Agile Decision Making Framework to Support Mobile Microloans for Unbanked Customers

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ABSTRACT

Financial institutions have revolutionized in the past decade and embraced the use of technology in improving and enhancing their services. Their hope in technology has urged them to continuously want to improve on their technologies and the use thereof as the environment they live in changes. Financial institutions have developed different products and service offering for the poor through mobile technologies and this has demonstrated how financial institutions have evolved and left their comfort zone in pursuit of the market they once thought of as being costly to serve. However, as much as financial institutions have embraced new technologies and adapted their processes to cater for this segment little has been done in providing microloans to the poor. Financial institutions still wants to employ the old methods that they have always applied and worked for them in the past for loans decision making. This study discusses the need for agility in decision making of mobile microloans and presents a framework to serve as one of the solutions for effective mobile microloans for the unbanked.

Keywords
Agile decision making, Mobile, Microloans, Unbanked.

INTRODUCTION

Once merely seen as a dream, banking the unbanked\(^1\) is slowly turning into reality thanks to the maturing reality of mobile technologies and the banks continued persistence in catering for the long neglected market of the unbanked. Developments in mobile technologies have made it possible to bank the poor. Mobile technologies have enabled financial institutions to produce exceptional results they were not previously capable of generating when it came to serving the poor (Ncube, Lufumpa & Ndikumana, 2010). They innovated and developed new models and processes to cater for the unbanked and this is notable in their service and products offerings. For example, financial institutions have embraced the mobile payments and created a safe way for the unbanked to receive and send money likewise they have also embraced offering insurance through mobile technologies. Serving the unbanked and making them part of the banked include being able to offer them services such as savings, insurance and credit (Magner, 2007). The provision of all these services promotes financial inclusion for the unbanked.

\(^1\) Unbanked can be defined as the poor people with little or no income, that are employed informally and have unmet needs of financial services. Disadvantaged who need banking services can include owners of micro-businesses, tradesman or employees without bank accounts.
Various initiatives use mobile phones to provide financial services to those without access. These services have mainly focused on remittances, prepaid purchases and micropayments. For example, FNB eWallet, Nedbank/Vodacom M-pesa and Absa Cashsend are some of the innovations introduced by financial institutions. However, there is little research which explores the use of a mobile phone in contracting new services especially loans. Contributing factors are that the poor are involved in informal jobs which remuneration are often done in cash and lives in rural or semi-urban areas with no proof of regular income (Rhine, 2009; Porteous, 2007; Naidoo, 2005). Hence this study intends to fill this gap with emphasis on agility in decision making for mobile microloans provisioning. Managers at financial institutions are faced with decisions tasks daily or on more frequent basis whether to grant a loan or not to the unbanked, and with the occurrence of the changing environment requirements of this segment they require new insights.

Too many financial institutions are not opening their eyes to the opportunity of providing mobile microloans. They do not understand what agility in decision making can do to change the way they compete. Financial institutions say they have years of experience in loan decision making and know the way it should be done and they forgetting that the new segment they serving requires new processes and models of assessment to help in decision making. We think, historically, a lot of banks have been implicitly or explicitly rewarded for that kind of confidence. They now need to have a different kind of confidence to be willing to let decision making to be agile when it comes to mobile microloans for the unbanked. Financial institutions need to embrace the agility that comes with mobile microloans and at the same time not ignore the complexity of loans and the risk involved. Moreover, they require new level of thinking if they really want to end up as leaders in financial inclusion as opposed to being the laggards. Circumstances of the poor requires different models for the service or product offerings to be of value to all parties concerned and this can be observed from the mobile payments success (Alexandre, Mas & Radcliffe, 2010). And such lessons needs to serve as guidelines because they allow the organizations to understand in much more detail what they customers need and what processes will best serve them without compromising quality and value for all parties concerned.

To accomplish this, it is important to broaden understanding on agility in decision making for mobile microloans and its importance. Furthermore, attention is needed on understanding what should financial institutions and their managers do to help their organization succeed in fully serving the unbanked. This paper will be structured as follows: First, we explore the current status of the unbanked in South Africa (SA) and progress made thus far in servicing this market followed by a brief discussion on the need for microenterprise finance in South Africa. Then, the current model of decision making in microloans is demonstrated thereafter the importance of agility in decision making for mobile microloans provision is discussed. Finally, we close with a discussion on the guidelines of employing agility in decision making for mobile microloans.

