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# Deepening financial inclusion through collaboration to create innovative and appropriate financial products for the poor

Tonny K. Omwansa and Timothy M. Waema

KBA Centre for Research on Financial Markets and Policy  
Working Paper Series

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# Deepening financial inclusion through collaboration to create innovative and appropriate financial products for the poor

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January 2014

## Abstract

The Central Bank of Kenya has in the recent years introduced several regulatory interventions aimed at increasing financial inclusion. Mobile operators and financial institutions have successfully launched numerous services either to increase the convenience for existing customers or to reach out to new customers. There is evidence of more un-banked people moving into the formal financial grid and money initially circulating in informal systems can now be accounted for. Mobile money has made it much easier to receive and transfer money as well as make payments. Agency banking and cash merchants have taken the cash-in-cash-out points much closer to the consumers.

Despite this progress, access to formal financial services in Kenya is still low. In particular, the very poor people who are characterised by low literacy levels and generally low, irregular and sporadic income, in most cases do not have the appropriate financial tools that fit their lifestyle and can help alleviate their poverty. Research shows that the poor need financial tools that are appropriate, flexible, convenient, quick and affordable. The mobile money channel and the agent network provide the best avenue so far for reaching the very poor, but the business case for serving this segment of the market has not been well developed to incentivise the main players to be actively involved.

The findings in this paper are an amalgamation of three studies conducted in Kenya. The first study focused on developing case studies on how the prepaid and pay-as-you-go models riding on the rails of mobile money are being used to conveniently provide commodities and services to the very poor. The second study focused on the adoption drivers for mobile

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money at the base of the pyramid while the third evaluated the impact of pure mobile phone based micro-financing in Kenya.

Building on literature about the poor and their money combined with evidence from the studies mentioned, the authors present practical and evidence-based recommendations to demonstrate that it takes additional players and innovative approaches to enable financial institutions and mobile network operators to develop and aggressively promote sophisticated financial services for the poor.

The paper discusses key adoption drivers, lessons learnt about the characteristics and impact of new forms of financial services for the very poor. Design features for making financial services for the poor innovative and

appropriate are discussed in the context of adoption drivers. The design features form a good basis for analysing the challenges of designing and deploying these products.

Mobile money needs to be viewed more and more as a platform, as opposed to a product or service to be consumed. There is need for a deliberate effort to conduct multidisciplinary and all inclusive research and development on relevant products for the poor that could be bundled with or ride on the rails of mobile money. Deploying and successfully managing services based on business models targeting the poor would require synergy between stakeholders, a vital ingredient that would facilitate financial inclusion and more broadly translate to benefits for the consumers.

**Key Words:** mobile money, poor, financial inclusion

# Introduction

## Background

The percentage of poor people within our society is still large. According to the World Bank data about world's poverty estimates as at 2010, almost half (43 percent to be precise) of the world population lives on less than US\$2 a day. In Sub-Saharan Africa, 47 percent live below US\$1.25 a day. In Kenya, an estimated 46% of the population lives below the national poverty line [34].

About 2.5 billion adults, about half the world population, do not have a basic bank account. In most of the developing countries, less than half the population has a bank account. In particular, 90% of this formally excluded population lives in Asia, Africa, Latin America and the Middle East [1]. In the 2009 study on financial inclusion in Kenya, 59% of the adult population was found to be either completely excluded or utilising informal methods. These figures have certainly changed over the past few years as the uptake of mobile money has exponentially grown. At the time of writing this paper, the latest figures were not out. However, the change from an exclusion rate of 74% in 2006 to 59% in 2009 is clear evidence of a trend [6].

There is a growing body of knowledge demonstrating that an increase in access to formal financial services has the potential of moving people out of their poverty trap. Some of the main benefits of moving more of the financially excluded people into the formal grid are to reduce transaction costs, mobilize savings and encourage investments [13]. The lack of access to formal financial services is



linked to the persistent income inequality and slow economic growth. It is also argued that the financial services to the poor should be appropriate and affordable in order for them to have the desired effect [3][2]. In its development strategy, Vision 2030, Kenya is striving to become 'a regional financial hub with vibrant, efficient and globally competitive financial systems'. An increase in access to affordable financial services to all Kenyans, particularly the poor is part and parcel of this development strategy. This therefore implies that low-income households, small business owners, individuals in rural areas and slums are given specific consideration in this strategy [7] [20].

In mid 2010, the G20 Financial Inclusion Experts Group published a set of nine principles on innovative financial inclusion that could spur innovation for financial inclusion while protecting financial stability and consumers. The report notes that 'Innovative modes of financial services delivery can have a transformative effect on poor households' [8]. Innovation is one of the nine principles in the report.

The G20 emphasises by 'promoting technological and institutional innovation as a means to expand financial system access and

usage, including by addressing infrastructure weaknesses.' In addition, the report identifies cooperation as another principle which is described as 'creating an institutional environment with clear lines of accountability and co-ordination within government; and also encourage partnerships and direct consultation across government, business and other stakeholders.'

### **Aim**

The aim of this paper is twofold: First is to demonstrate that one promising strategy to deepen financial inclusion at the base of the pyramid is through collaboration between strategic partners who would develop and execute innovative and appropriate financial solutions to this segment of the population and secondly to discuss some challenges to achieving these innovative and appropriate financial products.

## Review of relevant literature

### Financial inclusion trends in Kenya

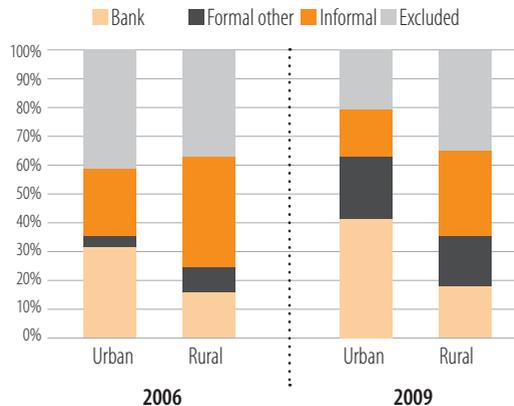
**T**Kenya is classified as a developing country, with a population of about 43 million people World Bank [34]. The financial sector is relatively well developed. There are 43 licensed commercial banks, nine Deposit Taking Microfinance Institutions (DTMs), over 3000 Savings and Credit Cooperatives (SACCOs), 125 foreign exchange bureaus, one mortgage finance company, one Postal Savings Bank and an Association of Microfinance Institutions (AMFI).

