Better Than Cash: Kenya Mobile Money Market Assessment

November 2011
This report was produced for review by the United States Agency for International Development. It was prepared by Accenture Development Partners under the Global Broadband Innovations Initiative. The author of the report is Loretta Michaels.

Table of Contents

ACRONYMS

ABEO	Agriculture, Business & Environment Office
API	Application Programming Interface
B2P	Business-to-Person
CBK	Central Bank of Kenya
CALP	Cash Learning Partnership
DG	Democracy and Governance
EFT	Electronic Funds Transfer
ERP	Enterprise Resource System
FI	Financial Institution
GSM	Global System for Mobile Communications
ICT	Information and Communications Technology
m-banking	Mobile Banking
MFI	Microfinance Institution
MIS	Management Information System
MOF	Ministry of Finance
MNO	Mobile Network Operator
NGO	Non-governmental Organization
OFDA	Office of Foreign Disaster Assistance
OPH	Office of Public Health
P2B	Person-to-business
P2P	Person-to-Person
POS	Point of Sale Terminal
RTI	Research Triangle Institute
SACCO	Savings and Credit Cooperative Society
SIM	Subscriber Identity Module
SME	Small and Medium-scale Enterprise
SMS	Short Message Service
STK	SIM Toolkit
USSD	Unstructured Supplementary Service Data
USAID	United States Agency for International Development
WAP	Wireless Application Protocol

EXECUTIVE SUMMARY

In the last dozen years mobile technology has flourished throughout the developing world faster than any other technology in history. With that growth comes an equally impressive surge of messaging services, providing not just a broadly used means of personal communications, but also a number of valuable information services, from agricultural data reports to healthcare reminders. The latest phenomenon spawned by mobile technology is mobile money. This trend is providing money transfer services to millions of previously under-served people in the developing world, allowing them to safely send money and pay bills for the first time without having to rely exclusively on cash.

The global leader in mobile money is Kenya, where mobile network operator Safaricom launched M-Pesa in 2007. Less than five years after launch, there are approximately 16 million users of mobile money in Kenya, conducting over 2 million transactions every day. M-Pesa is not only being used for standard money transfers and airtime purchase, but also to pay salaries, utility and other bills, and to buy goods and services at both online and physical merchants. Three other mobile operators have also begun to offer mobile money services in Kenya – Airtel, Orange, and Essar (Yu) – and other players have recently emerged to offer complementary services. In addition, many aid donors and their implementing partners have already begun to integrate mobile money into their programs and are at the forefront of this learning opportunity.

Given this unique learning laboratory for the use of mobile money, both generally and within aid programs, Kenya was chosen for a field visit by United States Agency for International Development (USAID) staff to better understand the use of mobile money today within USAID's programs. The purpose of the trip was to interview partners to identify the various ways they were using mobile money and determine the key benefits and challenges they faced, with a view to forming an initial opinion of how USAID/Kenya might best support both the sector and its implementing partners in their efforts.

Based on our research and interviews, we observed the following about the state of the mobile money sector in Kenya:

- The focus of mobile money is primarily on driving its innovative uses within programs and businesses, rather than pure growth in usage. The sector already enjoys a great deal of support from government and other parties, and is currently experiencing phenomenal growth on its own.
- Many of USAID/Kenya's implementing partners are already using mobile money within their operations and for program delivery, to varying degrees.
- Partners report that accessing corporate accounts is difficult and time-consuming, especially with Safaricom. This prevents the use of mobile

payments in operations and programs.

- USAID/Kenya can support this sector by encouraging collaboration and providing general information and education to partners that are trying to implement mobile money. The level of knowledge of the programmatic support options available when implementing mobile money solutions (and the costs of those options) varies widely among USAID partners.
- An area of concern to implementing partners is the degree to which USAID and other donors will accept electronic mobile money transaction records in place of current practices around physical signatures and paper receipts. Developing a consistent policy around these mobile money transactions would be of great use to partners.

SECTION I. INTRODUCTION AND PURPOSE

Two industries that have seen phenomenal growth and impact in developing countries in recent years are mobile communications and microfinance. Both are acknowledged today as major catalysts for economic growth and social development, bringing opportunities that did not exist before to urban and rural populations[1]. In the case of mobile telephony, operators are experiencing adoption rates that far exceed expectations, given the levels of literacy and technological sophistication in emerging markets. While the two industries have grown independently of each other and for different reasons, they share an important characteristic: they broaden the reach and coverage of their respective sectors - communications and financial access - into populations that could not previously access or afford such services.

It is therefore no surprise that efforts have been made to link mobile communications and microfinance through the development of mobile money solutions. The rapid growth of mobile payments technologies in the last few years, particularly in Kenya, South Africa, and the Philippines, has proven that there is latent demand for such services and that there is a willingness to adopt and pay for the technology among low-income users. At the same time, governments, banks and microfinance institutions (MFIs) have realized that extending financial services to the base of the pyramid via mobile technology can significantly lower the cost of delivery, including overhead costs for buildings and staffing branches, as well the costs to customers of accessing services (e.g., travel or queuing time, travel costs, security issues).

There are significant benefits to be gained by the use of mobile technology by financial services providers, especially in rural areas, in the form of cost savings, efficiency, fraud and error reduction, client security and convenience. However, many attempts around the world to do so are progressing very slowly, in some cases for reasons related to implementation or regulatory constraints or because providers initially focused on unsophisticated MFIs as partners[2]. Despite these challenges, there is a great deal of excitement about the possibilities of mobile money technology to extend financial services into underserved areas, and the successful performance of some of the current offerings provides a great deal of encouragement to efforts to prove the concept worldwide. Equally exciting is the fact that the ability to conduct financial transactions remotely is also proving beneficial to the operations of a number of non-finance related organizations, especially in the world of aid and development.

The market leader in the use of mobile money is Kenya. When mobile network

[1] L. Michaels, A. Hammond, "GSMA Development Fund Top 20: Research on the Social and Economic Impact of Mobile Communications in Developing Countries," August 2008

[2] See Appendix I for a brief discussion around the challenges faced by MFIs in early mobile money implementation efforts.

operator (MNO) Safaricom launched M-Pesa in 2007, it reached its first year subscriber targets in just two months, and growth has continued apace ever since. The reasons for M-Pesa's success have been studied extensively, and observers generally agree on several contributing factors: a large underserved population with few alternatives for financial services; a demographic profile that saw significant numbers of adults migrate to cities like Nairobi in search of work, while retaining strong familial and financial links to their home villages; a trusted mobile network operator with significant market share and a broad agent network, relatively high mobile phone penetration at the time; and a regulator willing to take a "watch and learn" approach to the new service.

Four and a half years after M-Pesa's launch, there are approximately 16 million users of mobile money in Kenya, conducting over 2 million transactions every day. M-Pesa processes transactions worth US$4.98 billion annually, translating to 17% of Kenya's Gross Domestic Product (GDP)[3]. Compared to 1,072 bank branches, there are over 46,000 mobile money agents in the country[4]. Mobile money is not only being used for standard money transfers and airtime purchase, but is being used to pay salaries, utilities and other bills, and buy goods and services at both online and physical merchants. Three other mobile operators have begun to offer mobile money services in Kenya – Airtel, Orange, and Essar Yu – and other players have also recently emerged to offer complementary services. In addition, many aid donors and their implementing partners have already begun to integrate mobile money into their programs and are at the forefront of this learning opportunity. Given this unique learning laboratory for the use of mobile money, both generally and within aid programs, Kenya was chosen for a field visit by USAID staff to better understand the use of mobile money today and help inform its potential for use in USAID's programs globally.

[3] Zimbabwe Independent, "Econet's EcoCash versus Kenya's M-Pesa," October 20, 2011.
[4] Central Bank of Kenya 2010-2011 Annual Report

SECTION II. CURRENT STATE OF KENYAN MOBILE MONEY MARKET

Observation A. There are Four Mobile Money Providers in Kenya, but One Dominates

Currently the mobile money market in Kenya is dominated by one major player, Safaricom's M-Pesa. Not only did Safaricom launch the first service, in 2007, but it still dominates the field, with an estimated 99% market share of all mobile money transactions in Kenya. (Table 1 below provides an overview of each of the mobile money services available in Kenya and the Appendices provide more detailed descriptions of each player.) Each of the mobile money players offer similar types of services, although the three newer service providers have tried to distinguish themselves in various ways, largely through their platform capabilities and service structures for corporate mobile money services. Many organizations want to offer their clients and customers the mobile money service provider of their choice when linking such services to their product offerings, but these services are not yet available. Therefore, for the time being, anyone looking to utilize a mobile money service in Kenya has little choice but to work with Safaricom, which has the largest network of subscriptions and agents.

Table 1: Mobile Money Providers in Kenya

Company	Mobile subscribers	Mobile market share	Date of mobile money launch	Mobile money subscribers	Mobile money agents
Safaricom M-Pesa	17.5 Million	69.89%	March 2007	15.5 Million	28,000
Airtel Money	3.8 Million	15.20%	November 2010 (as Zain Zap) relaunched in August 2011	2.8 Million	8,600
Orange Money	2.1 Million	6.37%	November 2010	120,000	3,500
Essar yuCash	1.6 Million	8.50%	December 2009	650,000	5,400

Observation B. Mobile Money is Here to Stay

The success of mobile money in Kenya has been nothing short of phenomenal. In just over four years, a country with only 1,072 bank branches has seen the number of agent outlets providing mobile money service grow to 46,000. People have access to financial services as never before, such that the proportion of the population which is completely excluded from financial services is lower in Kenya than any other African country except for South Africa[5]. The key drivers of this financial inclusion in Kenya, most notably Safaricom's M-Pesa and Equity Bank, center on a very supportive regulatory regime, innovative business models and technological advances, particularly in the mobile phone sector.

The issue at this point is no longer whether mobile money will survive in Kenya, but how to link this service into the greater financial ecosystem, as it's clearly here to stay.

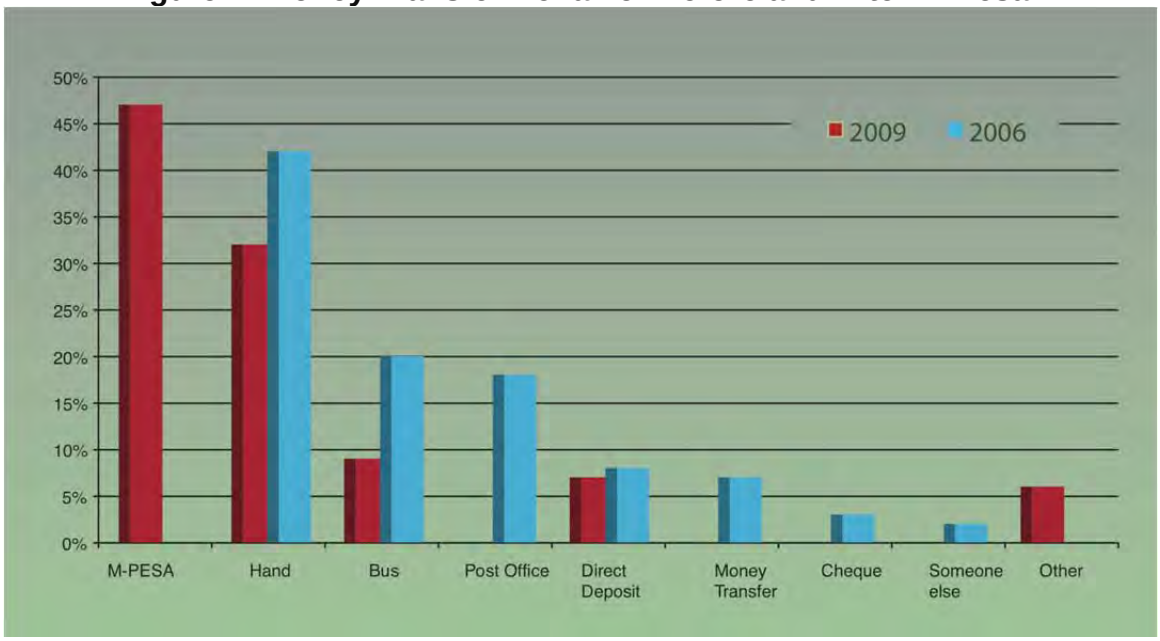
In a population of 40 million people, it is difficult to get a clear sense of how many Kenyan citizens are considered formally "banked." A recent FinAccess report showed the number of formally banked people (defined as those using a bank, Postbank or insurance product) at 22.6% in 2009[6]. One recent statement has the number of bank accounts at 5.5 million[7], giving a banked ratio of 14%, while yet another public statement, that there are 14 million deposit accounts, would put the "banked" ratio of about 35%[8]. However one wishes to calculate it, it is clear that a good percentage of the population, at least two thirds, remains excluded from formal financial services. In fact, it is estimated that 95% of all financial transactions in Kenya are still cash-based. Of those that aren't cash-based, it is estimated that 70% of these are handled by Safaricom's M-Pesa mobile money service. Total registered mobile money accounts in Kenya number 18.6 million, although some of those are probably owned by users with multiple accounts, so it is safe to say that there are at least 16 million mobile money account holders in Kenya, or about 40% of the population, almost 60% of the adult population. It is also estimated that about 85% of Kenyans have used mobile money. In terms of mobile money market share, Safaricom's M-Pesa has about 99% of the mobile money market, and therefore essentially defines (for now) what the market looks like.

M-Pesa has made a huge difference in the lives of the poor who have traditionally been excluded from the formal banking system. Bank products and fees have not typically catered to very low-income earners, nor have the poor felt the need or ability to use EFT. Culturally the poor have not felt welcome in banks.

[5] FSD Kenya
[6] FSD Kenya: FinAccess National Survey 2009
[7] Safaricom statement, October 2011
[8] CBK Governor's Remarks at 3rd ICPAK Financial Services Conference, April 2011

As a result, most low-income Kenyans have operated on a cash-only basis, with little or no savings and no means of developing a credit history. A key financial transaction for many of Kenya's citizens in recent years has been for a worker in Nairobi to send money home to family members remaining in home villages. The primary options for doing this have been via bank or postal transfer or to ask someone to carry it for them, either a friend or a taxi or bus driver, at high cost and high risk. (For small amounts, the fee as a percentage of amount sent can be higher than 35% due to the high minimum fees charged for every transfer[9].) The introduction of the M-Pesa[10] service in 2007, focused on the marketing slogan of "send money home," touched a nerve and filled a big gap in the market. Kenyans consider M-Pesa a cheaper, faster and safer option for sending money, and one that is considerably more accessible than other options out there, such as bus, taxi, PostaPay or bank branches (see Figure 1, below). The fact that M-Pesa was launched by Safaricom, a highly trusted and popular brand in Kenya with about 80% of the cellular phone market at the time, only helped to support its rapid growth.

Figure 1: Money Transfer Behavior Before and After M-Pesa



Source: FSD-Kenya (2006) and FSD-Kenya (2009)

Currently, about 16 million Kenyans use mobile money to send money, pay bills, cover expenses, and buy goods. Besides money transfer and bill pay, it is estimated that 75% of M- PESA users also save at least some money in their M-PESA account, citing reasons of ease (45%) and safety (26%) as the major factors[11].

[9] Kabbucho, Sander and Mukwana, "Passing the Buck – Money Transfer Systems: The Practice and Potential for Products in Kenya," Microsave-Africa, May 2002
[10] "m" for mobile, while "pesa" means money in Swahili
[11] Jack William and Tavneet Suri, "The Economics of M-Pesa", MIT, August 2010.