**CURRENT MICROFINANCE ENVIRONMENT IN SOUTH AFRICA**

South Africa has better developed consumer credit system in the world which is characterised by modernised lending, extensive information sharing, and credit analytics for lending decisions (Calvin & Coetzee, 2010). Despite this well-developed system, access to credit remains a significant problem for many consumers and informal business owners (Turner, Varghese, Walker & Lenisa, 2009). South Africa has a high percentage of unbanked people, which tend to be people who are either unemployed or employed in informal jobs and gets paid in cash. Among other factors that prevent poor people from having bank accounts is the cost of bank charges and the fact that one is required to provide proof of regular income to have an account. For most people that live in a rural or peri-urban area there is very limited or non-existent of banks (Bandyopadhyay, 2009). As a result of the dual\(^2\) nature of South African economy Micro Finance Institutions (MFIs) are faced with the challenge of having to pay high salaries to their skilled employees while they earn revenues from small sized loans; as a result the employment cost to loan size disparity becomes the burden to the organisation. MFIs face significant competition for borrowers with good credit records from formal lenders such as commercial banks, who offer a broader array of financial products and greater number of locations (Skowronsks, 2010). Naidoo (2005) points out that microfinance is characterized by limited outreach, high losses in some cases, large unused reserves, low capacity levels and closures among retail intermediaries, lack of suitable financial products for clients and the lack of investment in growing capacity and developing products among institutions.

\(^2\) The dual nature of the South African economy refers to the nature of SA’s economy which is characterized by two economies namely the first and second economy. These economies are characterized by inequality where the first economy is modern and integrated to the global economy while the other part is underdeveloped and contains majority of the poor population and is structurally disconnected from the first and global economies.
Creating a breakthrough in extending microfinance services (micro enterprise loans) to marginalised populations is one of the challenges facing the microfinance industry in SA. The microfinance sector in South Africa is dominated by consumer loans to salaried workers and with little evidence of pro-poor focus (Porteous, 2000; Calvin & Coetzee, 2010). Calvin & Coetzee (2010) argues that the salary-based lending sector has come close to saturation with the exception of the low income housing market. They continue to state that microenterprise sector is lagging behind with an estimated 7.5% of the two million survivalist microenterprises being served and only 1% of the one million higher level microenterprises being reached. Microenterprise lenders in SA have not being able to reach scale and international levels of performance with an individual lending methodology. These factors can be attributed to the size of the upper end of microenterprise market which is smaller and more dispersed than the survivalist level of the market (Calvin & Coetzee, 2010).

Financial inclusion has been a focus of attention in recent times. However, the facts above still reveal the real and somewhat uncomfortable picture. The increase in the number of branches and Automated Teller Machines (ATMs) has not answered the need of the poor for financial services (Ncube et al., 2010). SA has a low branch and ATM penetration and about 40% of the population still have no access to formal financial services, banking the unbanked still remains a serious problem today.

South Africa in comparison to the rest of the developing world is lagging behind in developing the microfinance sector (Ntuli, 2010). The profile of the microfinance sector in South Africa is of a maturing industry; it is still expanding and innovating and has passed the early stage of rapid growth for two of the primary product categories: micro deposit services and salary based microloans (Calvin & Coetzee, 2010). A third primary product, loans to microenterprises is lagging far behind, achieving less than 20% of potential market penetration (Calvin & Coetzee, 2010). It is particularly costly to serve the microenterprise market in SA when compared with other countries: salaries levels for management and staff are higher; markets are less dense and distances are further to travel; security costs are higher; repayment discipline is harder to enforce (Calvin & Coetzee, 2009; Skowronski, 2010). Providing microenterprise loans in SA is very difficult because there is a number of challenges that hinder the process which makes accessing loans an unsustainable and costly exercise. As a result, it is vital that efforts are constantly made to remedy the situation. Hence it is important to understand the need for microenterprise finance for the unbanked and why it is of strategic importance.