The country's banking sector has undergone substantial transformation particularly from the year 2005. Within three years, the number of deposit accounts went up by 3.9 million, a growth rate estimated at 152%. Within the same period, the branch network expanded by 60% while the ATM network grew from 323 units to 1,325 [7]. Informal finance, Rotating Savings and Credit Associations (ROSCAs) and Accumulating Savings & Credit Associations (ASCAs), where individuals agree to meet for a defined period so as to save and borrow together, have continued to grow. Agency banking was commissioned in April 2010, which has resulted in a rapid uptake of banking agents (about 17,000 by March 2013) that compliment the over 60,000 Mobile Network Operators (MNOs) led mobile money agents as cash-in-cash-out points [21].

Access to formal financial services has grown more in the urban areas. For example between 2006 and 2009, those accessible to formal banking services rose from 31% to 40.3%, while access in rural areas it increased only from 14.9% to 17.6%. Figure 1 summarises the comparison between rural and urban users over that period.



**Figure 1: Access strands (Rural vs. Urban)**



Source: FinAccess, 2011

The rapid uptake of mobile financial services in Kenya has demonstrated the potential of reaching the poor using mobile technology and generated enthusiasm across the world about what is possible with these technologies.

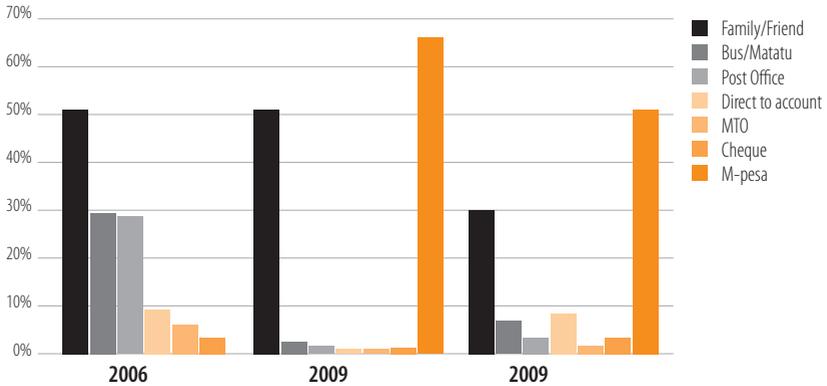
From Figure 1, it is to be noted that between 2006 and 2009, the financial landscape in Kenya dramatically changed with a significant growth in the formally included rising from 26.3% to 40.5% [6]. The more than 10% growth is undoubtedly associated with the uptake of mobile money in the country, particularly M-Pesa [5]. It is also to be noted that while the excluded in urban areas shrank over this period, it hardly changed in the rural areas, suggesting some barriers or inhibitors for diffusion in rural areas.

In April 2007, Safaricom launched the famous M-Pesa platform primarily for domestic money transfer. At the time of the FinAccess 2006 study, there were about 5.3 million MPesa subscribers, which was equivalent to 25% of the adult population. Figure 3 shows the contribution of M-Pesa in increasing the formal financial access in Kenya between 2006 and 2009. There was a shift in the channel of choice for domestic remittances, as shown in Figure 2.

The study also revealed that financial exclusion fell from 38.4% to 32.7% of the population.

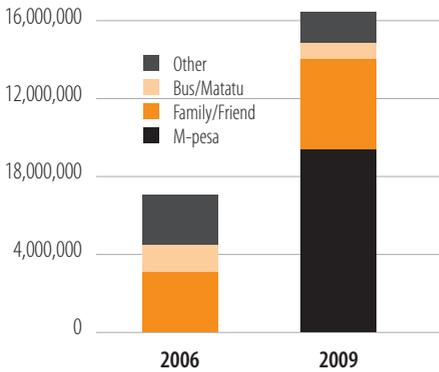
The financial access strand in Figure 4 demonstrates a change in the access to financial services over the three years.

**Figure 2: Choice of remittance channel between 2006 and 2009**



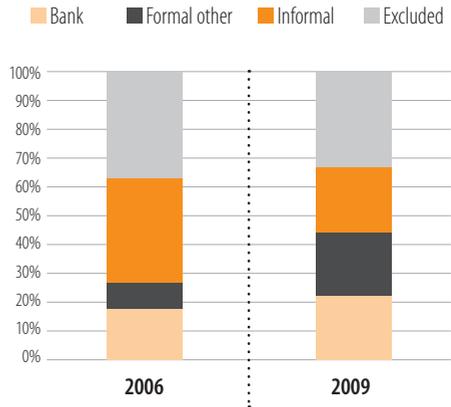
Source: FinAccess, 2011

**Figure 3: Use of money transfer options in 2006 and 2009**



Source: FinAccess, 2011

**Figure 4: Financial Access Strand (2006 vs. 2009)**



Source: FinAccess, 2011



With the rapid uptake of mobile financial services, the prospects are high for evolving into of a 'cash-lite' financial system that enables transactions to be carried out at lower costs and at a much higher accessibility level. This development is greatly supported by aggressive MNOs providing mobile money services, agency banking and a supportive regulator among other stakeholders.

There is now a new category of start-ups and programs that ride on the rails of mobile money. Gradually mobile money in Kenya has evolved into a fully fledged platform [23].

Some start-up companies have focused on streamlining businesses that originally operated on cash; others provide mobile financial services such as micro-loans, micro-insurance, layaway programs, among others. Hundreds of business have now integrated with mobile money and are able to seamlessly link to bank accounts as entrepreneurs provide integration capabilities. These new developments provide a basis for this paper, to lay emphasis the opportunity available in synergistic collaboration between mobile money providers, financial institutions and entrepreneurs to extend financial inclusion. With emerging business models for the BoP, mobile money can become a strong conduit to formalize financial transactions for the poor.