Organizations are also increasingly using M-Pesa, formally and informally. Kenyan microfinance institutions (MFI) and insurance companies are increasingly using M-Pesa for cash disbursement and repayment; businesses, government and NGOs are using it for cash transfers, procurement and salary payments. Merchants are also using it for purchases, both for its convenience as well as its cheaper fee structure (M-Pesa charges 1.5% to the merchant, versus 3-4% on the part of most credit cards).

The value proposition for use of M-Pesa by organizations focuses on a number of benefits, including reduction of cash "leakage" and corruption; increased operating efficiencies, including less paperwork; better transparency and accountability via the electronic records, and more independence and self-sufficiency for users. In terms of quantitative measures, organizational users of mobile money are reporting reduced cost of cash disbursement compared to other current options, such as cost of cash handling and associated security, reduced staff costs and better utilization of staff.

In terms of innovations in mobile money, Kenya has proven to be a very fertile and supportive location. Not only is there a high literacy rate and a strong culture of entrepreneurship, but the government's stand on allowing the mobile money sector to flourish, combined with the still considerably large underserved market, has meant a large opportunity and welcoming environment within which to operate for service providers and information and communication technology (ICT) developers. In fact, according to the World Bank, ICT (including mobile money) has been the main driver of Kenya's economic growth over the last decade[12]. "Since 2000, the sector has outperformed all other segments of the economy, growing on average by 20 percent annually," according to their recent Economic Update. "Since 2000, Kenya's economy grew at an average of 3.7 percent. Without ICT, growth would have been a lackluster 2.8 percent – similar to the population growth rate – and income per capita would have stagnated. ICT has had a transformative impact on the financial sector and has contributed to important indirect economic effects in other sectors, such as health care and public information[13]."

Observation C. Mobile Money isn't Displacing (Most) Bank Accounts

As is usually the case when mobile money is introduced to a market, the Kenyan banking sector expressed its early opposition to the service, with concerns raised that Safaricom was engaging in a banking service for which it wasn't licensed. While there are valid debates to be had with regard to mobile money versus prudentially regulated banking services, especially when the former is offered by a non-bank player such as an MNO, banking opposition tends to arise most

[12] World Bank, Kenya Economic Update, December 2010, Edition No, 3, "Kenya at the Tipping Point?"
[13] Ibid

loudly only when mobile money becomes successful, in large part to protect banks' hold on the financial services sector. The issue of whether a mobile money service should even be offered by an MNO alone is one that has seen a tremendous amount of discussion and debate in the last four years. However, in Kenya as elsewhere the sector has moved beyond the basic "bank-led versus MNO-led" debate. The success of M-Pesa has reached such a level that the majority of Kenyan banks have decided to work with M-Pesa rather than compete with it in the mobile money market. The last two years have seen a series of banks offer services that link their accounts to Safaricom's M-Pesa accounts, both on a personal level as well as a corporate level. These linkages vary from account information and transferring value from one account to another, to banks offering to handle all intermediation between their clients' accounts and any Safaricom services they wish to access. Some banks are even offering to cover any risk or costs involved should funds be sent to the wrong mobile money account.

One area of discussion and concern amongst regulators and bank managers is whether the success of M-Pesa has led to it displacing bank accounts or otherwise hurting the banking sector. Some of this concern is competitive posturing by the banks, but it is a topic that policy makers pay close attention to as they monitor the sector. There has been little evidence to date, however, that mobile money accounts are replacing existing bank accounts. Mobile money services have cash transaction limits that prevent the service from being used for higher value transfers, so individuals and businesses are continuing to use their bank accounts at the same rate as always. EFT is still the primary means of most higher value money transfers[14], particularly for businesses and organizations, and any organization that wishes to use mobile money to disburse salary or expense payments still needs to have a bank account linked to that mobile money account.

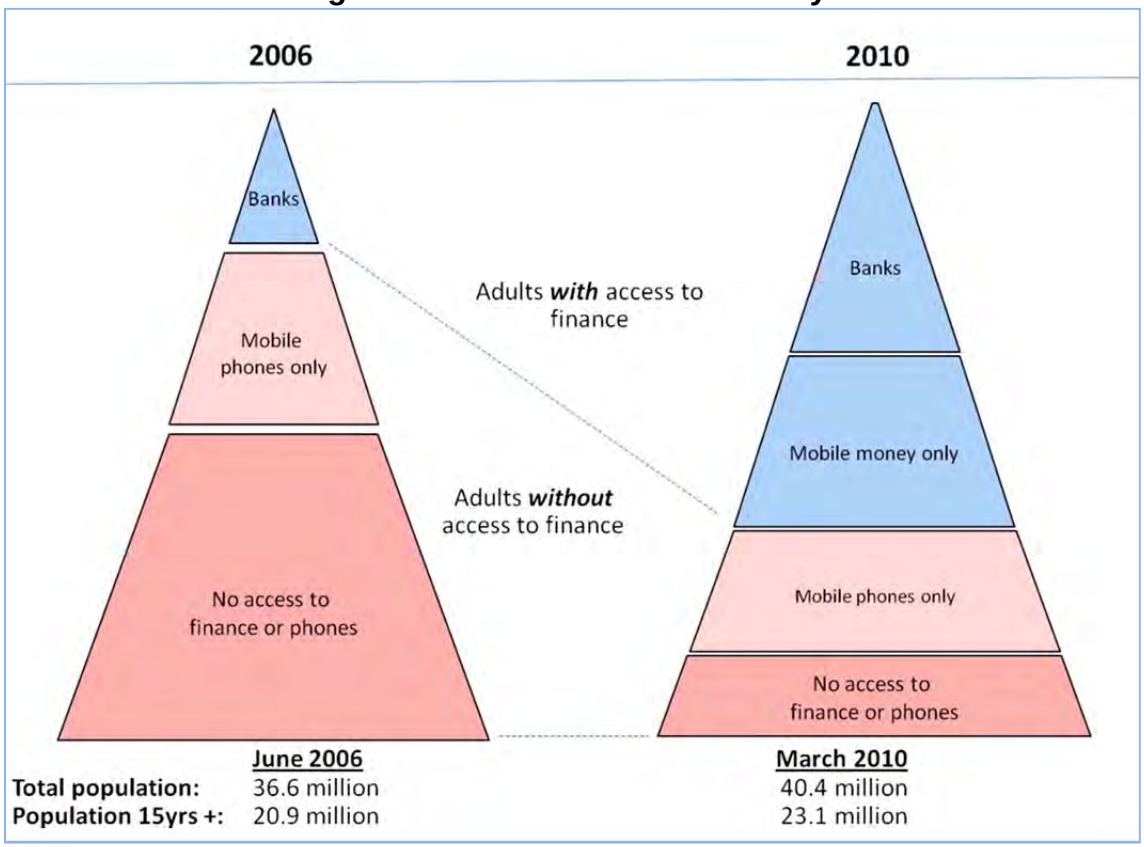
Rather than hurting the banking sector, the mobile money sector has in fact had positive effects on banks, according to many observers (see Figure 2, below). When M-Pesa took off, a large amount of liquidity that had been sitting in cash was routed and accounted for in the banking system, boosting bank liquidity[15]. Additionally, a number of organizations that use mobile money services with their constituents are opening up joint mobile money/bank accounts for them (e.g., M-Kesho, a service of Equity Bank and Safaricom). These new accounts are increasing business for the banks and opening up opportunities at the low end of the market, a sector that banks have traditionally ignored. However, the banks still have to develop and offer services that specifically cater to low-income customers if they're to succeed in this space. Simply adding a mobile channel on

[14] Very high value transfers, typically bank to bank, must be routed through the Kenya Electronic Payments & Settlement System (KEPSS), Kenya's real time gross settlement system (RTGS)

[15] M-Pesa agents must all have bank accounts from which to buy and sell e-value from the M-Pesa system, and all M-Pesa balance accounts are held in pooled trust accounts at prudentially regulated banks.

to existing services won't help grow the market for bank accounts if they aren't designed to meet the needs of the low-income customer. One area where banks do have a valid concern is where joint accounts are opened at the very low end of the market, largely for humanitarian cash transfers at the moment, and the recipients are merely using the M-Pesa wallet and not the bank account that was opened for them. How the banks address this issue is difficult to predict for a target population with so little wealth, but many observers believe the overall opportunity is the banks' to lose at this point if they don't design services suited to the poor.

Figure 2: Financial Access in Kenya



Source: World Bank estimates, 2010

As stated earlier, many if not most banks in Kenya are now linking up with mobile money systems in partnership with the MNOs, offering joint accounts, bulk payment services, merchant payments, and information services. Many of these banks are also offering to handle any intermediation required between businesses and the mobile money providers, so that business clients don't need to do so. In these cases the banks work with the organization to validate their customer or employee data with the MNO, handle the transfers between the client bank account and the MNO, manage all record keeping between the various accounts and often take on the risk of any incorrect transfers. And they are doing it all for a "small" fee. Banks have shrewdly seen that many client

organizations want support in dealing with the minutiae of bulk mobile money accounts, and that support was not forthcoming from MNOs, especially Safaricom. Given the growing prominence of mobile money use in Kenya amongst organizations, this particular business opportunity is one that banks will only continue to exploit and grow.

Observation D. Government Plans to Increase Use of Mobile Money

All of the developments in the Kenyan mobile money and banking sectors are occurring in an environment of active support and encouragement from the Government of Kenya, which has chosen to focus on the role of ICT as a means of economic growth. This championing of the sector stems in part from the government's strategy, outlined in its Vision 2030 blueprint document[16], which stated an explicit government goal of becoming a "middle-income country providing a high quality of life to all its citizens by 2030." Of the several foundational pillars that are listed in this document, three that are particularly relevant to the mobile money sector are Continuity of Governance Reforms, Enhanced Equity and Wealth Creation Opportunities for the poor, and Science, Technology & Innovation (STI). Each of these foundation topics involves the prominent use of ICT and cashless services as a key means of improving access to and delivery of government services as well as improving economic opportunity.

The government has already started implementing a number of initiatives in support of its goals, starting with open access to government data for all citizens. The Open Data initiative has set up a web portal[17] for the purpose of sharing all government data with the public. The goal is to make core government data, particularly development, demographic, statistical and expenditure data, available in a useful digital format for researchers, policymakers, ICT developers and the general public. The government is also pushing for open source software in mobile applications, in part to help push prices down significantly enough to reach the poorest users.

A major player in the government's plans is the ICT Board of Kenya, which is driving the implementation of many of the government's goals in the technology and innovation space. There are 5 major programs of the ICT Board:

- Local Digital Content, including the use of government data and locally relevant service information;
- Digital Inclusion, especially rural, where they intend to create digital villages (Pasha centers) in all 250 constituencies and provide connectivity and government services to citizens, instead of making people continue to come to Nairobi to conduct any sort of government business; for example, company registries are all online and cashless now;

[16] Government of Kenya, Kenya Vision 2030, Released 2006
[17] www.opendata.go.ke

- Government Applications, by increasing the use of ICT in government, including computerizing all processes and services;
- Business Process Outsourcing, where they hope to generate employment and income through regional call centers; and
- IT Shared Services.

The Permanent Secretary of the Kenyan Ministry of Information and Communications, Dr. Bitange Ndemo, has made clear the government's commitment to the use of ICT across the Kenyan government and economy and is working closely with the other ministries to see that it happens. While he understands that completing this task will take time and come up against some entrenched interests along the way, he is convinced that the benefits to Kenya will be enormous. One early and striking example of the importance of this strategy is that the Ministry of Lands automated its cash collection function, thereby increasing cash collection from Ks 3 billion to Ks 7 billion in the first month. He also estimated that US $1 billion would be saved in one year if government procurement got automated across all ministries.

The focus on e-government and replacing cash are key elements in the government's strategy and efforts to achieve this goal are already underway across multiple ministries. Crucially, the Ministry of Finance (MOF) has stated its intention to automate all payments and has requested each ministry to develop a strategy to replace cash in government[18],[19]. Government data is being used to compare weather patterns and cattle mortality rates to provide information to agricultural insurance providers, while school performance data is being used to provide the public, especially parents, a source of information on their local schools. Meanwhile, a web portal has been created, in conjunction with the Teacher Services Commission, to provide information and services to the many government teachers in Kenya[20], especially in rural areas; applications for leave must now be submitted through the portal. So far 16,000 teachers have logged on, and the government wants to add more to make the portal the central community spot for all teachers in Kenya (making them apply through the portal for leave helps boost participation and make them aware of other services to come).

An "End to End" government service strategy was drawn up in September 2011[21], looking at how to improve all government service delivery for its citizens, which will identify more opportunities for the use of ICT and cashless payments. All of these efforts will further strengthen the role of mobile money in Kenya and

[18] Conversation with PS Bitange Ndemo of Ministry of Information and Communication, Nairobi, October 5, 2011.
[19] Integrated Financial Management Information System (IFMIS) Strategic Plan 2011-2013, Ministry of Finance.
[20] There are 250,000 government employees in Kenya, of which about 200,000 are teachers.
[21] A World Bank funded project, being implemented by Accenture Development Partnerships.

expand its usage across all sectors of the economy.

Observation E. Regulation Will Continue to Support Mobile Money

The Central Bank of Kenya has made clear that it intends to retain its liberal approach to regulating mobile money, as it feels that this position is what has enabled Kenya to take the lead in this space. The last year and a half has seen the introduction of a number of new regulations that will codify the guidelines that the CBK has been informally enforcing, including a new set of consumer protection rules that were recently introduced to ensure more safeguards in the event of service provider insolvency. (See Appendix IV for a description of the current mobile money regulatory situation in Kenya.)

Policymakers believe that bringing more Kenyans into the semi-formal financial services sector through the use of mobile money has been highly beneficial to both citizens and the country at large, as the sector has spawned a number of related innovations and businesses. Going forward, the government's goals are to not just increase the *quantity* of e-transactions in Kenya, but to increase the *quality*, meaning that they will aim to bring mobile money users into the greater financial ecosystem through formal services such as bank accounts.

Key policy questions that leaders are considering in this sector include increasing competition in order to drive access and reduce costs, interoperability, systems stability and safeguards against systemic risk. Regarding interoperability, the government has resisted mandating it for mobile money providers, not wanting to penalize the early adopter Safaricom and believing in a free market approach. The government has made clear, however, that interoperability is something it would eventually like to see[22]. This issue is particularly important at the agent level, where Safaricom controls over 28K agents across the country and insists that they remain exclusive to Safaricom when it comes to mobile money. The number of small businesses that are qualified and able to be successful mobile money agents is understandably limited, particularly in rural areas, and being able to control those points to the exclusion of other players is of concern to many in the sector. This topic is sensitive for banks in Kenya, as the new Agent Banking guidelines that were passed in 2010 finally allowing banks the use of non-bank agents mandated that such agents not be exclusive to one bank. Thus, in a sector where key players are quickly converging, the fact is that there is one set of rules for banks and another for MNOs.

The issues of systems stability and systemic risk are ones that the government is starting to look at more closely. There isn't necessarily a specific concern on these points, but the regulator wants to ensure that it understands the systems and safeguards in place to ensure that they are adequate. The issue around systemic risk is largely focused on mobile money data records, rather than the safety of the pooled funds involved, as these funds are already held in

[22] A study of payments system interoperability is being procured, according to the MOF.

prudentially regulated institutions, within tightly restricted trust accounts. No such requirements are in place for the data records that MNOs keep which identify accountholders and their balances. Given the wide use of mobile money across the population, should these records disappear for any reason, the government would face potential calamity. Each of the MNOs has built in redundancy within their mobile money platforms to protect the data, but legally there is no requirement that the data be held in separate trust for safeguarding. Policymakers plan to look at these types of issues to decide whether they wish to strengthen the guidelines for ensuring the safety and security of the system.