**NEED FOR MICROENTERPRISE FINANCE FOR THE UNBANKED**

While it can be argued that microenterprise finance is another access to finance hype similar to consumer finance, it should be realized that the difference with banking the poor is that it centrally focuses on understanding the needs of unbanked or underserved population. This is one factor that financial institutions needs to really pay attention to, especially if they intend to survive in the changing environment and wants to penetrate this lucrative market. Furthermore, with the increasing gap of inequality, increased pressure of sustainability and efficiency, and the need to scale operations becoming a reality of the financial environment, it is unlikely that a decrease in rapid changes taking place will be seen. This means that these organizations need to constantly re-evaluate their activities and processes. The ultimate objective of microenterprise finance is to formulate products and services that are suitable to the needs of the underserved. Such products and service offerings should be able to scale and be provided efficiently.

The reasons why financial institutions need to cater for the unbanked or underserved population has been identified from the literature as follows:

- The government through the Financial Sector Charter (FSC) has exerted pressure on the banks to respond and cater for this population (CGAP, 2010).
- The unbanked market segment presents about 13 million adults in South Africa and equivalent of R54 billion every year that is completely unbanked at this stage (FinScope, 2009).
- The social welfare system in South Africa paid out R69 billion in 2009 to grant recipients all over the country and this amount continue to increase (Deloitte, 2010).
- The value of cash-to-cash money transfers within South African borders is roughly estimated at R19 billion per annum (Deloitte, 2010).
- Loans to microenterprises is lagging behind and not achieving potential market penetration (Calvin & Coetzee, 2010).
The above is by no means an exhaustive list of the reasons for the call of microenterprise finance, but to provide organizations with sufficient motivation for ensuring that inclusive banking forms part of their organizational strategy. Furthermore, Magner (2007) argues that for institutions to increase outreach they need to leverage their resources and form a platform to offer integrated services as this can increase economies of scope for all the organizations involved in trying to service this market. An understanding of the current models of decision making employed when making decisions for loan provisioning for the unbanked can benefit the financial institutions in servicing this segment.

CURRENT MODELS OF DECISION MAKING FOR MICROLOANS

When looking at the current existing models used in providing microloans for the poor, they rely on trust and group security where members serve as surety for other members. These include careful targeting of the poor through a means test; the use of self-selected groups of borrowers, generally consisting of five members, who guarantee each other’s loans; compulsory savings mobilization, with generally little or no emphasis on voluntary savings; intensive motivation and supervision of borrowers (including the use of weekly meetings); and decentralized operations.

Another method that is popularly used is the credit rating system of the credit bureaus where past performance is used as a measuring criterion to determine future credibility of the applicant (Turner, Varghese, Walker & Lenisa, 2009). This type of model works well for people with a credit history and as for the unbanked who do not have any sort of history it puts them at a disadvantage. Over time financial institutions tried out new models where they take holistic view of the poor by assessing and looking into their environment. For example, when an applicant completes a microloan application they assess the business and its environment (SWOT Analysis) and then calculate financial statements based on the information provided by the applicant of their business thereafter they create three scenarios (Best case, worst case and the moderate case scenarios). However, our observation of this model is that the information that comprises the financial statements is one sided as it is only information provided by the applicant and not much is done to scrutinize this data (quality assurance). Hence this type of model puts both parties at a risk.

Against this backdrop, financial institutions need to understand the nature of the survival businesses environment and to profile them such that they can use that information in decision making. Understanding the environment is key to knowing how much these organization are capable of generating and how social factors in their environment affects their progress. In some cases you find that a thriving business progress gets delayed by stock theft or gets affected by seasonal factors of their business. Therefore, such factors are important and needs to be taken into account when providing the unbanked with finance as these types of business do not have enough reserves. And for these to take place we advocate for agility in decision making as it can provide financial institutions with assistance on how to cater for this segment.

IMPORTANCE OF AGILITY IN DECISION MAKING FOR MOBILE MICROLOANS

Agility can be defined as the ability to detect opportunities for innovation and seize those competitive market opportunities by assembling requisite assets, knowledge, and relationships with speed and surprise (Sambamurthy, Bharadwaj & Grover, 2003). Agility encompasses the exploration and exploitation of opportunities to gain competitive advantage thereby adding value to the organization. Exploration is about the organization innovating and experimenting with new alternatives and building their knowledge capacity about currently unknown opportunities for competitive advantage. Exploitation is about the use and development of new alternatives from refining currently existing know-how (models and processes). Oppenheim, Bagheri, Ratakonda & Chee (2011) argues that agility is widely recognized as a key business differentiator. Furthermore, they continue to say that it requires three fundamental capabilities: an ability to detect that there is a need for change, support for business stakeholders in deciding what the best way to change is, and ability to quickly enact their decisions across the business ecosystem.