The poor, just like anyone else, do not just transfer funds for the sake of it, they transfer for a purpose,

such as buying, saving or paying. In their paper titled "The fortune at the bottom of the pyramid" Prahalad & Hart (2002) argue that "Low-income markets present a prodigious opportunity for the world's wealthiest companies — to seek their fortunes and bring prosperity to the aspiring poor", and demonstrates that there is a huge opportunity in serving this market segment [25]. There have been assumptions about this market segment, which the authors discuss. Addressing large corporate, the first and third assumptions state that 'The poor are not our target consumers because with our current cost structures, we cannot profitably compete for that market'. Only developed markets appreciate and will pay for new technology. The poor can use the previous generation of technology.' These assumptions have been proved wrong in a number of cases. In the book "The Fortune at the Bottom of the Pyramid" which was a follow-up of the paper with the same title, Prahalad (2004), demonstrates through business case studies that there are businesses that have thrived with such emerging models [26]. Safaricom and Equity Bank are examples of local companies in Kenya that have substantially grown while serving the poor [23].

## **The poor and their financial lives**

### ***The sophisticated financial lives of the poor***

There is a growing body of knowledge showing that the poor live sophisticated financial lives. In the portfolios of the poor, Collins, et al (2009) investigated on how the world's poor live on US\$2 a Day [2]. The

researchers reported on a yearlong data collection of daily financial transactions (financial diaries) of villagers and slum dwellers in Bangladesh, India, and South Africa. The analysis of the data showed that most of these poor families did not live hand to mouth, rather, “they employ financial tools, many linked to informal networks and family ties. They push money into savings for reserves, squeeze money out of creditors whenever possible, run sophisticated savings clubs, and use micro-financing wherever available”. This means the poor do actually save, borrow, lend and prepare for rainy days. Since the publication of the book, there has been a lot of attention on the nature of financial lives the poor live.

One of the findings from the Portfolios of the Poor is that the poor households are frustrated by the lack of appropriate financial instruments that could help them manage their resources better as a way to accelerate their lives out of poverty [2].

One of the characteristics of the financial lives of the poor is that they have low income, which is irregular and unpredictable. The estimated USD2 per day is an average, meaning that some days they could earn upwards of USD 5 while other days they would go without any income. For individuals who are engaged in activities like peasant farming, which are seasonal, their income could vary even more. Given the nature and flow of income to the poor members of society, their level of uncertainty is high. This translates to them living less healthy lives, staying in less secure

places and facing income volatility associated with the market supply and demand dynamics [2] [8].

### ***The poor lack appropriate financial tools***

The need for appropriate financial tools becomes even more elaborate for this segment of the population. Money management could be considered more crucial for them than those higher in the economic pyramid [8]. Given the low, irregular and unreliable income, tools that facilitate savings, streamlining of cash flows and accumulation for bigger ticket items (lump sums) are of greater value for this class. In their study, Collins et al. (2009) summarised three needs that drive the financial activities of the poor as a) management of basics, which entails managing their cash flow so as to transform the low irregular income into a dependable source for daily living, b) coping with risk particularly emergencies and c) raising lump sums whereby they could reliably accumulate meaningful sums of money to buy expensive items or invest [2].

Given that the poor live sophisticated financial lives and yet lack appropriate formal tools, their only choice is the informal tools. These tools work and meet their needs. However, they are expensive, unreliable and at times unsafe because of poor quality [2].

### ***Impact of financial services for the poor***

As new and innovative techniques have been developed focusing on the poor, evidence has shown that their financial and economic lives have improved. Using financial diaries, Portfolios of the Poor [2],



have demonstrated that having access to a range of appropriate and affordable financial tools helps poor reduce their vulnerability to shocks. In addition, these tools improve the poor's welfare and in a number of cases, raises their income. There is evidence of impact of other forms including the benefit of a safer place to save, increased savings, improved credit worthiness, access to micro-credit as well as other indirect benefits like better financial patterns, increased agricultural productivity and reduced child labour.

There are certain characteristics that the poor value in financial services. Given the size of income, safety is certainly high in the list. The nature of the needs also necessitate that the funds should easily be accessible if they truly need to utilize them. Research in this area has shown that for short term savings, rewards in form of interest is not highly valued, rather safety and convenience would override the interests. In some cases, these consumers choose to pay a fee for the funds to be kept elsewhere reliably and safely [2].

### ***Financial institutions' efforts to serve the poor***

There is general consensus among scholars and policy makers that conventional financial institutions are expensive for the poor, which keeps them away from the banks. The result is that they cannot build dependable credit history, to enable them further participate in the formal economy [11][19].

Formal banking has not solved the challenges of the BoP. Over 100 years of the history of banking in Kenya, with its ups and down, has only managed 43 commercial banks, and a little over 1000 bank

branches. Newer and innovative models of providing financial services such as mobile money and agency banking have rapidly outpaced the conventional financial sector both in subscriber base and geographical reach [23].

Banks are designed to handle high value transactions, and as much as they are keen on the high frequency low value transactions, by design they move slowly in meeting the needs of the poor.

There are general deficiencies noted in literature in financial sectors in developing countries, such that despite the improvements in the last several years, the systems of several developing countries still struggle with market inefficiencies that affect the business environment.

There are cases of fragility and incompleteness. Micro Finance institutions, have made inroads into serving the poor, but have not been flexible, inexpensive enough and entirely effective in meeting the needs of this segment of society [27]. There are varying arguments about the effect of micro financing services in helping the poor escape poverty, partly because of the complexity of evaluating impact at macro levels. It's possible that lives are improved and financial lives more organized, but whether the poor actually get out of poverty is sometimes subject to debate, particularly at larger scales. Despite the varying views, it obvious that the structure of services offered by MFIs is rigid and in some cases expensive [2]. Despite the closeness of MFIs to the poor, achieving the last mile still remains expensive.

Researchers have established a number of factors that have made mobile financial services succeed so rapidly in Kenya. The factors include an existing demand for reliable services and low transaction costs [5] [6] [23].