SECTION III. HOW IS MOBILE MONEY BEING USED TODAY

Any discussion of mobile money usage in Kenya today must start with a description of the standard capabilities of services in use. While there are a number of groups and organizations using mobile money in a variety of ways, the actual service offerings can be broken down into four basic choices, all of which are currently or soon to be offered by the four main mobile money providers:

1. **P2P**, or person-to-person. P2P is the most common means of using mobile money globally, in Kenya and other areas of the developing world. (In North America the most common usage would be mobile-accessed online banking via smartphones, but this type of activity is not the focus of this report.) In Kenya, 85% of all mobile money transfers are P2P, and they average between Ks300-400 each, with most being below Ks10,000 (about $100). In P2P, a user transfers value from his prepaid mobile wallet to another user's mobile wallet. Typically a user would go through the following steps:

    - *Deposit* value into their mobile wallet account by visiting a mobile money agent, who will take the cash from the user and credit their account with e-value accordingly.
    - Users can now *send* the money, or e-value, to whomever they wish, as long as that recipient has a mobile phone or access to one. Sending money to a registered mobile money user is the most straightforward transaction, and will be cheaper for the sender, although they can also send to non-registered users, but will pay a higher charge for doing so. (The mobile money operators determined early on that the person sending the money is likely to have some degree of influence over whomever they're sending money to, and decided to charge the sender a higher fee, on the basis that it will be in the sender's interest to persuade the recipient to sign up for a mobile money account.)
    - Once a mobile money user decides to *withdraw* cash from their mobile money wallet, they then visit an agent who would exchange e-money value for cash with that customer.

    It is important to remember that all mobile money accounts are prepaid, and

that the amount of cash in the system must match the amount of e-value, so that a parallel currency isn't being created. Any exchange with an agent is really just an exchange of e-value for cash, or vice versa. Therefore, the agent must have sufficient float, or e-value, on their own account in order to conduct transactions. Current transaction limits for P2P transfers are Ks70K (about $700), and users can receive up to Ks140K in transfers in one day. However, the individual mobile money wallet balance limit is Ks100K at any one time. A table of the P2P charges for each of the mobile money service providers is shown, below.

Table 2: P2P Tariff Comparison
(as of October 2011)

Tariff KS 5,000	M-Pesa	Airtel Money	Orange Money	yuCash
Deposit Money	Free	Free	Free	Free
Send Money (Registered User)	30	25	30	Free
Send Money (Unregistered User)	80	25	90	n/a
Withdraw Cash (Registered User)	45	45	45	40
Withdraw Cash (Unregistered User)	Free	45	Free	60

2. **B2P**, or business-to-person, also called **Bulk Payment Service** in Kenya. This service allows an organization, whether it is a business, government ministry or NGO, to pay multiple recipients at one time by paying into their mobile money wallets. Because the vast majority of rural and/or seasonal workers across Kenya lack bank accounts, organizations have needed to find ways of delivering cash to pay salaries and expenses. Cash payments, especially large volumes of them, naturally carry with them a great deal of risk, not to mention expense and vulnerability to theft and corruption. Typically the organization would either enlist the services of an armored car and security team, costing a great deal of money, or they would have a staff member drive out with the cash in hand, with all the risks that entails (e.g., loss, theft by staffer, robbery). By using the Bulk Payments Service, they can avoid the risk and expense associated with cash by sending money directly to users' mobile wallets. This also reduces the risk to recipients, who are no longer vulnerable to theft by virtue of the fact that everyone in town has seen the cash get delivered. The mobile wallet allows a degree of privacy and safety for users in this regard, and offers them the convenience of deciding when and where they wish to withdraw their cash. In terms of transaction limits, Bulk Payment recipients can receive up to a maximum of Ks100K. Key examples of this service are when partner programs like RTI International use it to pay seasonal malaria sprayers in their operating areas or other groups

use it to pay flower growers.

3. **P2B**, or person-to-business, also called **Bill Pay Service**. This service allows a user to pay a company using their mobile money account. A common complaint in Kenya and other developing countries has been the need to travel to the bill pay location, often the capital city, and stand in line for long periods of time to pay bills, resulting in extra expense for travel and productive time lost away from work. It is such an inconvenience that many people pay others to stand in line for them. The ability to pay bills using a mobile money account has proven very popular with both users and businesses, with over 700 organizations signing up to allow their bills to be paid via M-Pesa alone[23]. Many of these organizations are also offering the Bill Pay option via the other MNO mobile money services, to ensure non-Safaricom customers can use the service as well. The types of organizations using the Bill Pay Service include educational institutions, government agencies, hospitals, utility companies, and many others. One particular use of this service is by microfinance institutions (MFIs), which use the Bulk Payment and Bill Pay capabilities of mobile money in order to disburse and obtain repayment for their loans[24].

4. A slight variant of the Bill Pay service is the **Buy Goods** function. The service is essentially identical to the Bill Pay Service, except that it can be used to buy goods from either online or physical merchants as needed, allowing individual (versus recurring) purchase payments, as opposed to signing up for individual accounts and paying off on those specific accounts, which is often the case with Bill Pay service. The Buy Goods Service is really a formalization of what had already been occurring in the market, where many vendors were allowing customers to pay for things using a P2P transfer. In the case of Buy Goods, larger vendors can link the payments to their POS systems so that they have a formal record of the sale, and in many cases can print a receipt of the sale for the customer. (This linkage is currently achieved by way of a SIM card and separate module for plugging into the vendor's POS system.) So far, the takeup of the Buy Goods service has been somewhat low, in part due to criticism of Safaricom's ability to service merchants and the specific functionality of the service, particularly its inability to quickly generate reports on any field of choice, e.g., by customer, product, store, etc. This is an area where some of the new players discussed below are looking to target.

[23] A complete list of M-Pesa's Pay Bill business clients can be found at http://www.safaricom.co.ke/fileadmin/M-Pesa/Documents/Utility_Organizations_11thMay2011.pdf.

[24] In fact, the development of mobile money in Kenya started with a grant from DFID to Safaricom, back in 2003, to try and come up with a more convenient means of MFI clients, Faulu in this case, receiving and repaying their loans.

Table 3: Mobile Money Services in Market Today

	Safaricom M-Pesa	Airtel Money	Orange Money	Essar yuCash
P2P	√	√	√	√
Bulk Payments	√	√	In pilot	√
Bill Pay	√	√		√
Buy Goods	√			√
Joint Offer w/ Bank Account*	√		√ (Equity)	√ (Equity)
International Money Transfer	√			
Visa/Mastercard	√	√ ("virtual")		

** Bank account and mobile wallet are part of one service, as opposed to providing linkages between a bank account and a separate mobile money account.*

While the mobile money market in Kenya has been dominated by P2P transfers since M-Pesa was launched in 2007, and P2P continues to make up the vast majority of transfers (about 85%), the corporate services described above are gaining traction with users and organizations[25]. In particular, the Bill Pay service, which allows customers to pay bills using their mobile money account, has proven extremely popular. M-Pesa alone provides Bill Pay accounts to over 700 organizations, from utility companies, healthcare facilities and educational institutions to financial institutions including microfinance organizations and SACCOs. A number of organizations are making innovative use of the Bill Pay feature, like SUWASA's prepaid water meter pilot, which allows users to draw water from public boreholes using a prepaid token which is loaded with value via M-Pesa Bill Pay and paid to NAWASCO water service. A similar service is offered with the Grundfos LIFELINK water pumps.

The Bulk Payment service has also grown substantially since being developed in 2010 (in collaboration with Concern Worldwide, which was seeking a better way to make cash transfers in urban slums), and is now in use by over 300 organizations. These organizations, which range from East African Breweries to government teachers groups to a number of humanitarian organizations, use the service to pay salaries and expenses for remote and seasonal workers, without the need to deliver cash and incur all the risks that entails. More innovative uses of the Bulk Payment service also include things like payments within the agricultural value chain, for example when dairy coops use mobile money to ensure farmers are paid faster for their milk (a service that is occurring within USAID/Kenya projects). The typical payment cycle took about 4-5 weeks for them to get paid, during which time they had no money to buy supplies or pay

[25] For a list of documentation required for opening a key corporate account with Safaricom, please see http://www.safaricom.co.ke/fileadmin/M-Pesa/Documents/REQUIRED_DOCUMENTS_FOR_KEY_ACCOUNTS.pdf

bills. Now the coops have instituted a mobile money system to shorten the cycle for payment, and also make individual farmers' mobile money balance information available at the coop store, so that farmers can buy supplies with their e-money accounts and get change in cash.

The Bulk Payment service is also being increasingly used by emergency relief groups, including Oxfam, WFP, ActionAid, FAO and USAID's Food for Peace program and Horn Relief implementing partner, to make cash transfers into disaster areas, such as this year's drought-stricken regions. It is not a complete solution for these groups, given the spotty mobile network coverage in their areas of operation, but where they can they are employing it.

While the Bulk Payments service is still dwarfed, in volume and in value, by the P2P service, it is growing in importance in the sector, both to users and to Safaricom's competitors who see an opportunity to exploit a service that Safaricom developed and for which Safaricom is regularly criticized for not servicing well. For example, Safaricom often takes several weeks to a few months to even open a Bulk Payment account, and refuses to negotiate tariff fees for large volume bulk payments, whereas the other MNOs have all indicated that they were open to tariff negotiation. Safaricom, for its part, sees the opportunity and the competitive threat and would like to increase its B2P and P2B business by 10% year over year, with a goal of reaching a split of 60% P2P business and 40% corporate accounts.

Financial Institutions Jumping on the Mobile Money Bandwagon

As the usage of Bulk Payments has grown, a number of financial institutions (FIs) have also decided to get formally involved, either in using the services for their own requirements or in providing it on behalf of their corporate clients. These banks' services range from merely linking to the M-Pesa system for information and money transfer between accounts to handling the entire interface between organizations and Safaricom, including mobile money account validation, bulk transfer instructions and reporting, and assumption of liability for any incorrect transfers. At last count, there are 10 banks in Kenya with linkages to the M-Pesa system, with two more coming on board soon[26].

Current bank linkages with M-Pesa, however, are less about "innovation" and more about "adaptation" by financial institutions for linking to the M-Pesa platform[27]. Only two institutions have designed new products specifically and exclusively available on the M-Pesa platform (M-Kesho, I&M's Prepay Safari Card), and two more institutions have built their business model completely

[26] Conversation with Safaricom staff, October 2011; banks include KCB, CBA, NIC, Family, Citibank, I&M, Equity, and Stanbic; those coming on stream soon are Barclays and Standard Chartered.
[27] Microsave Briefing Note #93, Innovation and Adaptation on the M-Pesa Rails, May 2011

around M-Pesa (Musoni, Changamka). The majority of financial institutions have only linked their systems at the back-end with Safaricom and are offering their existing products through M-Pesa as an alternative delivery/service channel. However, even with Equity's M-Kesho offering, the interface is limited and evidence may show that it doesn't allow users to enjoy a full mobile banking experience via M-Pesa.

Additionally, financial institutions have linked to M-Pesa's "Bill Pay" platform to facilitate deposit by their customers into accounts with the respective institution. These Bill Pay links, however, are not seamless; withdrawal by a customer from his/her bank account through M-Pesa requires the work of two technologies. First is the bank's own m-banking platform and second is Safaricom's Bulk Payment service. There is usually a fee charged for both elements of the transaction.

In terms of early financial product innovations, there are two key ones to note: M-Kesho and the M-Pesa Prepay Safari Card. M-KESHO, launched as a joint product by Equity Bank and Safaricom, is probably the best known innovation in the list of savings products available using M-Pesa. This product, aimed at all income levels, is available through the M-Pesa platform and customers can register at select Safaricom outlets or at Equity Bank branches. Benefits to customers include:

- The ease with which money can be moved between an M-Pesa account and M- KESHO (a bank account) in Equity Bank via a mobile handset.
- The money is protected through the bank's participation in the national deposit protection fund.
- Mini account statement and balance are sent to customers via SMS and can be viewed on screen.
- It comes with (almost pre-approved) micro credit and insurance bundling (subject to conditions).

Since M-Kesho was introduced, a handful of similar products have entered the market, increasing the competition for mobile bank accounts. Family Bank has introduced PesaPap, and Kenya Commercial Bank has introduced KCB Connect, both in conjunction with Safaricom (but are planning to extend the services to all other mobile money providers). Equity itself has partnered with Orange Money to create a true mobile banking platform, with full integration of mobile banking and mobile money services. Unlike M-Kesho, where you link your M-Pesa account to your Equity account and have to move money between the two accounts, Orange Money is a single account; If you sign up for Orange Money you are opening an Equity Bank account with full access to Equity's range of services. This looks very much like a "bank-led" mobile money model where the bank offers the deposit account and the mobile network operator provides access to their network for the movement of money between users' bank accounts. This model holds risks for the network operators, who give up substantial control of the product. However, it helps create a more seamless experience for users and

opens up access to other financial services not available to the average M-Pesa user.

I&M Bank's M-Pesa Prepay Safari Card, an international pre-paid VISA card, is aimed at a higher-income target market. The card can be pre loaded in Kenya Shillings through M-Pesa only, and can be used at over 1.7 million Visa ATMs and 28 million VISA merchant outlets worldwide. The I&M pre-activated card costs Ks250 ($2.50[28]) and each top- up costs Ks125 ($1.25). Withdrawal from I&M and Kenswitch ATMs costs Ks30 ($0.30) and Ks100 ($1.00) from Pesa Point ATMs. Withdrawal from Visa ATMs outside Kenya costs Ks250 per transaction. There is an annual fee of Ks250. The customer can surrender the card any time and get a refund of the remaining balance, after deduction of administrative charges, from any I&M Bank branch.

In recent weeks, Airtel Money has announced its own innovation in this space, in conjunction with Standard Chartered Bank and MasterCard. Dubbed "Pay Online," it is the world's first virtual card that operates off a mobile wallet linked to Airtel's mobile money service and running off of MasterCard's online transaction platform[29]. The service is available only to registered Airtel Kenya clients who will be able to make online purchases from any site where MasterCard is accepted. Airtel customers request a one-time virtual card number with the amount of purchase value needed, which must be available on the customer's wallet. The Airtel platform will then generate a special 16 digit number that can be used for online purchases that take MasterCard account numbers, and the number must be used within 24 hours.

New business model innovations around M-Pesa include Musoni MFI**,** the Changamka Prepaid Health Cards and the Kilimo Salama crop insurance product. Musoni's disbursements and loan repayments are made solely through the M-Pesa channel using the deposit (Bill Pay) and disbursement/withdrawal (Bulk Payment) channels. To improve technological performance, Musoni's middleware takes care of proper identification of individual customer account for each loan repayment and also ensures timely and proper upload of data to the Safaricom Bulk Payment link for smooth disbursements. The cost of loan repayment for the client is Ks20 ($0.20) per transaction. M-Pesa charges Ks30 ($0.30) for each transfer from the M- PESA account, but Musoni bears Ks10 ($0.10) of this on the customer's behalf. Disbursement through M- PESA is free for the customer – again Musoni pays Safaricom Ks30 for each loan disbursement; and the customer pays a minimum of Ks25 ($0.25) for each withdrawal from an M-Pesa agent. The total cost of a "round trip" cash in/out costs the client $0.70 and Musoni $0.40.