Decision makers focusing on inclusive banking especially loan provisioning for the unbanked need to assess various courses of action; various potentially good avenues of resource; or investigate the relativity of one potential decision over others, and make a choice. Such activities are multifaceted, and the process of quality decision-making includes aspects such as decision maker behaviors and strategies, presentation of data used, and inherent timeliness of decisions on loan approval. It has accordingly become apparent that a new approach is needed in mobile microloans to be efficient and add value to all parties concerned.
Without agility in decision making financial institutions may still want to use the same processes that they have used for the upper market to assess the unbanked and forgetting that they will not get the appropriate result as they might over capitalize or under capitalize them. Looking to the credit bureaus as the main assessment method might marginalize the majority of the poor and restrict them to get access to microloans as they are unlikely to have any credit history. If financial institutions are not agile in decision making they might find themselves in a situation where they give the unbanked loans they cannot afford and as a result the loan portfolio will not perform as it should.

Moreover, without agility managers’ common tendency might be to use high interest rate to compensate for the high risk associated with the unbanked and argue that they do not have collateral. High interest rate when used as a way to justify the unsecured nature of the loans and the risk characteristics of the poor, consequently this type of thinking makes it difficult for the poor to access microloans or makes it burdensome for them to make repayments and as a result they will default on their loan. Consequently banks standout to lose and cannot recover the loans and ends up writing them off as taking legal action against the poor might serve to be costly as a result of the size of the loans.

Relying on the credit bureaus for credit ratings for the poor sounds reasonable except that it does not work at times. Financial institutions find themselves with a loan portfolio that is underperforming and clients are defaulting. Reality is that if you over capitalize the poor with say twice the amount they can afford, it can sabotage even the best emerging business and they will struggle to meet their repayments which will lead to them defaulting. The point is that, financial institutions when serving the poor needs to be agile as they possibly can. Because in the absence of management decision making agility, when it comes to the risky nature of this segment we have a scenario described above. Financial institutions need to be agile in decision making and find better ways and not rely on old methods. They need to consider other techniques that exist that can be used to determine the risk and intentions of the loan applicants. Such a technique can be the psychometric assessment that looks into the ethics and honesty; intelligence; business skills; attitudes and beliefs of the applicant combined with the profile of their business (EFL, 2011).

In servicing the unbanked it is often not enough to have the old methods of risk assessment in decision making. On the other hand, poor decision making without agility can have disastrous consequences. When this happens financial institutions risk the travesty of driving even a prosperous organization off a cliff because of bad decision making in capitalizing the unbanked. We submit that if financial institutions are agile in decision making, then the resultant effective loan provision is nearly possible to achieve.

AGILE DECISION MAKING FOR MOBILE MICROLOANS

The nature of loan provision is complex and it is more complex when taking into account the environment of the unbanked. Loan decision making requires careful thought before a decision is taken whether to grant a loan or not and this requires expertise in several disciplines as it is costly to financial institutions as it determines their success. Detailed processes, methodologies, and best practices guide the decision making process. Uncertainty and unpredictability nature of banking the unbanked can be managed by flexibility and adaptation, which is why agility in decision making is important in mobile microloans provisioning.

Successful and effective loan provisioning for the unbanked depends on containing their inherent unpredictability. To do this one must (1) identify the critical factors early, (2) figure the best response and (3) and make the necessary changes. Agile decision making for mobile microloans requires human knowledge, experience in working with small business, leadership and creativity. People need to do everything that technology cannot do, and technology must support people in doing what is left. To understand how and what needs to be supported for successful agility decision making; next we demonstrate how it can be implemented in an organization. Agility in mobile microloans decision making requires that the executive buys into this and adopt it as a strategy and that the organization has the required skills to carry out this specialized task. Figure1, below provides a schematic representation of agile decision making for mobile microloans provisioning.
The people and process pillar supports the mobile microloan operations, which have a clear progression from initiation to completion. These pillars focus on management process, the users and the producers of information. It’s important to understand the different roles the different groups of people plays and how business intelligence will fit in within the processes they support. The producers of information deals with locating and accessing the information that is relevant to the mobile microloans function and the users of information who handle the organizations analytical, business and decision process.