Emerging innovative financial inclusion models characterised by synergy Mobile financial services are now common place in a number of developing countries and are filling the much needed gap of offering appropriate financial tools. The G20 financial inclusion experts group describes 'Innovative Financial Inclusion' as the 'delivery of financial services outside conventional branches of financial institutions by using information and communications technologies and non-bank retail agents and other new institutional arrangements to reach those who are financially excluded.' This description extends to include all forms of delivery and cash-in-cash-out, including mobile phone payments and point of sale services [8]. The examples of innovative financial inclusion exist in a number of countries such as Kenya, Philippines, Brazil and South Africa. In these countries, we find illustrations of use of mobile phones for financial access, agents for cash-in-cash-out and collaboration between mobile network operators (MNOs) and financial institutions to accelerate access to formal financial services.

### ***Emerging business models for developing markets***

BoP is gradually becoming a huge market, as emerging markets get to the centre stage of the global businesses opportunity discussions and the focus of

growth shifts from America and Europe to Asia and Africa [33]. The purchasing power at BoP is certainly low, but the fact that they purchase on a daily basis, implies someone has to provide the goods or services at the rate, quantity and price they can afford.

'Emerging Markets, Emerging Models' [11], a report by Monitor Group, a firm that provides strategic advisory, capability building and capital services identifies seven business models, tailored to low-income earners. Three of those focused at serving poor customers, are now common in Kenya. 'Pay-as-you-use' is where consumers pay lower costs for every single use of a facility, product, or service; 'No Frills' is a category of services or products which are supposed to meet basic needs of the poor at a very low price but still generates positive cash flow for the suppliers and 'Shared Channels', which enables piggybacking products and services on existing customer supply chains, so as to enable poor people to access and afford goods and services valuable to them. These models have different names in different contexts. Common terms include 'Pay-as-you-go', 'Lease-to-own', and 'Layaway programs', among others. Within the 'Findings and Discussion' section below, we discuss some of the successful models being applied by start-ups to extend financial inclusion by providing goods and services for which BoP customers pay through mobile money.

## Description of data collected

### Financial inclusion trends in Kenya

The data used for this paper is an amalgamation of three studies conducted in Kenya between the years 2010 and 2012. The first study focused on developing case studies on how the prepaid and pay-as-you-go models riding on the rails of mobile money are being used to conveniently provide commodities and services to the very poor. The second study focused on the adoption drivers for mobile money at the BoP while the third evaluated the impact of pure mobile phone based micro-financing in Kenya. Below is a brief description of each dataset:

The first study was aimed at documenting the impact of M-Pesa. The study was largely qualitative and nationally representative. A total of 89 in-depth qualitative interviews from a variety of respondents between January 2011 and August 2011. These interviews were purely exploratory with an aim of understanding the history, conceptualization, piloting, deployment, adoption and impact of mobile money in Kenya. The nature of respondents ranged from CEOs of telecommunication companies and financial institutions, government officers, management officers from regulators and development partner organizations, entrepreneurs, owners and workers in small to medium size enterprises and numerous users from a variety of socio-economic classes. At the BoP, the researcher interviewed farmers, small business owners, Jua Kali (informal business) artisans, fishermen, industry workers, house helps, just to name a few. These interviews were domesticated for different respondents with the aim of understanding their version of experiences. One of the outputs of this research work was the book "Money, Real Quick: Kenya's Disruptive Mobile Money Innovation" [23] in February 2012.

The second study focused on adoption of mobile money at the base of the pyramid. The aim of the study was to establish the relevant determining and moderating factors and use them to formulate a framework for technology adoption of mobile money by the poor in Nairobi.

Data was collected from 283 respondents in Nairobi’s poor areas. The poor areas, namely Huruma, Riruta Satellite, Kayole, Dandora phase 2, High-ridge, Highrise and Outering estate were sampled using a mix of random and stratified sampling techniques from a sampling frame of 52 poor enumeration

areas as provided by the Kenya National Bureau of Statistics [14]. The study was largely quantitative with an instrument guided by an enhanced Unified Theory of Acceptance and Use of Technology (UTAUT) framework[32].A number of constructs as defined within the framework, and domesticated to mobile money, were used to determine the data to collect and the kind of relationships projected between the constructs. These constructs are summarized in Table 1 [22].

The third study focused on a pure mobile-based micro-financing provider, Musoni who provide

**Table 1: Mobile money user adoption drivers**

Construct	Meaning	Domestication to mobile money
Performance expectancy	The degree to which an individual believes that using the system will help him or her to attain gains in job performance [32]	Usefulness, increased speed, increased productivity and convenience that potentially result from the use of mobile money
social influence	The degree to which an individual perceives that important others believe he or she should use the new system [32]	How adopters perceived that important others influenced their choice to adopt particular mobile money products.
Effort expectancy	the degree of ease associated with the use of the system [32]	Operationalized using ease of use, ease of mastering mobile money applications, clarity and the ease of understanding the mobile money applications.
Facilitating conditions	The degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system [32]	The ability to get assistance when having difficulties, availability of networks and agents, as well as accessibility
Perceived trust	The degree to which the use of an innovation is perceived to be relatively expensive [30]	Poor people are naturally sensitive to transaction costs and so a transaction cost
trialability	The degree to which an innovation may be experimented with on a limited basis 27]	Allows individuals to “test drive” an innovation before it is being adopted



micro-finance services to the unbanked through 100% mobile phone based financial services. The objectives of the study were, first to establish whether the clients recognized any socio-economic impact of utilizing technology based financial services and if it drove them to consider using less of cash in their other transactions. Secondly, to establish and quantify the impact of cashless mobile micro financing on the lives of the poor clients, including the apparent shift from cash to e-money on many of the clients' other transactions.

The researchers sampled one of the five Musoni branches, located in Nairobi. This branch was recommended by the CEO of the MFI. The researchers randomly identified 250 respondents to be interviewed. These respondents were based in registered groups and interviews were conducted after their weekly meetings. Of the 250 questionnaires filled, 245 were considered acceptable.

## Findings and discussions

### Appropriate financial services for poor

The study that focused on adoption drivers for financial services at BoP complemented the work done by Collins et al (2009). In their publication, the researchers summarized the key characteristics of what we could call appropriate financial services for the poor. The researchers proposed four design principles for what would make an appropriate financial service for the poor as summarised in Table 2.