[28] Current exchange rates between the US$ and Kenya Shillings are fluctuating daily, so an average of Ks100 to $1 is used in this report.
[29] W. Mutua, "How Mobile Money is Bridging the Gap to Online Payments in Kenya," *memeburn*, September 26, 2011.

Healthcare provider Changamka is appointing agents to sell its health cards, which consist of prepaid health cards that cover a predetermined set of health services at designated health service providers, plus a newer card that's been developed to cover maternal and neonatal health costs. These agents are small outlets, a chain of supermarkets and other individual NGOs and business places. A customer can top up the card by transferring money via M-Pesa; others can also top up cards on their behalf. The customer pays Ks20 to Safaricom for each top up. This charge is irrespective of the amount transferred by the user from his M-Pesa account to his Changamka account. Changamka does not charge the customer for topping up, but rather pays Ks10 for each transfer to Safaricom, to offset the Ks30 that Safaricom would usually charge the M-Pesa account holder.

Kilimo Salama Plus is a crop insurance product developed by the Syngenta Foundation for Sustainable Agriculture and UAP insurance company. Debuted as a pilot in 2009, Kilimo Salama is an index-based insurance product that covers the risks associated with rainfall variability. Using a series of solar weather stations that send out data on rainfall levels, sun and temperature every 15 minutes, payouts are determined by comparison to historical regional rainfall patterns and based on a deviation from the normal rainfall index, as opposed to being based on crop damage after the harvest which can take months to assess and is subject to all sorts of manipulation and dispute. Each farmer who buys insurance is linked to the nearest weather station (no one is more than 20 kilometers from a station). If the weather station shows that the rainfall was insufficient early in the growing season, or too late in the corn season, all the farmers in that area get an automatic payout — farmers do not have to file a claim. If the rainfall was only slightly off, farmers would get a small payment. If the weather was extreme enough to destroy their whole harvest, they would get the full amount. No farm visits are necessary. The policies are sold in the same stores where farmers buy their seeds, fertilizers and chemicals. The shop owner is given a camera phone to record the purchase, which instantly sends a confirmation text message to the buyer, and the individual, small premium payments are collated at the store and sent via M-Pesa to UAP. At the end of the growing season, payouts go electronically to the farmer's M-Pesa account.

Most financial institutions that get involved with M-Pesa are offering a link to their existing products through the M-Pesa channel, trying to harness Safaricom's wide agent network. While transacting over the M-Pesa platform, the customer is bound by the limits of amount that can be transacted on M-Pesa channel – the minimum being Ks50 ($0.50) and maximum being Ks70,000 ($700). For example, if a customer of CIC M-Bima Jijenge savings plan saves Ks20 ($0.20) per day for deposit into M-Bima, since he is using M-Pesa for money transfer to CIC, the transfer would occur weekly and be for Ks140 ($1.00). CIC does not charge its customers for transfer into the M-Bima account, and even bears the Safaricom charges of Ks30 for each transfer.

A large number of financial institutions have opted for Safaricom's "Bill Pay"

option to allow their customers primarily to deposit into their savings/ insurance/ pension/ investment accounts. Some of the more popular ones appear to be: PesaPap (from Family Bank); Pata Cash (from Kenya Post Office Savings Bank) and KCB Connect (from Kenya Commercial Bank). Deposit-taking microfinance institutions Faulu and SMEP have also entered into agreements with Safaricom. Their clients can repay loans and deposit into their savings account using the Bill Pay option of M-Pesa. Faulu has launched withdrawal service as well via M-Pesa, while SMEP is in the pilot test stage.

In terms of customer economics and satisfaction regarding "banking" via M-Pesa, it is less expensive to save in an M-Pesa account than shifting money to a bank account. This is because cash-in at M-Pesa agent is free for the customer, but transferring money (deposit) to a bank account costs varying amounts. Similarly transferring money from bank account to M-Pesa (withdrawal) itself costs the customer, and adding the cash-out charges makes it still costlier. The whole cycle of deposit and withdrawal (or indeed loan repayment) through M-Pesa therefore becomes an expensive proposition for the customer when done through a bank. This is highlighted in the table below.

Table 4: Comparison of Bank and M-Pesa Costs

	Minimum charges for deposit using M-Pesa (Ksh)		**Minimum charges for withdrawal using M-Pesa (Ksh**		**Total charges for one deposit & one withdrawal (between Ks 100-Ks 2,499)**
Institution ↓ Charges →	Into accounts by institution	Transfer by M-Pesa	Out from account by institution	Cash-Out by M-Pesa	Total
M-Pesa	------	Free	------	25	25
M-Kesho	Free	Free	30	25	55
Family Bank	35	20	60	25	145
KCB	20*	20	60	25	145
Postbank	Postbank	20	70	25	105
SMEP DTM	1 (for SMS)	30	Free**	25	56

** KCB has an additional band of Ks100-1,000 for which customer is charged Ks20 and between Ks1,000 and 2,500 customer is charged Ks30 for deposits.*
*** For withdrawal of loans disbursed.*

These costs will probably deter urban clients from accessing their bank accounts through M-Pesa more than their rural counterparts. The proximity of bank branches makes the fee structure unattractive for urban users. However, rural users may compare the cost of transacting through M-Pesa to other costs (travel, opportunity cost, risk of carrying cash etc.) and find it more favorable. Nonetheless, customers typically find charges levied for deposit and withdrawal

"fair" in interviews[30]. They value the convenience and accessibility of M-Pesa agent points for transacting in their bank accounts. They also like the ability to withdraw from their bank account using an M-Pesa agent point in times of emergencies. But about 75% customers also told researchers that they have faced issues of delays in receiving money into their M-Pesa account when transferring it from the bank account, severely limiting their ability to withdraw when they needed the money[31].

At present financial institutions appear unsure about the overall costs and benefits arising out of their partnerships with M-Pesa. Most are sorting out the operational issues due to integration challenges and difficulties of communicating the proposition to customers. While it's assumed that the linkage between mobile money and banking will continue to grow, how it evolves over the coming months and years is difficult to predict.

Small businesses are starting to look to mobile money for developing and enhancing their own service offerings. Water-pump vendor KickStart has developed a layaway program for customers, whereby customers are allowed to pay an initial deposit of Ks500 and then a series of small payments, via M-Pesa, for purchase of products. The company provides SMS confirmations to customers upon receipt of payments, showing the most recent payment and their account balance, and also provides monthly SMS reminders. Using Safaricom's Bill Pay service, KickStart splits the transaction fees with customers, whereby the user always pays Ks20 per transaction, and KickStart pays the balance, which varies upon the value of the money sent. (Most transactions are below Ks1,000, so the Safaricom fee of Ks30 is split 20/10, where Kickstart pays Ks10; as the values go up the fee goes up, to a maximum fee of Ks50, of which KickStart would pay Ks30, leaving the customer to pay the remaining Ks20.)

KickStart has so far acquired 126 layaway customers, many of which they feel wouldn't have been able to afford a pump otherwise, and have substantially increased the number of women buyers through the program. Other small businesses, such as solar lamp vendor Tough Stuff, are looking to develop a similar mobile money based layaway and "rent to buy" services and we anticipate seeing at least a few more service offerings from other companies in the next 6-12 months.

Technical Requirements in a Mobile Money Ecosystem

In terms of technology requirements for use of mobile money, they are fairly straightforward for individual users, and get a bit more complicated for corporate users. Mobile money applications reside on the user's SIM card within their cellphone; this type of application is commonly referred to as SIM Toolkit, or STK. This is the only interface available for the M-Pesa system. There is some

[30] Ibid
[31] Ibid

limited use of USSD[32] for linkage to bank sites, but that's about it; USSD is an expensive channel in Kenya and not very user friendly, so the MNOs aren't as keen to employ it if they don't have to (Airtel, in fact, has a policy of never opening its USSD channel to outside parties). The other MNOs are introducing additional interfaces besides STK, including WAP and Java[33], largely as a means of differentiating themselves from Safaricom and being prepared for more advanced smartphone users, but so far the STK interface remains the most popular. As such, development partners wishing to implement mobile money solutions of their own will have to assume the use of the STK interfaces provided by the mobile money providers if they wish to reach a broad audience. There is no impact on the inner workings or systems of development partners.

The more challenging technical aspect of mobile money, for corporate users, is the issue of integration into the M-Pesa platform. When Safaricom developed the platform, it was a proprietary system, with no future plans for integration into other systems outside of the MNO and therefore no APIs for easy integration[34]. However, with the huge success of M-Pesa and the growing demand for linkages into it from other entities, Safaricom is under increasing pressure to make integration easier. Nonetheless, despite ongoing promises from Safaricom for an "open" API, there has been little evidence that one is forthcoming any time soon. Safaricom claims that if a corporate client wants integration into their back office, it should only cost around $200 to do this via an additional device that can be fitted with a SIM card and plugged in to their own system. However, other groups we spoke with spent considerably more than $200 to directly integrate the Safaricom service into their enterprise resource planning (ERP) systems[35], to the tune of around $10-15K in one case. As a result, a new ecosystem of service providers focused entirely on making integration into M-Pesa easier for entities is emerging in Kenya.

The new players in this M-Pesa ecosystem include payment gateways providing

[32] Unstructured Supplementary Service Data (USSD) is a protocol used by GSM cellular telephones to communicate with the service provider's servers. It was not originally developed to be a user-interfacing service link, and is considered an inferior and expensive customer communications tool. It is also less secure than other protocols, so less attractive for mobile money purposes.

[33] WAP is Wireless Application Protocol, a technical standard for accessing information over a wireless network; a WAP browser is a web browser for mobile devices. Java is a popular programming language, particularly for client-server web applications, including mobile applications. Both standards can be used in newer smartphones only, unlike USSD or SMS, which are available in all basic handsets.

[34] An application programming interface (API) is a particular set of rules ('code') and specifications that software programs can follow to communicate with each other. It serves as an interface between different software programs and facilitates their interaction, similar to the way the user interface facilitates interaction between humans and computers, or that peripherals such as printers speak to computers. When a service platform lacks an "open" API, it means that any other program wishing to communicate with the service must build a custom interface

[35] Automated software systems that integrate internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc.

intermediation at merchants for bill payment across all mobile money providers & credit cards, such as PesaPal. There are also integrators that allow people to operate multiple accounts across mobile money providers and banks, as well as merchants and e-commerce sites, such as Mobikash. Within the B2B space, there are a number of middleware providers building platform integration systems between banks and mobile money providers (e.g., Cellulant, Elma, Kraft Silicon), while increasingly we're seeing the emergence of other types of SME/MFI service providers that are popping up with linkages to mobile money service providers (e.g., Kopokopo). (See Appendix VI for a list of current mobile money ecosystem service providers in Kenya.)

SECTION IV. USE OF MOBILE MONEY BY USAID PARTNERS

USAID/Kenya's operations are organized by key program sectors, which encompass USAID's various operating areas, both for Kenya and the region. It was the implementing partners within these sectors that this Assessment Trip attempted to meet with for purposes of ascertaining their use of mobile money in their program delivery and operations. These program sectors are as follows:

USAID/Kenya:

- ABEO (Agriculture, Business & Environment Office)
- OPH (Office of Public Health)
- DG (Democracy & Governance)
- PDA (Program Design & Analysis)
- OTI (Office of Transition Initiatives)
- EDY (Education and Youth)

While the purpose of this trip was to engage the USAID/Kenya staff and their implementing partners, the team also met with members of the USAID/OFDA/ECARO (East & Central Africa Regional Office), as well as selected staff members from the following regional offices for USAID/East Africa (EA):

- PDI (Program Development and Implementation)
- RFMS (Regional Financial Management Services)
- RAAO (Regional Acquisition & Assistance Office)
- RCMG (Regional Conflict Mitigation and Governance)

A comprehensive list of USAID/Kenya's implementing partners was not available from the mission, nor was there time to meet with all of them, but the team did meet with a select sample of partners (and non-USAID organizations) who were either using mobile money or planning to do so. (See Appendix II for a list of which organizations and individuals were interviewed on this Assessment trip and Appendix III for a description of how partners are using mobile money.) The purpose of interviewing the partners was to identify the various ways in which they were using mobile money and determine the key benefits and challenges of the service, with a view to forming an opinion of how USAID might best support its partners in their mobile money efforts going forward.

There was no specific correlation between sector or organization size and use of mobile money in Kenya. Implementing partners were all familiar with mobile money, either through their own personal use or within their organizations, and many of them were using it for program delivery and/or internal operations. Table 5 below lists those who were interviewed and said they were using mobile money, but this isn't an exhaustive list. A more complete and comprehensive survey of USAID's implementing partners in Kenya would likely elicit many more examples of mobile money use.

Table 5: Examples of USAID Partners Using Mobile Money

ABEO	DG	OTI	OPH	EDY	OFDA
TIST	CGD	KTI	RTI	Yes Youth Can	Food for Peace
NRT	IED		Intrahealth		Horn Relief
FIRM	PACT		AMPATH		
KDLP			MCHIP		
One Acre Fund					

The primary reasons for using mobile money by the implementing partners were to:

- Make salary payments to remote and seasonal workers;
- Provide cash advances for such items as per diem, transport and petty cash requirements; and
- Distribute payments as part of humanitarian cash transfer programs, particularly as part of this year's massive drought relief efforts in the North of Kenya.

In addition, MFIs are using mobile money for loan disbursement and repayment, while other groups are using it to facilitate faster and easier payments for products and services (e.g., crop insurance, prepaid water meters, etc.). A good example of the benefits derived from using mobile money in their program delivery is illustrated on the next page for MFI Juhudi Kilimo.

Case Study: Juhudi Kilimo MFI

Who: ABEO MFI partner that provides asset financing and technical assistane to smallholder farmers and small-to-medium agro-business throughout Kenya

- Cash needs include loan disbursement and repayment
- Cost comparison before and after using M-Pesa:

Disbursements (Ks per transaction per client)					
Without M-PESA (cheques)			With M-PESA		
Juhudi	Cheque clearing charge	100	Juhudi	Cost of transfer	50
Juhudi	Courier charges	60	Juhudi	Head Office processing	5
Juhudi	Head Office processing	10	Client	Cost of cash withdrawal or onward transfer	150
Juhudi	Field Office delivery	5	Client	Travel to agent	10
Client	Travel to Bank	120			
Client	Cheque clearing charge	300			
Total		595	Total		215

Repayments (Ks per transaction per client)					
Without M-PESA (bank deposits- group pooled)			With M-PESA (individual payroll transactions)		
Juhudi	Back office data entry	20	Juhudi	Cost of transaction	20
Client	Travel to bank (group pooled)	20	Juhudi	Cost of transaction	10
			Client	Cost of SMS confirmation	10
			Client	Travel to agent	10
Total		40	Total		50

Juhudi	Without M-Pesa	With M-Pesa
Disbursements	175	55
Repayments	20	30

Client	Without M-Pesa	With M-Pesa
Disbursements	420	160
Repayments	20	30

Benefits:

- Faster loan disbursement (money transferred in 2 days from application submission, versus 7 days currently)
- Reduce distance (and risk) for 'cash in transit'
- Real tim back office procession (average posting time cut down from 5 days to 5 minutes)
- Zero errors in back office processing
- Reduced distance (and risk) for 'cash in transit'

Most of the mobile money distribution by the implementing partners was conducted via Safaricom's Bulk Payment service (and in some cases via P2P, for those partners that were unaware of the Bulk Payment service). The partners using Bulk Payments tended to be those organizations that had large numbers of staff in rural and remote areas needing payments for whatever reason, and the use of mobile money was the fastest, safest, and cheapest means of doing so. For those partners that also needed to be paid themselves on a somewhat regular basis, such as MFIs, the Bill Pay capability was another element of their service offering to end users.

