportable and that the services' deployment model is solid enough to keep providing its services as long as the microcredit organization requires and pays for it. It will become essential to increase the provider's transparency and advertise it to potential clients. Eventualities like downtimes, bugs and delays should not be hidden but made visible as to what happened, why and what steps we've taken to prevent the action in the future. Consistent and fast customer service - easily accessible - will help create a strong bond with clients during the trial period as well. Building this trust may involve country visits and holding workshops to gain a stronger personal connection with the clients.

Risk: Lock-in with on-premise products may prevent MFIs from migrating to the service

Thread: Medium
In case on-premise software solutions do not adequately consider migrating to another solution or implement means for performing exit migrations, the costs for switching to any alternative solution rise drastically. While other product solution providers offer consulting services and paid migrations, this cannot be offered rigorously in a service-based solution.

Mitigation Strategy:
Our research revealed that migrating out of an on-premise solution can be daunting, but MFIs are used to frequent switches and ready to accept the disruptions that go along with it. Initially it would be required to offer paid migration services to a small set of MFIs until a critical mass of clients has been reached. As a mid-term strategy one option will be, to partner with certified IT solution providers in the target markets who would be trained and able to perform the migrations on a per-contract basis. Other options will have to be tested once the solution is in place and business networks in the markets have gained stability.

Risk: Low internet connectivity rates prevent organizations from using the service

Threat: Medium

As an online software service provider targeting less developed nations, internet penetration is a challenge. Although as the penetration data suggests, the rate of growth is very rapid, an organization with even one or two branches that are unable to gain internet access may not be able to use the service.

Mitigation Strategy:
Target markets with strong internet backbones first to allow the business to grow as the lagging markets develop their own infrastructure. It will also be important to design the service in such a way that it is usable over not only broadband but also slower connection (such as GPRS).

Risk: Business model does not allow giving support to numerous organizations worldwide

Threat: Low
Microcredit organizations are distributed globally and work in many different languages under different conditions. Acquiring more clients will be directly correlated to an increase in the demand for support.

Mitigation Strategy: One immediate strategy is to reduce the need of support. This is achievable via thorough backend and interface testing in the field, but also by creating cost-effective cross-language training and support material through images, video and text available over the website. The medium-term strategy will be to hold workshops in countries of deployment to both potential and active customers to train them in using the service. Knowledge acquired from these workshop meetings has to be piped back into a community knowledge base that is publicly accessible and facilitate the development of new functionality in the service.

Risk: Solution fails to serve specific client needs without compromising simplicity

Threat: Low
Many microcredit organizations claim to operate different and are uncertain if one solution designed for numerous organization worldwide would be applicable to them. The organizations offer different products and have difference business processes to support them.

Mitigation Strategy:
A SaaS solution by its very design must be customizable to address the needs of numerous clients and ways of business operations. As well, our field research shows the similarities far outweigh the difference. Most processes observed can be implemented in an open manner in order to accommodate the particular habits of each individual MFI. However, surveying and studying the needs of each country and market will need to be done before attempting to advertise the product there.