**Table 2: Design principles for appropriate financial services for the poor**

Design principle	Brief Description
Reliability	Delivery of products and services at the promised time in the promised amount at the promised price.
Convenience	Ability to access the products and services quickly, nearby, privately and unobtrusively
Flexibility	Ease with which transactions can be reconciled with cash flows
Structure	Regularities that promote self-discipline

Of the constructs investigated as determinants of adoption of mobile money by the poor, the five tested positive as the strong determinants. These factors were Performance Expectancy, Social Influence, Transaction Cost, Perceived trust and Facilitating Conditions.

Table 3 summarizes the findings regarding these constructs.



**Table 3: Mobile money adoption drivers among the poor**

Construct	Construct	Discussion
Performance Expectancy	BoP found mobile money significantly transformative, which then drove adoption. For most of the respondents, there was no alternative formal financial service available to them. The prospect of helping manage finances, store, conveniently transfer, easily access make mobile money	The use of mobile money has evolved substantially over the last few years. It started off as a money transfer tool, but evolved into a sophisticated financial ecosystem linking multiple organizations. Mobile money was being used for several functions, including saving, purchasing, paying bills among others [6].
	The tendency to have family dependants in the rural homes makes mobile money a very important tool for them. In addition, the pressure from their significant others, whom they are most certainly in touch with using the mobile phones make mobile money an indispensable tool.	The poor, who are characterized by low literacy levels depend a lot on what their significant others believe is good for them. The ubiquity of the mobile phone and the ease of transacting create pressure for the user to adopt. The closely knit social structures also make mobile money an ideal tool that cements relationships.
	Trust appeared to be a key deterrent for mobile money adoption. This measure of consumer's level of assurance that the service will be provided with minimum possible hindrance [29] has been investigated broadly by other researchers.	Trust plays a critical role in social interactions where uncertainties and dependencies exist and tends to influence people's lives a great deal. Using electronic means to transfer money has a characteristic of uncertainty and therefore requires an element of Trust.
	Transaction cost for mobile money users comes in the form of withdrawal fee or cost of transferring funds. Transaction cost had a negative correlation with actual usage of mobile money. Compared to financial institutions mobile money services are considered cheaper.	A number of researchers have established the effect of transaction cost on behavioural intention or actual adoption. Transaction cost has been found to be a barrier to consumers signing up for electronic payments and more particularly mobile payments [16].
	Knowledge, access to information or help from the mobile money provider and access to agents has a positive effect on adoption of mobile money. The fact that users have the assurance that they can get help once they have began using mobile money is apparently very vital for poor users to actually use the product. The BoP users are likely to be even more sensitive about their money.	Technical support has been viewed as a moderating variable and confirmed its influence influence established [4]. Perceived support from mobile money providers has been found to influence intention to use [17][18].

Mapping the adoption drivers investigated in this study with the design principles identified by Collins et al (2009), we realize that the only new parameter is the perceived trust. This mapping is shown in Table 4.

**Table 4: Mapping adoption drivers to design principles**

Adoption drivers	Mapping to Design principle
Performance Expectancy	Reliability
Social Influence	Convenience
Facilitating Conditions	Flexibility and Structure
Transaction Cost	Reliability
Perceived Trust	Not Applicable

These adoption drivers or design principles not only provide us with a basis for developing relevant and appropriate financial products; they provide us with a basis for evaluating the existing or potential products]

**Mapping design principles to specific products**

In their study on ‘The Search for Inclusion In Kenya’s Financial Landscape’, Johnson et al. (2012) compared banks, informal groups and M-Pesa in the context of the four design principles for appropriate financial services for the poor. Table 5 summarises the mapping, indicating the informal groups and M-Pesa came very close to satisfying the design features for appropriate financial products for the BoP.

An ideal financial product would have, to a reasonable degree, all the adoption drivers or design principles. As shown above, there progress towards single products with these characteristics is impressive. Financial institutions introducing mobile and agency banking are now able to make financial services more convenient and partly flexible but appropriate structures for BoP hardly exist and transaction costs remain high. Mobile money as a channel provides the reliability, convenience and flexibility needed by the poor, but fails to provide a structure to instil discipline and the transaction costs particularly for low value

**Table 5: Mapping design principles to existing products**

	Reliability	Convenience	Flexibility	Structure	Cost
Banks	High	Low	Medium	Low	High
Informal Groups	Medium/Low	High	High	High	Low
M-Pesa	High	High	High	Low	Medium



transactions are still high. It can be argued that new business models targeting this market segment that could overlap between mobile money and informal systems characteristics are likely to be very successful. In other words, increase the reliability of informal systems by using mobile money or creating a structure around mobile money to introduce the discipline necessary to achieve desired financial targets. Mobile lay-away programs, pay-as-you-go, lease-to-own and similar models utilizing mobile money can meet these requirements and better address the poor users' needs. By establishing partnerships, new business models are able to introduce the much needed structure, but might not change the transaction costs. Balancing structure and flexibility is certainly complex, but new business models discussed later such as M-Kopa and Kickstart International demonstrate that it is achievable.

Individual organizations might not be able to independently develop and effectively provide these products to the masses, making it necessary to collaborate. Developing effective collaborations between partners who have different interests in order to create new products and business models can be challenging. These adoption drivers would form a basis for negotiations that could result in win-win arrangements where partners are willing compromise while synergizing. Further the drivers would provide indicators of the potential barriers to effective collaborations in the context of developing appropriate financial services for the poor.

### **Emerging partnerships in extending financial inclusion at BoP**

From the studies, several partnerships have evolved that enable more sophisticated financial services to reach the poor.

The partnerships have evolved out of the realization that the poor, who now have access to mobile phones and are utilizing mobile money, do lack access to certain basic resources. The willingness to purchase has always existed and now access to a convenient payment method is available. Typical resources include water, energy, education and such like. The partnerships that have tapped into this area are between start-ups and mobile money providers.