All the partners using mobile money believe it has vastly improved their program delivery and operations, in a number of ways. They find it easier, cheaper (see Table 6, below) and more convenient to use mobile money for bulk payments, and also much faster than normal payment methods. In Kenya, checks can take up to four days to clear[36], and even EFT transfers can take up to a day or two, particularly when sending from one bank to another. For those partners that need to get money to their employees quickly, going via the normal bank route has often been shown to take too long.

Table 6: Cost Comparison of Money Transfer Fees

	M-Pesa	Postapay	Check Clearing	EFT
Cost of a money transfer	Ks30	Ks150	Ks100	Ks50-300*

** EFT charges range from Ks50-100 within the same bank, and Ks300 for transfer to different banks.*

Sending mobile money, however, has proven to be much cheaper than cash or in-kind (e.g., food) deliveries, by far (see Figure 4 Case Study, below). For remote bulk payments, where bank branches are a long distance away or non-existent, organizations have typically had few options available. One is to hire an armored vehicle and security staff to transport the cash to its intended location and have additional staff on hand at the other end to supervise its distribution to recipients. The other is to have a central office staffer, often a finance officer/staff member, carry with them large amounts of cash out to the field, with the same issues of physical distribution and security at the other end. In both scenarios, the organization incurs a number of costs and security challenges, including vehicle hire, high fuel costs, the cost of sending staff members out (including opportunity costs of having them away from the office), and the cost of extra staffing where needed for security. In addition, there was a clear, palpable discomfort among staff associated with handling large amounts of cash, especially in rural areas, as they frequently ran the risk of harassment. In recent years some banks, particularly Equity Bank, have offered cash distribution

[36] Kenya has recently introduced a check truncation policy, which will reduce the number of days for check clearance from four to two.

services in remote areas, but in these cases they've had to deliver the money to the nearest branch in the nearest town, meaning the partner organization still faced a number of "last mile" delivery and distribution requirements and the associated costs.

Figure 4: Partner Example: PACT

Case Study: PACT Kenya

WHO: DG partner running Kenya Civil Society Strengthening Program – activities include workshops, focus groups, training and support around conflict resolution

- Cash needs include per diem and travel reimbursements for participants
- Previously, would send a finance staffer into the field for each workshop, to carry cash and obtain confirmation & receipts of disbursements. Costs included:

–Salary for Finance Staffer (3 days)	Ks 6,000
–Vehicle Hire	Ks 7,000 / day
–Fuel	Ks 12,000
–Accommodation	Ks 7,500
–**Total Cash Disbursement Costs:**	**Ks 46,500**

- Started using M-Pesa last month to pay participants, engaging CBA bank, Safaricom and Airtel to disburse payments for workshops. Costs include:

–Transaction Fees of Ks 75/transaction, for 50 participants	**Ks 3,750**

•**Benefits**
–Cost reduction of over 90% for paying workshop participants
–Reduction in staff risk by eliminating travel with cash
–Improvement in planning & efficiency by having to arrange transfers ahead of workshops

While the issues of cost and speed are critical and usually primary for partners when considering the use of mobile money, they're not the only benefits for the organizations involved. Additional benefits reported include:

- The reduced paperwork that they need to deal with now has improved their efficiency, and that having to plan ahead on the electronic payments has also forced them to improve their overall management efforts.
- The ability to distribute funds from a central headquarters has improved accounting and control and has reduced the number of hands that cash must go through.
- The use of mobile money is far more convenient for their employees and beneficiaries, who can receive their payments on their phones, privately, and cash out at their convenience at a nearby agent of their choice whenever they wish.

- Another benefit raised, by the Democracy & Governance partners, was their particular desire to not carry cash with them as they delivered their services around voter registration and elections observation, for the reason that they didn't want to be perceived to be trying to "buy" votes or engage in voter influence during elections and referenda.

In some cases, organizations are seeing greater uptake of their services when delivered via mobile money. A prime example from a non-USAID partner organization is Changamka's prepaid healthcare vouchers and maternal-child health services, where recipients have the peace of mind of knowing they have got the money to cover the services on offer and therefore do not hesitate to use them.

Some partners, like AMPATH in Eldoret, are not only using mobile money for their programmatic and operational needs, but they have decided to set up a separate business as an M-Pesa mobile money agent within their health center, for purposes of providing greater convenience to their clients.

One area that partners all agreed would benefit from mobile money, but had not yet implemented, was for paying low value operating expenses within the organization, such as for office supplies, cleaning services, etc. While this is an area of large volumes of transactions for most organizations (one group estimated that about 80% of their transactions were small petty-cash type payments, but that the total value of these transactions amounted to only about 5% of the value of the organization's expenses), unless the recipients had either Bill Pay accounts or personal M-Pesa accounts, it wasn't easy to pay them and get any sort of receipt for the payments.

Mobile money, while it brings lots of benefits, also presents its own challenges to organizations attempting to use it (see Table 7, below). These challenges vary according to the size of the organization and the sector it is operating in, and may be a reflection of the sophistication and specific needs of different sectors.

SMEs, like water-pump vendor KickStart, and larger NGOs and companies want platform integration with Safaricom's M-Pesa platform for financial control and integrity purposes. When it comes to Bulk Payments, Safaricom makes available to the client a password-protected web interface through which they can see records of their M-Pesa payments, and download these records either in PDF or spreadsheet form, for inputting into the client's own MIS or ERP systems [37]. If individuals within the organization have access to the records before they are input into the accounting systems, there is an opportunity for data manipulation that is unacceptable to more sophisticated organizations. Obtaining direct integration into Safaricom's M-Pesa platform, however, is very difficult and costly to achieve because it will always require customer integration work. The M-Pesa

[37] Bulk payment records must usually be inputted manually, or via the use of an Excel Macro program that can take the information and format it to the organization's MIS system.

platform was built as a stand-alone proprietary system, and as such it does not make its data available to other programs through open APIs, so that each and every integration project becomes a costly one-off solution.

Table 7: Partner Benefits and Challenges of Mobile Money

Benefits of Mobile Money	Challenges of Mobile Money
Faster, easier, safer	Working with Safaricom difficult
Cheaper than alternatives	Platform integration
Reduction in paperwork	Remote mobile network coverage
More convenient for beneficiaries	Ensuring agent liquidity
Helps promote uptake of services	Not all recipients have National ID
Becoming agents is profitable business	Training for new/illiterate users
	Obtaining signed receipts
	Recourse for mistaken payments

Many organizations claim that Safaricom is difficult to work with, in that it is slow to respond or deliver service, inflexible about making any changes to its services, and refuses to negotiate bulk tariffs, even for very large volumes of transfers. Not all organizations feel this way, however, and the differing opinions on this point may reflect differing expectations on the part of the client organizations. Some want more customized service and attention, both technically and personally, whereas others are satisfied enough with what they are able to achieve with Safaricom's current set portfolio of services that they haven't asked for even minimal changes.

For client organizations operating in very remote areas, particularly the humanitarian organizations trying to distribute cash transfers to drought victims in the north, the challenges of using mobile money are somewhat different. In these remote regions, mobile network coverage is either very spotty or non-existent, so that other solutions are needed to deliver money to recipients. In some cases, organizations such as Oxfam are training local traders in the region to act as agents, and using the nearest bank branch (which may still be hours away) to receive the cash into the trader's bank account, whereby the trader needs to travel to the bank branch to obtain the cash and then travel back for distribution of the payments. Safaricom has a few truck-loaded Base Transceiver Stations (BTS), which can be driven to remote areas needing temporary coverage, but these are inadequate for the needs of the many emergency relief organizations requesting the coverage.

Along with mobile network coverage is sufficient mobile money agent coverage, and adequate agent liquidity for when large volumes of transfers are made to specific areas. While there have been occasional problems in this area in recent years, Safaricom has generally done a good job of planning ahead for such contingencies with its corporate clients, so major problems are few and far between. A separate but related issue is that of M-Pesa system outages, which

some partners feel is a problem, especially on Fridays when a lot of transactions are occurring and straining the Safaricom system.

Another challenge of delivering cash transfers to the most remote areas is that many of the recipients lack a National ID. The government is trying to rectify this quickly as it would like to have a complete voter list in advance of next year's elections, but the issue still remains. A similar problem in these areas is that many people do not own phones, either because they can't afford them or because the lack of mobile network coverage makes it pointless. Several NGOs tried instituting a policy of letting beneficiaries nominate "proxies" – usually family members or trusted members of the community who could receive the funds on their behalf. However, many of these same NGOs have decided to stop using this proxy system, as too many recipients were complaining of not getting all or some of their money. In these cases, the organizations opted to give the beneficiaries SIM cards or IDs of their own with which to receive and withdraw their funds at an agent location or for physical cash distribution where there was no mobile coverage at all.

All the organizations we spoke with have a concern about the need and ability to obtain written receipts for the payments they distribute. In all cases they wanted the recipients' signatures for the benefit of their parent organization or donor requirements, not because they felt they needed it themselves. Even though the organizations felt confident of the electronic records they received from Safaricom, they were concerned about not contravening any control or audit requirements that may come up, whether these were explicitly outlined or not. The irony here, of course, is that by continuing to obtain signatures from their rural or remote beneficiaries, most of these organizations were negating some of the very benefits of using mobile money in the first place, specifically travel costs and staff time. Another issue related to receipts for Bulk Payment users is that many of the partners want to cover the cost of the first cash withdrawal for their users, but obtaining records that reflect that extra expense cannot currently be done within the Safaricom system.

Another, somewhat unexpected, issue that arose regarding large volumes of transfer payments was concern among some agents around conducting greater than normal transactions and thus triggering a "suspicious activity report" from Safaricom. Given the strict monitoring and fraud regime that Safaricom imposes on its agents, none of them wanted to find themselves subject to investigation, even for perfectly legitimate business, nor did they want their names included in monitoring reports to the CBK. In this particular case, the organization in question wasn't aware that they could use a Bulk Payment Service offered by Safaricom, so they attempted to place high volumes of P2P transfers with the help of a supermarket agent chain, where the issue arose. Better information would have helped the partner here, but it's noteworthy that the monitoring regime is enforced enough to impel caution on the part of agents.

A final topic that the partners we spoke with were not entirely satisfied with was Safaricom's policy on recourse, should money be inadvertently sent to the wrong mobile account number (even after the initial validation process). Because of problems in the past around collusion, Safaricom's policy now is that if the money is still in the mistaken recipient's wallet, the transfer will be reversed; however, if the money has already been cashed out or sent to someone else, nothing can (or will) be done. (This is one area where banks providing intermediary services between client accounts and Safaricom's Bulk Payments service are voluntarily taking on liability for this loss, and given the usually very small amounts concerned, it is an inexpensive way for the banks to enhance their service offering and increase their goodwill with clients.)

Despite the many challenges faced when implementing mobile money, when asked what they would do differently, all the partners and organizations interviewed stated that they would have started using mobile money sooner than they did, and wished they had known more about its uses and benefits.

SECTION V. KEY SECTORAL ISSUES AND CHALLENGES

Looking at the snapshot of experiences of USAID/Kenya's implementing partners and other NGOs in using mobile money in their programs, there are a handful of key issues and challenges facing the entire sector that are worth highlighting, some of which have already been discussed. These can be summarized as follows:

- Some customers are constrained by Safaricom's monopoly and inflexibility around service offerings, and the difficulty of dealing with Safaricom without personal connections. As one interviewee put it, it is very hard to "maneuver the Safaricom maze." A related issue here is that the Safaricom help centre, even for corporate services such as Bulk Payments and Bill Pay, is only open from 8 am to 5 pm each day.

- Safaricom's platform limitations for those that want direct integration present multiple challenges - access, complexity and cost.

- The general knowledge level about how mobile can be used and how to integrate it varies significantly among organizations. Many could benefit from education on where to find resources to help, not just with mobile money but also around process improvement in their accounting systems to facilitate mobile money usage.

- Partner organizations would benefit from consistent messaging, confirmation around use of mobile money in program implementation and legitimacy of mobile money electronics records as accounting records. This applies not just to USAID but other donors as well since many programs are funded by multiple donors.

- There is currently low market penetration by other MNOs. While the other MNOs are in many ways easier to deal with and have technical advantages over the Safaricom M-Pesa system[38], their very low coverage and market share render them almost irrelevant at this time for organizations seeking solutions with broad coverage.

- Key program areas, especially remote, drought-ridden regions, often have poor mobile network coverage, lower mobile phone penetration, low literacy levels and will require greater training before significant adoption rates can be attained.

[38] Airtel, Orange and Yu all have platforms that utilize open APIs for easy integration and tighter security protocols; for example, Airtel's platform uses ISO 8583 for data transfer, in keeping with worldwide banking data security standards.

APPENDICES

APPENDIX I. EARLY CHALLENGES FOR MICROFINANCE INSTITUTIONS WITH MOBILE MONEY

While there are significant benefits to be gained by the use of m-commerce by MFIs, especially in rural areas, in the form of cost savings, efficiency, fraud and error reduction, and client security and convenience, most attempts around the world to do so have been unsuccessful or are progressing very slowly. The reasons for this are varied, but center largely on the lack of reliable information links between the mobile network operators' (MNOs) databases and the MFI's management information systems (MIS)[39] and on the lack of specialized technical skills to implement mobile banking models or tap into existing platforms[40]. Without an automatic software link that can record transaction information in real time between the mobile network operator and the MFI's own information systems, the main benefits of mobile money are not going to be realized. In the Philippines, for example, an initiative to let customers of rural banks use Globe Telecom's popular G-Cash instead of cash was constrained in part by the poor quality of the rural banks' core banking systems[41]. Introducing new technologies such as software links is also difficult for many rural MFIs because they often work in an environment of frequent power outages and unreliable IT systems.

Not all problems have been technical in nature, however. Many MFI clients appreciate and benefit from regular contact with their loan officers and fellow clients, and are therefore resistant to change the way they behave and interact (as are some of the MFIs themselves, for the same reason). In Kenya, an MFI that substituted group loan cash repayments with repayments via M-Pesa found that group loan borrowers made fewer on-time repayments under the new system. Customers no longer attended the group meetings that had helped to keep up repayment pressure and the loan officers ended up with more work than before chasing repayments [42].

Other problems faced are more economic in nature. First, the full advantages of m-commerce are only realized once the majority of the MFI's customers have converted to the service, better known as the "network effect," meaning it's difficult to run a cost efficient pilot with just a small sample of customers. Also, the relatively high transaction fees charged by mobile operators have inhibited uptake by lower income users. Mobile operators have typically targeted their

[39] M. Pickens, "Can M-Pesa Work for Microfinance Clients?" CGAP, June 2008
[40] G. Ivatury, I. Mas, "The Early Experience with Branchless Banking," CGAP Focus Note No. 46, April 2008
[41] Ivatury & Mas, 2008
[42] Ivatury & Mas, 2008

mobile payments fees to the remittance business, with its less frequent, larger payments, rather than microloan payments that are typically smaller and on a set schedule. Operators such as Safaricom in Kenya and Roshan in Afghanistan, however, started to charge special lower rates for their MFI partner clients, as a means of addressing the pricing issue they had in earlier MFI pilots[43].