Business profile engine will serve as a repository of information of all the businesses that the unbanked pursue. Building this repository can be complex as financial institutions will need to go out and study the environment of these businesses and select the critical factors that will be used as dependencies in loan decision making. Such factors are the type of business, size of stock, profitability and seasonal factors. Furthermore, a psychometric assessment engine will also need to be developed, particularly to serve as the backbone that will determine the credibility of the applicant. Determining the risk profile of an applicant will in this instance rely on the factors of alertness and responsiveness of the entrepreneur’s market conditions, competitions and opportunities which will be determined after the applicant has completed an assessment. Understanding of these factors will allow the financial institutions to have insight on the capabilities of their clients with regard to their environment and whether they are able to explore new opportunities. For example, an applicant can be requested to determine how much profit they are making if they had purchased stock of an X amount and if they can easily identify new opportunities.

Data integration pillar involves combining data from the different sources and providing users with a unified view. It provides capabilities for enterprise data access and processing across systems which is critical to producing accurate, consistent information and interactive data integration development environment that enables collaboration and easy reusability.
To figure out the best response, a \textit{business intelligence engine} focuses on helping financial institutions learn and understand the unbanked as a market. Business intelligence is proposed for providing a number of functions such as integration, information delivery and analysis. That is, coordinating and comparing the data provided from the business profile and psychometric assessment engines. This engine will use the intelligence algorithm to turn this data into valuable information that can be used to learn new things and discover new answers. For example, the intelligence will try and match up the experience the client has with the future years return rates. Furthermore this data will be fed into a \textit{collaborative analytics component} which basically supports the business intelligence engine and takes into account all information provided and creates the three scenarios (best case, worst case and moderate case scenarios) which shows how the applicant business is performing after all environmental factors are taken into account. Analytics supports users in instances where they require more details from the data and require more analysis to be performed.

\textbf{Reporting and monitoring pillar} provides an interface that is to support the users and provide them with the necessary reports for efficient monitoring of the loan portfolio.

\textbf{Risk analytic layer} serves to improve an institution’s risk assessment time, speed, accuracy, consistency, bad debt reduction and prioritization of collections. Using risk analytics, an institution can review its entire portfolio in the time that it would take to review just one account by traditional methods. Furthermore, it permits regular reviews of the entire account base, thereby, quickly and efficiently identifying accounts that require immediate attention, and isolating customers who warrant human intervention. The risk analytic layer can also be a tool to identify accounts that have the potential for fraud. It can provide an overall evaluation of the portfolio by identifying its quality as well as the potential for bad debt write-offs and corresponding re-capital requirements.

\textbf{Security and data privacy layer} focuses on protecting information from unauthorized access, use, disclosure, destruction and modifications. Information integrity is important for agile decision making for mobile microloans for the unbanked hence consistent and accurate data should be maintained at all times.

\textbf{Legal and regulatory framework layer} serves to focus on the growing compliance of the financial services institutions and the protection of the unbanked. Since compliance represent a significant portion of the operations for financial institutions, it is important to emphasize and enforce it to ensure smooth operations of the organizations operations.

In order to determine the practicality and validity of the agile decision framework expert based evaluations will be used to evaluate the proposed framework. The evaluation study will typically be carried out in an ad hoc way, heavily reliant on the skills and intuition of the staff (experts in mobile banking and microfinance) carrying out the evaluation. Evaluation criteria will be chosen and the appropriate hierarchy determined for these criteria. The first step will be to establish the most important features according to the intended purpose and after that investigate additional features within groups of criteria, according to available time and preferences. This practical work is necessary for evaluation, because it gives an impression about the framework and actually tests framework practicality (it is not impossible that certain features work on paper but not in practice.

\textbf{CONCLUSION}

In this paper we have introduced a set of new guidelines for mobile microloans decision making through an intelligent hub. We have demonstrated how these guidelines addresses the key challenge of providing mobile microloans taking into account its complexity and the unpredictability of the unbanked. Furthermore, financial institutions need to focus on creating a valuable service that will in turn be of value to the poor and to their organization. Such a service will serve the poor and not punish them with high interest rates as a result of not having a credit history. The former will be achieved through financial institutions building a business profile engine which will be their view of the unbanked business environment and this does not become a one sided affair where the unbanked provide their information; it allows for comparison of information on both ends. Agility in decision making for mobile microloans is about balancing the trade-offs between the cost of service and the customer experience benefits ensuring that loan provisioning can be efficient and be executed consistently.
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