It has gradually become clear that mobile money is more of a channel as opposed to an end to itself. Though consumers are paying transaction fees to transfer money from one person to another, ultimately they intend to use that money for something else. Mbiti & Weil (2011) introduced the concept of the length of the "e-money loop", which they defined as "as the number of transfer transactions that the average unit of M-Pesa goes through between being transferred onto a customer phone and being transferred back from a customer phone to the phone of an M-Pesa agent." In their study of M-Pesa, Stuart & Cohen (2011) established that the e-money loop for M-Pesa was very short. In addition they argued that if the loop could be lengthened, then costs both for the mobile money provider (infrastructure cost) and

the consumer (withdrawal fee) could be reduced. Upon cashing out the money, the users are paying someone or buying something. These additional movements could be done in electronic form if the users saw the value in it and the supplier(s) provided the environment.

Some of these partnerships have resulted in entirely new business models and new markets. A good example is M-Kopa, a company that sells solar panels to the poor riding on the rails of mobile money. In some other cases, existing organizations have introduced new products or extended their existing offerings so as to serve their customers more effectively. Kickstart International is one such company that formed a partnership with M-Pesa to provide mobile money based lay away program for customers in rural areas who were struggling to save lump sums to purchase water pumps. These and other examples are discussed in greater detail below.

Existing company/ New product	New company/ New product
e.g. Kickstart International mobile layaway program	e.g. M-Kopa lease-to-own solar systems

Another kind of partnership observed is between mobile money providers and financial institutions. These partnerships have been aimed at extending the conventional services that financial institutions offer in a more convenient way. Banks now provide mobile banking services as an additive channel to

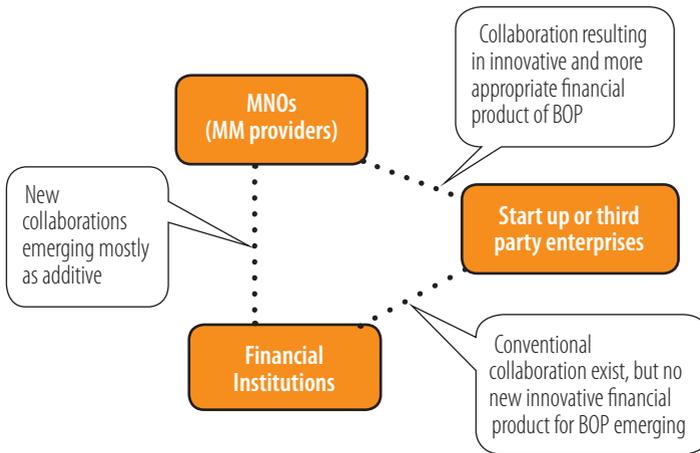
core bank accounts. This approach is not significantly transformative to the BoP and the uptake by this market segment will depend on several other factors, some of which are discussed below. Agency banking, though not part of the scope of this paper, has begun addressing some of the challenges of commercial banks reaching out to the BoP.

Micro-finance institutions (MFIs), who primarily have been known to target the lower segments of society, have also established partnerships with mobile money providers. Almost all the deposit taking MFIs have begun offering mobile money based loan repayments and disbursements. In this paper we discuss in more detail the impact of the services offered by one MFI offering 100% mobile based services.

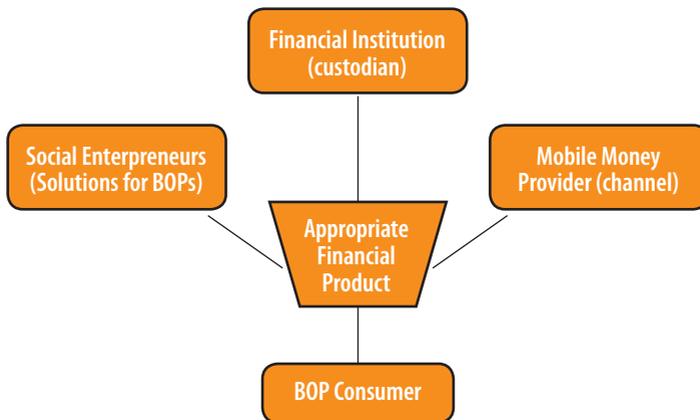
In a nutshell, the collaborations observed are summarized as collaborations between three categories namely MNOs who are the MM providers, Financial institutions who are the traditional financial service providers and third party enterprises who provide other products and services for BoP. The collaborations between the MM providers and third party enterprises have generated the most innovative and appropriate financial services for the BoP. Figure 5 and Figure 6 provide nature of relationships that are emerging to provide goods and services to the BoP while extending financial inclusion. Figure 6 illustrates a greater synergy between players that would result in more appropriate products and greater value for the poor consumers.



**Figure 5: First nature of relationship and collaborations resulting in financial services for BoP**



**Figure 6: Newer partnerships generating new business models that enhance financial inclusion**



**Illustrative cases innovatively serving BoP through mobile money**

Since the advent of mobile money, there has been consistent focus on developing innovative solutions that ride on the rails of mobile money to provide more sophisticated financial services such as savings, credit and insurance, among others. A number of these deployments primarily ride on the realization that mobile money provides the most convenient and reliable way of facilitating payments for certain services. In addition, entrepreneurs and the private sector have gradually realised that mobile payments are really a platform for other services and consumers are in need of these services. Table 2 provides a listing of some of the innovative products resulting

from collaboration between players in mobile money, followed by a brief description of some of the successful deployments.

One of the observations around these innovations is that the MNOs are leading in creating successful collaborations with start-ups to launch products and services that tend to scale faster than traditional products and have substantial impact at the BoP. The challenges of accessing quality education, energy, water and agriculture are some of what the poor individuals struggle most with. Since they desire to access these services, as opposed to saving or simply transferring funds, such collaborations are clearly filling the desired gaps.