Despite the barriers, the benefits to be gained by successfully implementing m-commerce into MFI operations are potentially large, in both financial and customer service terms, and efforts continue to prove the concept. In addition to ongoing programs in Kenya, the Philippines and South Africa, Tameer Bank in Pakistan and XacBank in Mongolia are developing mobile banking programs in partnership with mobile operators to reach their rural clients. In India, SKS Microfinance has developed a mobile banking initiative in partnership with larger Andhra Bank as it seeks to expand its market among the unbanked, and in Ecuador, the Red Financiera Rural association of MFIs and cooperatives is planning to contract with a technology provider to build and maintain both core banking systems and a mobile banking channel on behalf of the group[44].

[43] M. Pickens, CGAP 2008
[44] Ivatury & Mas, 2008

APPENDIX II. LIST OF INTERVIEWEES DURING OCTOBER 2011 ASSESSMENT TRIP

Mobile Network Operators (MNOs)
Safaricom
Airtel
Orange
Yu

Financial Institutions
Equity Bank
CfC Stanbic
Citibank
Juhudi Kilimo

Stakeholder Groups
Cash Learning Partnership (CALP)
Financial Services Deepening Trust (FSD)
iHub, mLab
Summit Strategies
Syngenta

Government of Kenya
PS Bitange Ndemo, MIC
ICT Board of Kenya

SME
KickStart
Grundfos
Kopokopo
Changamka

USAID/Kenya Implementing Partners
DAI/FIRM (ABEO)
Fintrac (ABEO)
NRT (ABEO)
RTI (OPH)
Kenya Pharma (OPH)
AMPATH (OPH)
Fanikisha (OPH)
Yes Youth Can (EDY)
IED (DG)
PACT (DG)
CGD/ELOG (DG)
KTI (OTI)
COMPETE (EA)
SUWASA (EA)
Food for Peace (EA)

Donors/NGOs
FSD (DFID)
World Vision
Concern Worldwide
Bridges International
Technoserve

APPENDIX III. IMPLEMENTING PARTNER MOBILE MONEY USE

Partner	Description	Mobile Money Use	Region	Funding/Timeframe
AMPATH	Healthcare partnership delivering health care services, training and research	Using M-Pesa Bulk Payment to pay staff and clients, including CHWs; transacting about Ks4 million per month; also set up as M-Pesa agent	Western Kenya (HQ: Eldoret)	October 2007 – September 2012
CGD	DG partner supporting voter registration, training and election observations.	Trialed mobile money to pay 450 supervisors & 10K monitors during 2010 referendum; used P2P due to lack of knowledge around Bulk Payment; want to use for next year's elections	Countrywide	
Fanikisha	Program aimed at strengthening CSOs that provide health services	Not using yet but interested in more information	Countrywide	$41 million (PEPFAR) July 2011 – July 2016
Fintrac	Supports agricultural value chain players	No official project use yet, but some value chain partners are using it to pay salaries (Mace Food, Equator Kenya); are also supporting partners who wish to implement mobile money	Countrywide	
FIRM	Works with financial institutions in Kenya on strengthening rural finance and financial inclusion; provides loan guarantees, agricultural strategy, product development and ICT	Several MFI members using mobile money, primarily for repayments: KWFT, Faulu, SMEP, Juhudi, Musoni (disbursements also);	Countrywide	
Food for	Distributing food	Cash transfers via	Northern,	

Peace	aid (Ks3.5m) and cash (Ks1.25m), of which about 800K is UCT	Safaricom, Equity Bank & their offline POS	Western drought areas	
Horn Relief	Humanitarian organization working on food security and livelihoods (with an emphasis on cash based responses), natural resource management, education (formal and non-formal), WASH, and humanitarian response.	Using M-Pesa to pay 2,800 beneficiaries	Kenya, Somalia, Sudan	
IED	Promote democratic elections in Kenya and the Africa region through monitoring and observation of all aspects of the electoral and democratic processes; provision of civic/voter education; technical support to key institutions of governance; and research and advocacy	Used to pay monitors during 2010 referendum; used P2P function only, involving lots of manual transfers, & which also led to agent liquidity issues; looking to use Bulk Payment going forward	Countrywide	September 2003
Intrahealth	Working to improve the hiring, training & capacity of health workers, esp in remote areas	Use M-Pesa for staff travel costs, paying workshop participants; want to use M-Pesa for creation of community of CHWs, and possibly offer insurance product through M-Pesa	Northern Kenya	
KDLP	Program to enhance trade in		Garissa, Wajir, Mandera, Ijara	$10M

	livestock and livestock products, with the goal of raising both income and food security for a minimum of 50,000 pastoralist households		and Tana River Districts	September 2010 – June 2013
KTI	Program designed to identify and support critical initiatives in support of the National Accord, accountability, and the Agenda IV reforms	Had used M-Pesa in 2010 for paying staff, workshop participants in voter registration campaigns; used P2P only at time, wasn't aware of Bulk Payment service	Western Kenya	
MACE Foods	Private sector partner working with smallholder farmers to export chili peppers and vegetables	Uses M-Pesa's Bulk Payment service to pay women farmers	Western, Nyanza and Rift Valley Provinces	
MCHIP	MCHIP aims to accelerate the reduction of maternal, newborn and child mortality in Kenya through the introduction, development and scale-up of high-impact interventions.	Uses M-Pesa and other mobile money services to pay CHWs	Bondo District	
NRT	Umbrella organization that oversees local conservancies owned and managed by local communities; activities include building capacity, ensuring financial transparency, and improving local security for	Will soon pilot M-Pesa's Bulk Payment service within its NRT Trading program to pay craftswomen for their work; also using Pay Bill service for repayment of MFI loans; working directly with Safaricom and Equity Bank; also looking at livestock purchase program;	Central-Northern Kenya (17 conservancies, 5 districts)	$3.2M Three year program ending June 2012

	both pastoralists and tourists; also provides a means for granting microfinance loans	anticipating approx. Ks60K savings per month (fuel-Ks30K, Ks10-15K staff allowances, rest vehicle maintenance)		
One Acre Fund	Working with 50,000 smallholder farmers in Kenya and Rwanda to access regional staple foods markets for maize and beans	Introduced Kilimo Salama crop insurance product in 2010, which is based on M-Pesa system	Western Kenya	$76K January 2011- December 2011
PACT	DG partner running Kenya Civil Society Strengthening Program; activities include workshops, focus groups, training & support	Using M-Pesa, through CBA bank, to pay workshop attendees and staff costs, including per diems, travel; reduced costs of cash disbursement by 90%	Countrywide	September 2006 - September 2012
TIST	Tree planting program	Using M-Pesa to pay stipends to TIST members for planting and caring for trees		
RTI	Malaria spraying, education; part of President's Malaria Initiative (PMI)	Had used security co to distribute payments to sprayers, switched to M-Pesa 2010, in conjunction with CBA bank, to pay 2,435 temporary staff	Migori, Rachuonyo, Nyando	
Yes Youth Can	Setting up village level community youth programs for youth engagement, including National ID registration, bank account registration, micro-enterprise training and support,	Want the entire program to be mobile-money based, working with Safaricom, will use M-Pesa for loan disbursement & repayment	Countrywide	$12M July 2011

	including grants and loans, social media apps			

APPENDIX IV. KENYAN MOBILE MONEY REGULATORY FRAMEWORK

In Kenya, mobile financial services have evolved in a largely undefined regulatory space. The Central Bank of Kenya (CBK) has been informed and watchful, and has provided oversight and deliberate guidance from the very beginning of the industry. The relationship between the CBK and M-Pesa has evolved through willing collaboration and innovation in an entirely new domain in financial services. In this context, the CBK and M-Pesa have addressed emerging challenges in introduction of mobile payments services as well as consumer protection that have attracted international interest and recognition. However, the consumer protection measures that exist are as yet not codified in law or regulation in the industry.

When Safaricom approached the CBK in early 2007, there were no laws governing a mobile money service like M-Pesa, so the CBK issued a "Letter of No Objection," and M-Pesa was launched the following month. The CBK provides guidance to mobile money under Article 4 of the Banking Act, which covers Payment Systems, rather than banks. As such, it is the National Payment Systems Division (NPSD) of the CBK that provides oversight, not the Banking Supervision Department[45]. As a safeguard, however, CBK exercises full supervisory oversight over the trust accounts for mobile financial services providers, which are held at commercial banks. This effectively sequesters the float and protects it against any eventual financial failure of M-Pesa. This also precludes M-Pesa from earning the interest on the float[46].

At the end of 2008, with the huge success of M-Pesa and the growing concern of the Kenyan Bankers Association, the Ministry of Finance asked that the CBK conduct a risk assessment of M-Pesa, which was done and published in the newspapers and Kenya Gazette in early 2009, basically saying that the CBK is satisfied with the risk situation and that they don't consider M-Pesa to be a banking business.

In the last few years, with the introduction of three additional mobile money service providers[47] and the huge growth of the sector, the CBK has chosen to introduce a more formal regulatory framework over the entire branchless banking sector. The actions taken to date include the following:

[45] The NPSD traditionally focuses on the integrity of the IT platforms and service delivery systems, in line with BIS guidelines, rather than consumer protection and risk.
[46] The interest on the float is channeled into a charitable account.
[47] The new mobile money services were approved and supervised under individual Letters of No Objection.

- The Proceeds of Crime & Anti-Money Laundering Act of 2009 was passed, and went into effect July 2010.

- In 2010, the CBK issued "Guidelines on Agent Banking," which outline the rules around who can act as a bank agent (which wasn't allowed previously for non-bank entities). These guidelines were later extended to MFIs and SACCOs. Where banks are involved, should someone (e.g., an NGO) wish to act as a mobile money agent, they will have to adhere to the new guidelines. As of June 2011, the CBK had granted approval to 6 commercial banks to roll out agent banking, and 6,513 agents had been approved[48].

- In late 2010, the MOF and the Consumer Protection Task Force (CPT), in conjunction with CGAP, conducted a study into consumer protection across all financial services in Kenya[49]. Their final report recommendations included: better disclosure with regard to pricing & plain language; dispute resolution mechanisms & third-party recourse; regulations clarifying liability and responsibility for 3rd party agents; and public reporting of performance.
-
- In 2010, the telecoms regulator, CCK, issued its own consumer protection guidelines for the telecommunications sector, which would include mobile money services (although it's not clear how they're meant to be enforced).

- In March 2011, the CBK issued a draft of the Retail Transfer Regulation 2011, commonly referred to as the "e-regs," which is a set of comprehensive regulations for all e-money providers, including mobile money. It will be the main regulatory guideline for the sector, and further defines the players, increases the capitalization requirements for non-bank providers, changes some of the transfer caps, etc.

- Finally, in 2011, the CBK submitted the National Payments System Bill 2011, which will put into law the framework under which all the new regulations will be governed. (This Bill has been in the works for a few years, but opposition from the media sector has prevented it from being put forward. It is expected to pass Parliament this year.) The Bill covers all electronic payment systems and instruments, including the RTGS, online and mobile money payment services, and aims to tighten consumer protections if a mobile or online service provider becomes insolvent.

[48] CBK Annual Report 2010-2011.
[49] FSD Kenya, Consumer Protection Diagnostic Study Kenya, January 2011.

APPENDIX V. DESCRIPTION OF MOBILE MONEY OPERATORS

Company Fact Sheet - Safaricom Ltd

Business Description	Provision of mobile telecommunication services; voice, messaging, data and fixed broadband
Established	April 3, 1997
Employees	2801 employees as at August 23 2011
Mobile Subscribers	17.5M
Head Office	Safaricom House, Waiyaki Way, Westlands P.O Box 46350, Nairobi
Website	**www.safaricom.co.ke**

History

Safaricom, which started as a department of Kenya Posts & Telecommunications Corporation, the former monopoly operator, launched operations in 1993 based on an analogue ETACS network and was upgraded to GSM in 1996 (license awarded in 1999). Until 20 December 2007, the GoK shares were held by Telkom Kenya Limited ("TKL"), which was a state corporation under the Act. Following the Offer and sale of 25% of the issued shares in Safaricom held by the GoK to the public in March 2008, the GoK ceased to have a controlling interest in Safaricom under the State Corporations Act and therefore the provisions of the State Corporations Act shall no longer apply to it.

Description

Safaricom launched M-Pesa on March 6th, 2007, in partnership with Vodafone. It was the first mobile money system in Kenya. In addition to person-to-person transfers, M-Pesa can be used to pay bills, purchase goods, buy airtime, and, with the launch of M-Kesho, move funds to and from an interest-bearing account with Equity Bank.

A couple other mobile money services offered by M-Pesa (but less relevant to the aid and donor world for purposes of this report), are International Money Transfer and the M-Pesa Prepay Safari Card. International Money Transfer is a service made available through Western Union and Safaricom, launched in March 2011, whereby users can receive transfers from abroad, which are then deposited directly to the user's M-Pesa account. Transfer value limits apply, depending on the country of origin where the funds are coming from, but Safaricom's own receipt limits in this case are Ks35,000.

The M-Pesa Prepay Safari Card is a prepaid Visa card, issued by I&M Bank, that needs to be pre-loaded, in Kenya shillings, and can be used at any Visa ATM worldwide or Visa branched merchants. Residual balances can be refunded at any I&M branch.

Number of M-Pesa Customers	14,008,319
Number of Agent Outlets Countrywide	27,988

M-Pesa Tariffs

Transaction Type	Transaction range (KES)		Transaction Fee (KES)
	Min	Max	
Value Movement Transactions			
Deposit Cash	50	70,000	0
Cash transfers to registered users	50	100	10
	101	35,000	30
	35,001	70,000	60
Cash transfers to unregistered users	100	2,500	60
	2,501	5,000	80
	5,001	10,000	120
	10,001	20,000	180
	20,001	35,000	250
Registered User Cash Withdrawal	**50**	**100**	**15**
	101	2,500	25
	2,501	5,000	45
	5,001	10,000	75
	10,001	20,000	145
	20,001	35,000	170
	35,001	50,000	250
	50,001	70,000	300
Unregistered User Cash Withdrawal	100	35,000	0
ATM Withdrawal Charges	200	2,500	30
	2,501	5,000	60
	5,001	10,000	100
	10,001	20,000	175
Buy airtime (for self or other)	20	10,000	0
Information Transaction			
Change PIN	N/A	N/A	20
Show Balance	N/A	N/A	1

Company Fact Sheet - Airtel Kenya Ltd

Business Description	Telecommunications
Established	2010
Mobile Subscribers	3.8M
Head Office	Parkside Towers, Mombasa Road, Nairobi, 00100 Kenya
Website	http://www.africa.airtel.com/kenya/

History

Airtel Kenya Ltd operates as a mobile phone operator in Kenya. It offers various services, including prepaid plans, international roaming, local and international text messages, Internet access, directory enquires, voice mail, and SMS information. Airtel Kenya Ltd was formerly known as Zain Kenya Limited and changed its name in 2010 upon purchase by Bharti Airtel.