**Table 6: Sample of the some of the solutions developed to ride on mobile money platform**

Product	Sector	Brief Description
M-Shwari	Financial	A banking product for M-Pesa customers allowing them to save and borrow money through mobile phone while earning interest on money saved.
KickStart Mobile Layaway	Agriculture	Branded “Tone kwa Tone Pata Pump”, customers save through mobile money to acquire a water pump for irrigation
M-Kopa	Energy	Solar home systems for rural or off-grid Kenyans. Customers can conveniently purchase a solar system on a pay-as-you-go basis using M-Pesa.
M-Kesho	Financial	Enabling M-Pesa customers to access core banking system. Customers get access to micro-credit, insurance and interest.
Angaza Design	Energy	Pay-As-You-Go to enable customers to buy and consume energy through their mobile phones on a need basis



Indigo pay-as-you-go solar	Energy	Allows customers to access energy, paying using scratch cards.
Bridge International Academies	Education	A pure cash less group of schools targeting the very poor
Grundfos LifeLink	Water	Customers use smart cards into which they load mobile money through M-Pesa to pay for water.
M-Bima	Insurance	Providing insurance services targeting BoP, all through mobile.
Mbao Pension Plan	Pension	Informal pension scheme powered by mobile money services, targeting the BoP.
Musoni	MFI	Provision of MFI services purely through mobile. The first pure cash less MFI targeting the BoP.

### **Kickstart's mobile layaway**

KickStart identifies profitable business opportunities for very poor, then designs, manufactures and mass markets simple tools that unlock these opportunities. One of the best selling products is a metal, pedal-powered irrigation water pump. KickStart leveraged on M-PESA and developed a mobile layaway program that enables farmers to save in small amounts (from as low as US\$1.25) towards purchasing a pump. The automated layaway program has reduced the payment period from twelve to three months and has had a payment completion rate of over 90%.

### **M-Kopa**

M-KOPA has creatively bundled an affordable solar home system with M-PESA. The system is aimed at individuals excluded from the formal electricity supply. After an initial deposit, clients make regular

M-PESA payments for a period of at most one year towards the purchase of the system. Unlike KickStart, clients begin to use the system once they make the deposit. The system has a SIM card embedded to it, enabling M-Kopa to remotely monitor its physical location and control its functioning depending on whether customers make payments or not.

### **Bridge International**

Bridge International Academies is a chain of nursery and primary schools that have automated and centralized payment of school fees through mobile money. On average the children pay about US\$5 per month. The pure cashless group of schools targets the very poor. Parents pay school fees through mobile money. Services to the schools are paid by mobile money too. As of July 2013, over 45,000 children had enrolled in Kenya.

### Grundfos LifeLink

Grundfos LIFELINK supplies, installs and services the turnkey water solutions. In partnership with local stakeholders such as community groups and NGOs, Grundfos installs water dispensing machines to boreholes and enables the tapping of water to be handled entirely by the users by mobile money transfer from a smart card. The dispensers are installed with an electronic smart reader. Customers load their smart cards with electronic money through M-Pesa.

Community water systems are assigned pay bill numbers, while the customers use the unique number assigned to their smart cards. The dispenser automatically debits the electronic value from the smart card as water flows. The cost of water is determined by the community project under the guidance of Grundfos. Using remote monitoring, Grundfos offers to maintain the dispenser and meter upon payment. The technology has streamlined operations, reduced corruption and increased transparency.

### Musoni

Musoni ('M' for Mobile and 'Usoni' for future) is a young but promising micro-finance institution in Kenya. The MFI was established in 2009, with a vision is to substantially improve the quality and availability of financial services to low income, unbanked and under-banked individuals in the developing world through the establishment and support of best-practice MFIs with an emphasis on efficiency, transparency and client focus.

Musoni is considered the first MFI to offer 100% mobile based services to clients. Musoni has successfully integrated its back office with M-Pesa, enabling seamless processing of all transactions and thus able to offer a flexible and convenient alternative to the traditional time-consuming and manual microfinance processes. Though cash-less, the MFI has branches which enable customers to visit and engage with staff.

Respondents in a study were asked what made them prefer Musoni over any other MFI. The responses shown in Table 7 suggest that the BoP consumers identified some of the benefits of electronic money, as much as the primary service offered involved access to credit [24].

**Table 7: What makes you prefer Musoni over any other MFI?**

Response option	Percentage of respondents agreeing
I get my money faster	85%
Helps avoid handling too much cash	37%
Services are more Convenient	73%
Receiving loan in M-Pesa is safer	59%
Other	

Source: Omwansa & Waema 2012



### Barriers to effective and appropriate financial products

The analysis by Johnson et al. (2012) and the findings regarding the drivers of adoption of mobile money by the poor provide a good basis for appreciating the barriers to appropriate financial tools for BoP. In the analysis shown in Figure 5, M-Pesa comes very close to being an appropriate financial product but lacks in structure and is not low in cost. The informal groups score very well on four of the parameters, but turn out to be unreliable. The study on adoption drivers revealed that trust is very critical in determining what mobile money services consumers get to adopt. Below is a brief discussion of each of these parameters, with possible recommendations on how to deal with them.

#### **Transaction cost: Ability to pay vs. willingness to pay**

One of the observations is the challenge of incurring transactions costs for low value transfers among users. When low income earners have no alternative

formal financial tools, they pay for what is available; an aspect that has been proved in research [2].

Data from the World Bank shows that the average income per month in remote areas of Kenya is USD 63 [33]. This amount translates to about USD 2 per day. Most of these low income earners are unlikely to be banked but have mobile phones. For purposes of receiving and sending money, they most likely use mobile money.

Assuming a BoP user was sending KShs. 500 to another user. Using the current M-Pesa tariff, it would cost KSH 27 to send and an equivalent amount to withdraw. This is equivalent to about 10% of the amount being transferred. Considering that BoP users are likely to send lower figures, Table 5 summarizes what it would cost these users to transfer the funds to other subscribers or non-subscribers. The percentage of transaction ranges between 6% and 30% for those within the M-Pesa network and goes way up to 46.5%

**Table 8: Transaction cost of sending and withdrawing less than KSH 1000 through M-Pesa**

Amount (KSHs)	Transfer to subscriber and withdraw	Percentage of total amount	Transfer to non subscriber and withdraw	Percentage of total amount
50	15	30	NA	NA
100	15	15	NA	NA
200	54	27	93	46.5
500	54	10.8	93	18.6
700	60	8.6	93	13.2
1000	60	6	93	9.3

for those receiving in other networks. If a BoP money transfer user did 5 transactions in a month, each of KShs 500 per day, it would cost KShs 270 to send to an M-Pesa subscriber or KShs 465 to a subscriber in another network. Considering an income of USD 63 (approx KShs 5355) per month, this translates to 5% and 9% respectively of their income going to transaction fees.