Description

Formerly Zain Zap, Airtel Money is the second largest mobile money system in Kenya. Prior to its acquisition, Zain was focused on creating a “cashless society” whereby any number of needs could be met via mobile money. The following services are available on Airtel Money:

- Transfer money from one mobile phone to another mobile phone recipient on demand
- Top up a mobile phone or another customer's mobile phone
- Access and manage bank accounts
- Pay utility bills

Airtel Money Tariffs

Transaction Type	Transaction range (KES)		Transaction Fee (KES)
	Min	Max	
Value Movement Transactions			
Deposit Cash	50	70,000	**0**
Cash transfers to registered users	50	100	5
	101	70,000	25
Cash transfers to unregistered users	101	35,000	25
Registered User Cash Withdrawal	50	100	15
	101	2,500	25
	2,501	5,000	45
	5,001	10,000	75
	10,001	20,000	145
	20,001	35,000	170
	35,001	50,000	250

	50,001	70,000	300
Unregistered User Cash Withdrawal	50	100	15
	101	2,500	25
	2,501	5,000	45
	5,001	10,000	75
	10,001	20,000	145
	20,001	35,000	170
ATM Withdrawal Charges	101	2,500	40
	2,501	5,000	55
	5,001	10,000	85
	10,001	20,000	175
Buy airtime (for self or other)	N/A	N/A	0
Information Transaction			
Change PIN	N/A	N/A	20
Show Balance	N/A	N/A	1
Change Nickname	N/A	N/A	20
Transaction Reports	N/A	N/A	20

Company facts - Telkom Kenya (T/A Orange)

Business Description	Telecommunications
Established	April 1999
Type	Private
Mobile Subscribers	2.1M
Head Office	Teleposta Towers Building Ralph Bunche Road, Telkom Plaza, Nairobi 00100 Kenya
Website	http://www.telkom.co.ke/

History

Telkom Kenya, trading under the Orange brand, was established as a telecommunications operator under the Companies Act in April 1999 and is the only integrated telecommunications solutions provider operating in Kenya.
In December 2007, France Telecom acquired a 51% stake in incumbent Telkom Kenya through its holding company Orange East Africa (OrEA).

In September 2008, Telkom Kenya launched its mobile service, and it is now a fixed, mobile and Internet operator that provides services to business customers and consumers. Orange is the commercial brand used for all mobile and Internet services.

Description

Orange Money launched in late 2010 in association with Equity Bank. Instead of offering the same features as M-Pesa, Airtel Money, or yuCash, Orange opted to create a de facto front-end for Equity Bank accounts, allowing it to exceed regular transaction and m-wallet balance thresholds. In conversations, the Orange Money director stated that they were particularly interested in pursuing opportunities in the mHealth and eHealth sectors.

Orange Tariffs

Transaction Type	Transaction range (KES)		Transaction Fee (KES)
	Min	Max	
Value Movement Transactions			
Deposit Cash	100	100,000	0
Cash transfers to registered users	100	35,000	30
	35,001	50,000	40
	50,001	100,000	50
Cash transfers to unregistered users	100	2,500	70
	2,501	5,000	90
	5,001	10,000	155
	10,001	20,000	305
	20,001	35,000	355
	35,001	50,000	390

	50,001	100,000	450
Registered User Cash Withdrawal	100	2,500	25
	2,501	5,000	45
	5,001	10,000	75
	10,001	20,000	145
	20,001	35,000	170
	35,001	50,000	195
	50,001	100,000	225
Unregistered User Cash Withdrawal	100	100,000	0
ATM Withdrawal Charges	100	2,500	40
	2,501	5,000	60
	5,001	10,000	100
	10,001	40,000	175
Buy airtime (for self or other)	10	10,000	0
Information Transaction			
Change PIN	N/A	N/A	0
Show Balance	N/A	N/A	5
Mini Statement request	N/A	N/A	5
Stock Price Inquiries	N/A	N/A	0
Forex Rates Inquiries	N/A	N/A	0
Invite Rafiki Request	N/A	N/A	0
Bank Transactions			
Transfer to Equity Account	100	35,000	30
	35,001	50,000	40
	50,001	100,000	50
Transfer to Any Bank Account	100	35,000	400
	35,001	50,000	450
	50,001	100,000	500
Transfer from My Equity Account to Orange Money	100	35,000	30
	35,001	50,000	40
	50,001	100,000	50
Full Bank Statement	N/A	N/A	50 per page
Cheque Book Request	N/A	N/A	14.75 per leaf
Stop Card Request	N/A	N/A	0
Stop Cheque Request	N/A	N/A	0

Company Fact sheet - Essar Telecom Kenya Limited (ETKL)

Business Description	Telecommunications
Established	2008
Type	Private
Mobile Subscribers	1.6M
Head Office	Essar House Africa, Brookside Grove Muguga Green Lane Westlands, Nairobi 00100 Kenya
Website	**http://www.yu.co.ke**

History

Essar Telecom Kenya Limited (ETKL) is a unit of India based Essar Group. ETKL launched a mobile service network under the brand "yu" in November 2008 in Kenya.

Description

Essar yuCash launched in December 2009 and is "powered" by Obopay, a mobile money platform and service provider. yuCash offers some standard features such as person-to-person transfer and balance inquiry as well as some unique features like requesting money from another user, adding a short message to a payment, and inviting friends to join. yuCash is also unique insofar as it offers five different front-ends: WAP, SMS, Voice, USSD, and STK.

yuCash Tariffs

Transaction Type	Transaction range (KES)		Transaction Fee (KES)
	Min	Max	
Value Movement Transactions			
Deposit Cash	100	2,500	**0**
	2,501	5,000	
	5,001	10,000	
	10,001	20,000	
	20,001	35,000	
Cash transfers to registered users	100	35,000	0
Registered User Cash Withdrawal	100	2,500	**20**
	2,501	5,000	40
	5,001	10,000	65
	10,001	20,000	130
	20,001	35,000	150
Unregistered User Cash Withdrawal	100	2,500	40
	2,501	5,000	60
	5,001	10,000	125

	10,001	20,000	275
	20,001	35,000	325
Buy airtime (for self or other)	10	10,000	0
Information Transaction			
Change PIN	N/A	N/A	2
Show Balance	N/A	N/A	1
Update Menu	N/A	N/A	0
Request Money	N/A	N/A	0
Invite Friend	N/A	N/A	0
Show History	N/A	N/A	5
Help	N/A	N/A	0

APPENDIX VI. EMERGING MOBILE MONEY "ECOSYSTEM" PLAYERS

Mobile Money Applications	Description	Website
iPay - online mobile money product	**iPay** is an easy-to-use payments processing tool that incorporates **M-Pesa, Airtel Money and yuCash.** The three money transfer systems are packaged into an online payment processing system that will allows payments to be received off a website.	http://www.intrepid.co.ke/i-pay-mobile-transaction-processing.html
PesaPal	A payment platform that enables Kenyans to buy and sell on the Internet using M-Pesa, Zap and Credit Cards.	https://www.pesapal.com/
M-Payer	MPAYER manages Mobile payments where transactions are processed on demand as opposed to scheduled processing. It manages corporate collection accounts (MPESA-Pay Bill and ZAP-Nickname). This results in increased transaction speeds and enhanced accuracy due to direct system integration with organizations financial systems	http://zegetech.com/portal/portfolio/
Paynet Group	PesaPoint will allow a Financial Institution without an existing ATM network to offer an ATM service to its customer base. Financial institutions with an existing ATM network will provide their customers with convenience of cash access in many additional ATM locations, once they join the PesaPoint network.	http://www.pesapoint.co.ke/index.asp
Musoni	Musoni is at the cutting edge of microfinance, enabling loan disbursal and repayment via Safaricom M-Pesa and Airtel Money	http://www.musoni.co.ke/
Lipuka	Lipuka integrates bank & payment channels to enable music downloads, bill payments and info services via WAP. Cellulant is a mobile commerce company that manages, delivers and bills for digital content and commerce services actualized over telecom networks	http://www.cellulant.com/index.html
MOCA	Ex-ZungukaPay, which enables online merchants to accept mobile money payments, Google Checkout & various credit/debit cards. Has open API for integration. Moca enables customers to buy "Moca credits" via mobile money, which can then be used to pay for goods & services on partner websites, e.g., KeleleMobile	http://pay.zunguka.com/
JamboPay	JamboPay is an online payment gateway that allows users to securely make and receive payments through mobile phone over internet. JamboPay allows for mobile payments such as M-Pesa, Airtel Money and YU-CASH, Bank payments, Visa and MasterCard Debit and Credit cards.	https://www.jambopay.com/default.aspx
Kopo Kopo	Kopo Kopo offers a low-cost, subscription-based software platform that enables enterprises to accept all brands of mobile money payments from their customers.	http://www.kopokopo.com
Mobikash	An independent mobile commerce, mobile banking & payment service provider that allows users to manage & perform a wide range of financial transactions from their mobile phone & other channels, e.g., internet, POS, ATMs. Compatible with any mobile phone and can be linked to banks, MFIs, SACCOs & bill issuers. Currently gives Kenyans on any mobile network real-time access to accounts at participating banks, including Post Bank, National Bank	http://www.mobikash.com/index.php?inhalt=home

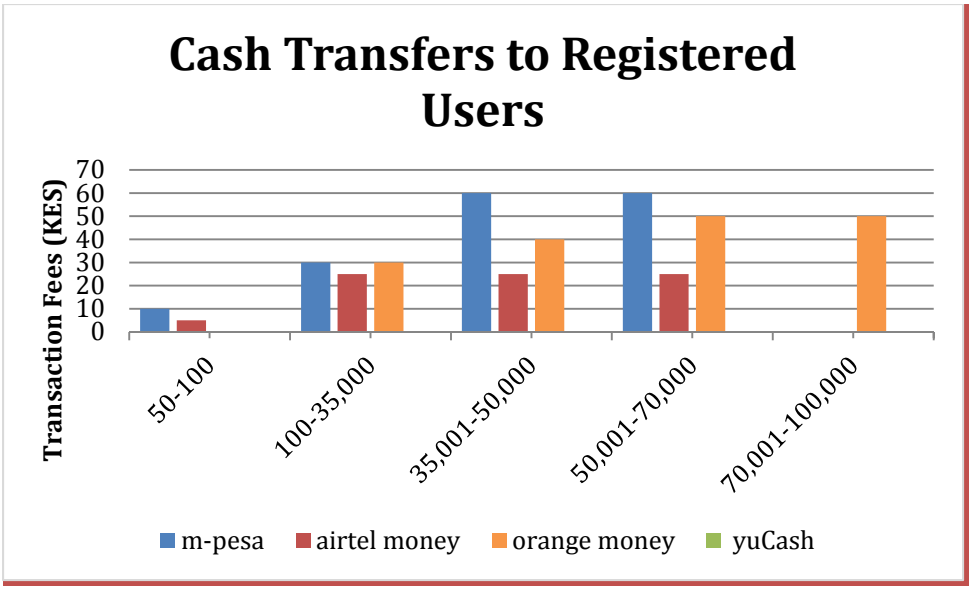
	of Kenya, & Trans National Bank.	
Flexus	Ex PesaPot Holdings; hosted core banking and financial management platform for MFIs, credit unions & community benefit organizations called Kopesha. Also offers a "universal mobile money transfer & payment" service called CaribPay	http://www.flexus-technologies.com/
Jipange KuSave	Initiative of Mobile Ventures Kenya Ltd., a subsidiary of Signal Point Partners, launched in partnership with FSD Kenya & CGAP; aims to extend affordable micro-savings & micro-credit via mobile phone Jipange KuSave is an initiative of Mobile Ventures Kenya Ltd., a subsidiary of Signal Point Partners. Launched as a pilot in 2010 in partnership with FSD Kenya and CGAP, Jipange KuSave aims to extend affordable micro-savings and micro-credit to the 'mwanainchi' (Kiswahili for 'common man') via mobile phones	http://jipangekusave.com/
Tangaza	Managed by Mobile Pay Limited and a network of independent trustees, Tangaza enables both local and international money transfer as well as services like utility bill payment and remote airtime purchase. Tangaza is accessible via USSD and the internet and works across multiple mobile networks	https://www.tangaza321.com/tan/
SPOT Cash	Spotcash is a modern state-of-the-art SMS-based system that enables withdrawal of money from a SACCO member's savings/FOSA account and loading it straight onto their M-Pesa account	https://spotcash.co.ke/spotcash/
PewaHewa	PewaHewa is similar to the iTunes Store insofar as you can browse for musical artists, albums, genres, etc. and purchase songs via mobile money. PewaHewa is powered by iPay. Pewahewa.com is an online music store that seeks to empower local musicians by making their music not only easily accessible for their fans, but also as affordable as possible. By being the first online music store in the region to offer mobile money platforms (Zap and M-Pesa) to its users, Pewahewa.com has pioneered new ground and opened artists up to a whole new world of music distribution	http://www.pewahewa.com/
Kalahari	Often referred to as "the Amazon.com of Africa", Kalahari offers a wide range of online goods and services, which customers can pay for via Safaricom M-Pesa.	http://www.kalahari.com/
Kilimo Salama	Kilimo Salama, Kiswahili for "safe farming", is a crop insurance product offered by the Sygenta Foundation for Sustainable Agriculture. Kilimo Salama enables farmers to pay crop insurance premiums and receipts payouts via Safaricom M-Pesa	http://kilimosalama.wordpress.com/
Elma	Elma is a mobile /online payment gateway for Kenya, done by Craft Silicon in conjunction with some selected banks. The service is almost ready to launch (it is undergoing final testing). Reportedly, it is a mobile application (that you download) that would allow you to shop and make payments (cable TV, power & water etc) from your mobile phone, using your Elma account, which would be linked to your bank account(s). It should also allow you to top up your M-Pesa account from your bank account (but not the other way), pay school fees, make donations (to charity for example) etc	http://www.elma.bz/

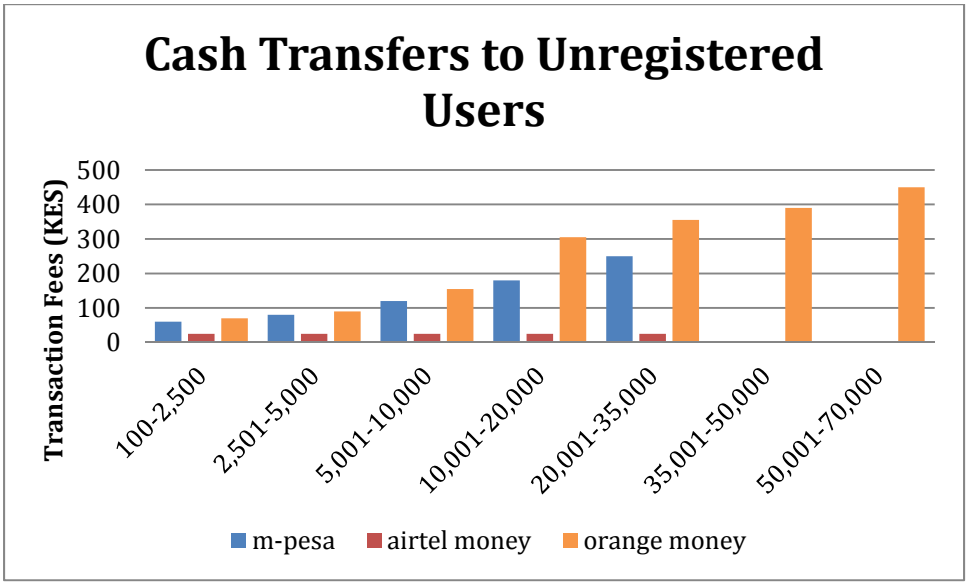
APPENDIX VII. MOBILE MONEY TARIFF COMPARISONS

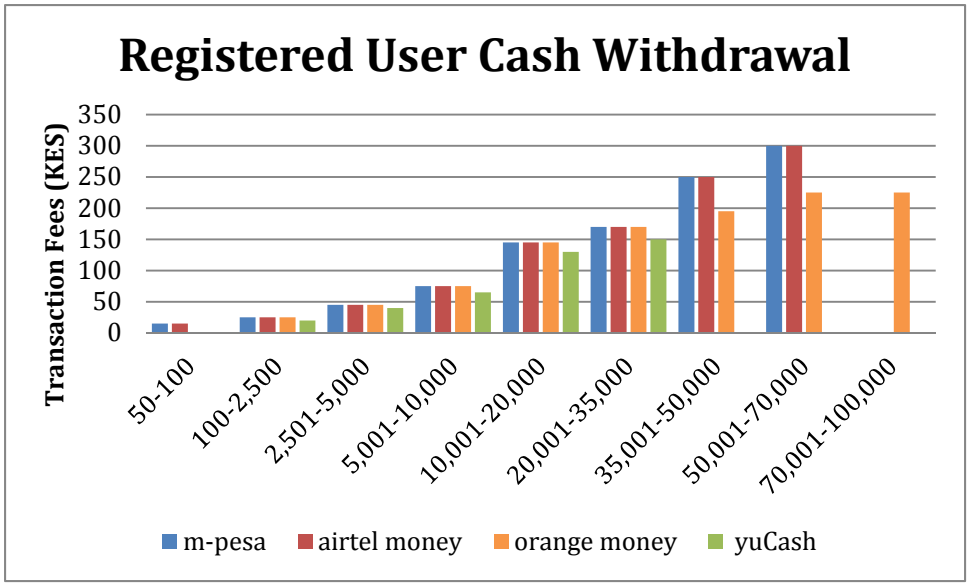
		Transaction Fees			
Value Movement Transactions					
Transaction Type	min-max	**M-Pesa**	**Airtel Money**	**Orange Money**	**yuCash**
Deposit Cash	50-100	0	0	n/a	n/a
	100-35,000	0	0	0	0
	35,001-70,000	0	0	0	n/a
	70,001-100,000	n/a	n/a	0	n/a
Cash Transfers to Registered Users	50-100	10	5	n/a	n/a
	100-35,000	30	25	30	0
	35,001-50,000	60	25	40	n/a
	50,001-70,000	60	25	50	n/a
	70,001-100,000	n/a	n/a	50	n/a
Cash Transfers to Unregistered Users	100-2,500	60	25	70	n/a
	2,501-5,000	80	25	90	n/a
	5,001-10,000	120	25	155	n/a
	10,001-20,000	180	25	305	n/a
	20,001-35,000	250	25	355	n/a
	35,001-50,000	n/a	n/a	390	n/a
	50,001-70,000	n/a	n/a	450	n/a
Registered User Cash Withdrawal	50-100	15	15	n/a	n/a
	100-2,500	25	25	25	20
	2,501-5,000	45	45	45	40
	5,001-10,000	75	75	75	65
	10,001-20,000	145	145	145	130
	20,001-35,000	170	170	170	150
	35,001-50,000	250	250	195	n/a
	50,001-70,000	300	300	225	n/a
	70,001-100,000	n/a	n/a	225	n/a

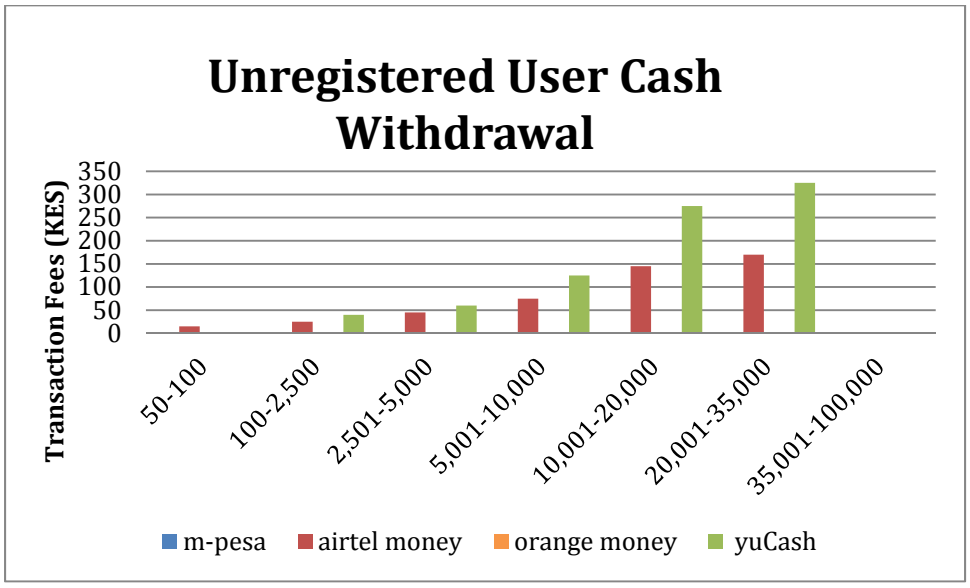
Unregistered User Cash Withdrawal	50-100	n/a	15	n/a	n/a
	100-2,500	0	25	0	40
	2,501-5,000	0	45	0	60
	5,001-10,000	0	75	0	125
	10,001-20,000	0	145	0	275
	20,001-35,000	0	170	0	325
	35,001-100,000	n/a	n/a	0	n/a
ATM Withdrawal					
	100-199	n/a	40	40	n/a
	200-1000	30	40	40	n/a
	1001-2500	30	40	40	n/a
	2501-5000	60	55	60	n/a
	5001-10000	100	85	100	n/a
	10001-20000	175	175	175	n/a
	20001-40000	n/a	n/a	175	n/a
Buy airtime	10-19	n/a	0	n/a	0
	20-10000	0	0	0	0

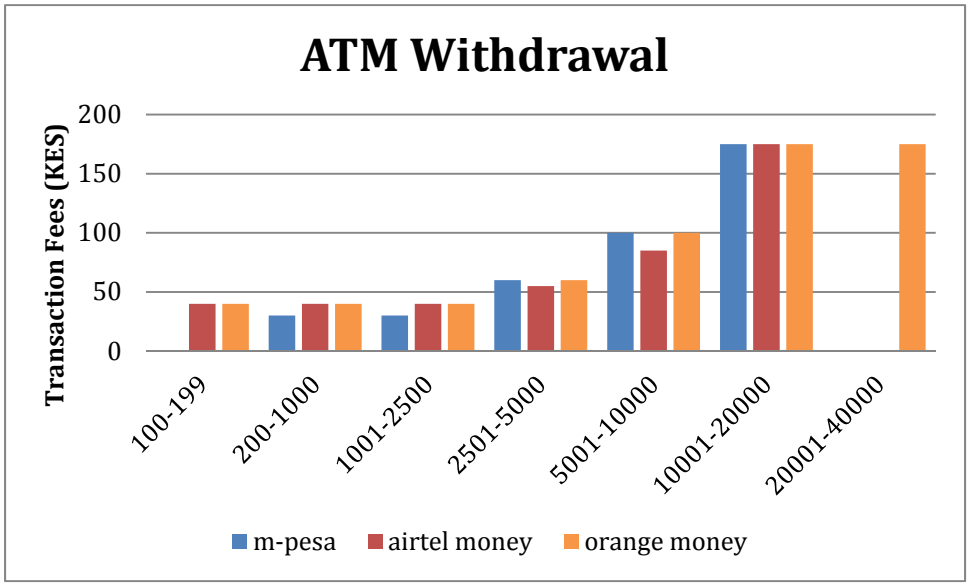
		Transaction Fees			
Information Transactions					
Transaction Type	min-max	**M-Pesa**	**Airtel Money**	**Orange Money**	**yuCash**
Change PIN	n/a	20	20	0	2
Check Balance	n/a	1	1	5	1
Mini Statement Request	n/a	n/a	20	5	n/a
Stock Prices Inquires	n/a	n/a	0	0	n/a
Forex Rates Inquires	n/a	n/a	n/a	0	n/a
Invite Friend Request	n/a	n/a	n/a	0	0
Request Money	n/a	n/a	n/a	n/a	0
Update Menu	n/a	n/a	n/a	n/a	0
Show History	n/a	n/a	n/a	n/a	5
Help	n/a	n/a	n/a	n/a	0
Change Nickname	n/a	n/a	20	0	n/a


Cash Transfers to Registered Users
Transaction Fees (KES)
70
60
50
40
30
20
10
0
50-100
100-35,000
35,001-50,000
50,001-70,000
70,001-100,000
m-pesa
airtel money
orange money
yuCash

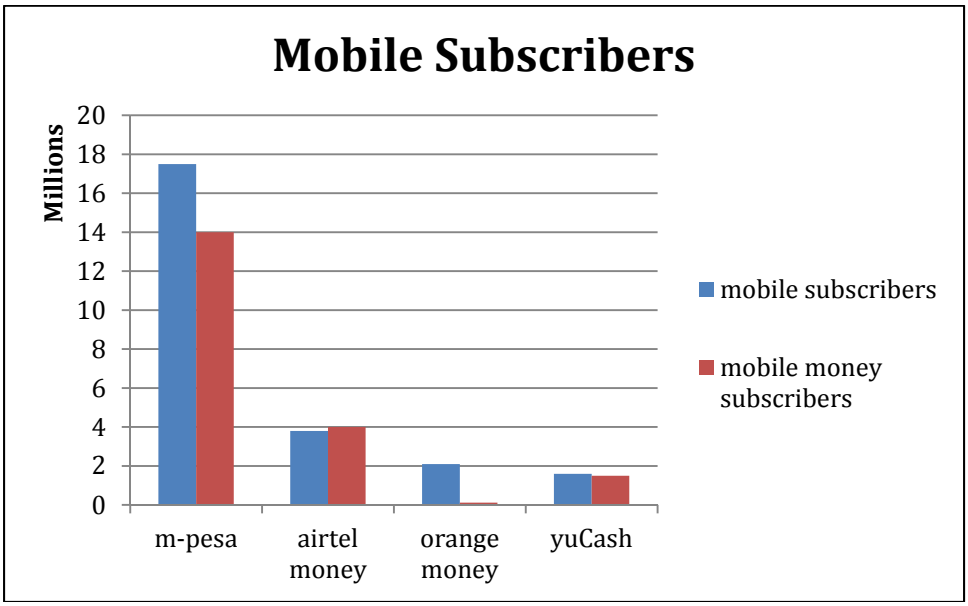

Cash Transfers to Unregistered Users
Transaction Fees (KES)
500
400
300
200
100
0
100-2,500
2,501-5,000
5,001-10,000
10,001-20,000
20,001-35,000
35,001-50,000
50,001-70,000
m-pesa
airtel money
orange money


Registered User Cash Withdrawal
Transaction Fees (KES)
350
300
250
200
150
100
50
0
50-100
100-2,500
2,501-5,000
5,001-10,000
10,001-20,000
20,001-35,000
35,001-50,000
50,001-70,000
70,001-100,000
m-pesa
airtel money
orange money
yuCash

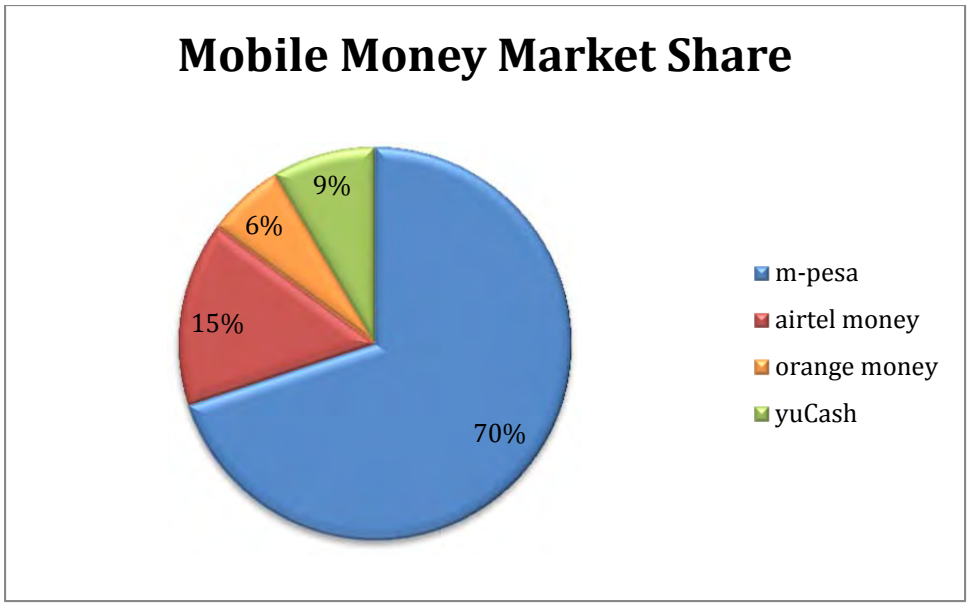

Unregistered User Cash Withdrawal
Transaction Fees (KES)
350
300
250
200
150
100
50
0
50-100
100-2,500
2,501-5,000
5,001-10,000
10,001-20,000
20,001-35,000
35,001-100,000
m-pesa
airtel money
orange money
yuCash


ATM Withdrawal
Transaction Fees (KES)
200
150
100
50
0
100-199
200-1000
1001-2500
2501-5000
5001-10000
10001-20000
20001-40000
m-pesa
airtel money
orange money

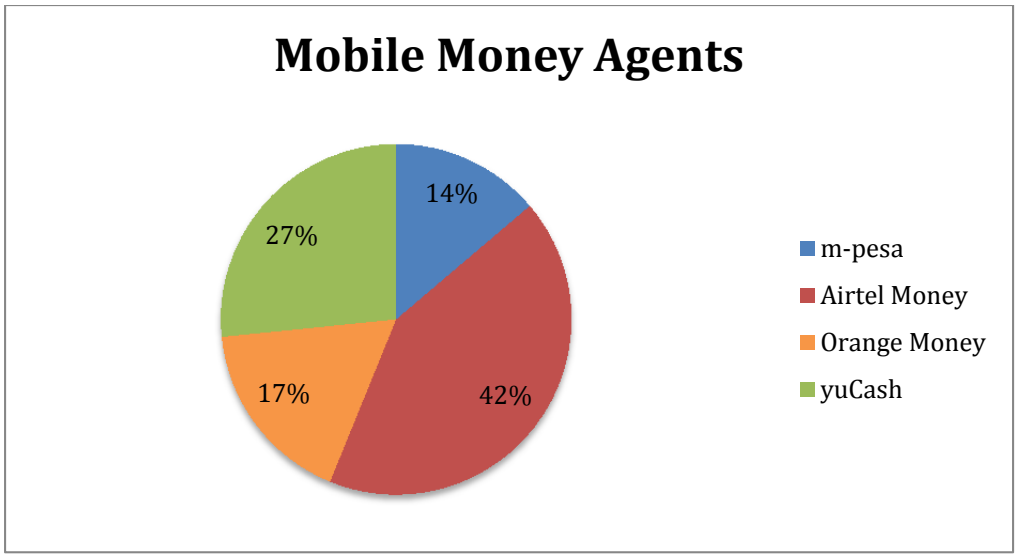
appendix viil. MOBILE MARKET STATISTICS



	Mobile subscribers	Mobile Money subscribers
M-Pesa	17,500,000	14,000,000
Airtel Money	3,800,000	4,000,000
Orange Money	2,100,000	115,000
yuCash	1,600,000	1,500,000



	Mobile Money Market Share (subscribers)
M-Pesa	69.89%
Airtel Money	15.20%
Orange Money	6.37%
yuCash	8.50%



	Mobile Money Agents
M-Pesa	28000
Airtel Money	8600
Orange Money	3500
yuCash	5400