From a market development perspective, transaction costs need to be affordable as an ingredient to increasing financial inclusion particularly for the poor. The mobile operators have done an incredible job in getting to the last mile at BoP, something that conventional banking has not. It most certainly would be argued by mobile money providers that the cost of achieving this last mile is what determines the cost and the business must remain profitable. It remains a task of stakeholders to compute the break-even point through an analysis of the cost structures that include marketing, compliance, staff and related costs so as to guide policy makers and operators considering lower transaction fees that balance profitability and market development.

### **Trust**

The concept of trust has been studied in many contexts where money is exchanged. People's initial trust reflects their willingness to take risks in order to fulfil their needs [12]. Trust in mobile banking was investigated by other researchers such as [9] and [15]. Mobile money, just like any money transaction technology, requires trust. A mobile money service

must overcome distrust among users [29]. Trust is defined as a measure of consumers' level of assurance that the service will be provided with minimum possible hindrance [29]. Trust is a psychological expectation that a trusted party will not behave opportunistically [28].

Trust can relate to the vendor or the product. In the case of mobile money services, users could choose services from different providers possibly in light of their perceived trust of the product/technology as well as the provider. In some cases, trust in the product might be encapsulated in the trust in the provider. Agents (bank or MNO) are usually the face of the financial products. In the emerging business models, the social entrepreneurs have also become the face of the products. These points of contact with BoP consumers are very strategic for building trust.

Some MNOs and financial institutions have invested heavily in building trust which partners in new business models can capitalize on. M-Kopa (discussed earlier) co-brands its solar panels with Safaricom's M-Pesa helping the start-up to ride on the trust BoP consumers have in Safaricom. The poor are likely to exhibit a higher sensitivity than their wealthier counterparts and players in these partnerships must be prepared to build these trust relationships for the long haul.

Building trust for this market segment requires building relationships. Regular interactions at their workstations and homes create the necessary comfort



that can be translated into comfort in financial transactions. Besides relationships, these consumers have to be educated about the value of the products. When clients can make sense out of the economics of a water pump or solar panel coupled by the convenience and affordability of using mobile money as a payment means the take-up of the product really occurs. For instance, the advantage of solar over paraffin may be obvious to a reader of a blog, but not to a BoP customer.

### **Structure**

Given the nature of income at BoP, the need for structure in payments and repayments cannot be overstated. The low and irregular income requires that consumers be encouraged to make payments of practical low value as well as at convenient frequencies. In most cases, the typical BoP consumers would prefer to make payments once they receive money. Easy access to agents for cash-in-cash-out is vital as they enable them to convert the little they receive into electronic form. Lack of tools to enable them save or accumulate meaningful lump sums is also a clear indication that an appropriate structure is missing. Mobile money by itself does not provide the structure necessitating partnerships with other providers who would build these structures. Research shows that BoP consumers need updates, reminders, visitations and regular interactions to keep them focused. Establishing these features would certainly be very challenging especially for these kind of consumers. The business model must be well tuned and refined to guarantee success and sustainability.

Achieving flexibility and structure in the same product can be challenging, especially if the costs must be kept low. This requires creativity and innovativeness, necessitating collaboration and integration of new and relevant business models.

### ***Other partnership related challenges***

Just like any business partnership, there are generic challenges that the partners must iron out early enough to avoid stagnating. Some of the challenges have got to do with the business model while others would have to do with the nature of the partnership. Some of the challenges observed during the studies include capacity to scale and gaps in expectations.

A number of the partnerships that have been developed have struggled to scale even when the concepts have been proven. Where the start-ups or third party companies are the face of the projects, the financial requirement to scale to a national level is mostly beyond their capacity. In cases where large financial institutions or MNOs lead the projects, rapid scaling has been realised because of the financial muscles of these institutions.

Just like in other kinds of partnerships, conflicts tend to arise, affecting delivery when partnerships are not structured to clearly outline each other's hopes and expectations. In cases where one entity is the face of the project, yet the other entity's brand is exposed, differences may arise. At the end of the day partnerships are about delivering on intended products that are meant to benefit the partners and

those in the community as such expectations need to be managed carefully.

## Conclusions and recommendations

**F**rom the set of studies mentioned in this paper, coupled by findings from review of literature, we demonstrate that for products to work at the BoP, they must be characterised by particular characteristics including convenience, simplicity, high availability, trust, strong relationship build over time, continuous training and awareness creation on the value of the product, and affordable cost of transactions.

The design features and adoption drivers must be integrated in order to make financial products relevant and appropriate. Bundling of mobile money with other products relevant to the consumers at BoP is not only likely to increase savings and change behaviour of these consumers towards less dependence on cash, it would generate relevant financial tools that the poor desperately need. For these consumers to appreciate the value of electronic money, it needs to be practically demonstrated to them using simple and relevant solutions. There are emerging business models that would enable provision of the relevant services to BoP at lower costs. Mobile money facilitates the last mile delivery as well as streamlines revenue collection.

For the poor, there is need to focus on financial capability beyond access. Access is certainly part of the solution, which enables them to work their way up the financial lives, but access only is a partial solution. Mobile money needs to be viewed as a platform, which enables other services to ride on it. People really do not purchase platforms; they use these platforms to access products and services relevant for their lives.

Establishing and successfully providing these services to the poor, who in most cases are spread out in remote areas of the country

would best be achieved through collaboration of partners. It is not likely that one particular provider may provide these solutions effectively, but synergistic efforts would realize these benefits faster and more efficiently.

There are likely barriers that need to be overcome, mainly through coordinated research and development (R&D) efforts targeting the poor. These

efforts need to be multidisciplinary in nature and all inclusive. Given the specific focus of players in these sectors, it is unlikely that initiatives by individual organizations to experiment, research and pilot would be comprehensive. By collaborating in finding new frontiers of serving the consumers, stakeholders would set the pace for new business models and hence levels of collaboration and synergistic efforts that would grow the markets and benefit the consumers.

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