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## **Analysis of Financial Institutions Riding the M-PESA Rails**

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**ABBREVIATIONS**

API	Application Programming Interface
ATM	Automated Teller Machine
CBK	Central Bank of Kenya
DTM	Deposit Taking Microfinance Institution
e-banking	Electronic Banking
FI	Financial Institution
FSD	Financial Sector Deepening
FSP	Financial Service Provider
Ksh.	Kenyan Shillings
m-banking	Mobile Banking
MFI	Microfinance Institution
MNO	Mobile Network Operator
SACCO	Savings And Credit Cooperative
US\$	US Dollars

This paper is based on a Kenya study commissioned by the Bill & Melinda Gates Foundation. *MicroSave* conducted the study in February 2011.

## Executive Summary

M-PESA is probably the best-known mobile money transfer service and one of the few successful business models for such a service anywhere in the world.

**From 2003-present:** Initially sponsored by the U.K.'s Department for International Development (DFID) in 2003–2007, M-PESA (the “M” is for Mobile and “pesa” is Swahili for “money”) is now a part of Safaricom, Kenya's largest mobile operator. Vodafone, still a partial owner of Safaricom, was also crucial to M-PESA's early development. Today, M-PESA has a network of 28,000 agents and serves more than 14 million customers in Kenya.

**M-PESA expansion:** M-PESA is also now also available in Tanzania, Afghanistan, South Africa, and a pilot service has begun in India. Vodafone is looking into expanding the service to the Democratic Republic of the Congo, Lesotho, and Mozambique to better link African markets.

**Partners:** Over 75 financial institutions in Kenya alone, including banks, microfinance groups, insurance and pension plans, and savings & credit cooperatives (SACCOs), currently work with Safaricom to offer mobile banking<sup>1</sup> to their customers. Most of these institutions offer “deposit only” service over the M-PESA platform (referred to as the M-PESA “rails”). Microfinance institutions (MFIs) also allow borrowers to repay loans via M-PESA. Unless the bank or MFI has its own mobile platform, however, two-way transactions are generally not yet possible.

**Benefits include:** Reduced operational costs and increased staff efficiency (for retail banks who lose money on low depositors, these are particularly compelling advantages); greater convenience and personal control for customers.

**Problems to resolve include:** Incompatible software and, thus far, very limited middleware for financial institutions and Safaricom's respective systems; customer data-entry errors, particularly for account numbers; money transfer and reconciliation delays; and lack of transparency on customer fees for M-PESA platform access. (The fee structure is complicated and, because Kenyans are accustomed to paying unusually high fees for all banking and money-transfer services, they are less inclined to demand clear explanations on pricing.)

Several financial institutions are now embarking on their own mobile banking services and agent networks (Equity Bank, Kenya Commercial Bank and Cooperative Bank lead in these efforts). Others, including most large MFIs, are developing or looking into more compatible middleware.

**M-PESA for savings:** M-PESA is still used primarily as a mobile money transfer service, but an increasing number of Kenyans set money aside in their stored value accounts for savings as well. Banks are quick to point out that these savings are not guaranteed and, without a banking license, M-PESA cannot award interest. For the present, however, many M-PESA customers find formal banking services too inaccessible or expensive, and the advantages of saving, transferring money, and, in some cases, paying by phone are clearly preferable.

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<sup>1</sup>In this paper, unless specifically stated, “mobile banking” refers to the process of making financial transactions with the use of a mobile phone handset and does not necessarily refer to interest-bearing banking products.

## Analysis of Financial Institutions Riding the M-PESA Rails

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### 1. Background and Study Objectives

M-PESA has proved to be an extraordinary phenomenon. In order to understand its strengths—and its problems—and how other mobile money services can learn from this model, *MicroSave* designed and conducted a comprehensive, one-month study at the request of the Bill & Melinda Gates Foundation. The principal study objectives:

- a) Explore advantages and disadvantages, including price considerations, for M-PESA customers, M-PESA agents, and financial institutions; and
- b) Assess whether or not the M-PESA platform is contributing to financial inclusion, in terms of both the many financial institutions now participating and the customers themselves.

### 2. Methodology

*MicroSave* first reviewed relevant secondary sources on M-PESA background and technical issues before designing and implementing the primary research which included:

- Focus group discussions (FGDs) and individual interviews with M-PESA users;
- Interviews with senior managers of financial institutions including banks, microfinance institutions offering credit only (MFIs), deposit-taking MFIs (DTMs) which also offer credit, SACCOs (Saving and Credit Cooperatives), and insurance companies.<sup>2</sup>
- Background information via “mystery shopping” to measure service quality and the customer experience at agent points, and in the branches and offices of financial institutions.

The research team met with 56 customers of various financial institutions (personal interviews and FGDs); 12 senior managers, including CEOs and CFOs at eight financial institutions; and 12 M-PESA agents.

### 3. Status of M-PESA in Kenyan Financial Landscape

M-PESA is marketed as a money transfer service, but an estimated 81% of its customers also use it for some form of savings.<sup>3</sup> These numbers are growing, and banks and other financial institutions are more interested than they used to be in selling savings, loans, health and life insurance, pension and investment products to these customers—either via the M-PESA rails or on their own.

Worth noting in any discussion of Kenya is the greater freedom mobile network operators enjoy with regard to banking services. In most regulatory environments, telecoms are not allowed to be financial intermediaries, and in most cases they must partner with banks to offer even mobile money transfer. In an effort to spur financial inclusion for the approximately 80% in Kenya without access to formal banking two years ago, the government further relaxed rules for mobile operators already serving the financial needs of low-income households.<sup>4</sup> Close to half of all 41 million Kenyans live below the poverty line and earn less than US\$1 per day.<sup>5</sup> Only an estimated one-fifth of this population have access to formal banking.<sup>6</sup> M-PESA’s success in reaching a significant percentage of the remaining four-fifths, and offering a safer, easier way for them to transact and save money, is due in part to Kenya’s more flexible regulations.



<sup>2</sup> Please note these do not include Safaricom, who declined to be interviewed for this study.

<sup>3</sup> <http://mobilepaymentmagazine.com/m-pesa-kenya-savings-transfer> reporting on Jack William and Tavneet Suri, “The Economics of M-PESA”, *Massachusetts Institute of Technology*, October 2010.

<sup>4</sup> <http://www.reuters.com/article/2009/05/25/us-kenya-banking-mobile-idUSTRE54O2TQ20090525>

<sup>5</sup> [http://news.bbc.co.uk/2/hi/africa/country\\_profiles/1024563.stm](http://news.bbc.co.uk/2/hi/africa/country_profiles/1024563.stm)

<sup>6</sup> <http://financialaccess.org/node/2968>, <https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>

## 4. Transaction Channels Available to Customers

### 4.1 Traditional and Modern Banking Channels

Most banks and financial institutions in Kenya have few branches, and the larger ones extend their outreach through ATMs and, increasingly, via internet, mobile, and agent banking.

- Bank branches:** The total number of branches of all 43 commercial banks and one mortgage finance company licensed by the Central Bank of Kenya (CBK) was 1,063 as on 31<sup>st</sup> December, 2010.<sup>7</sup> Kenya Commercial Bank has 165 branches, the maximum number for any bank, and only nine others have more than 30 branches. The other 35 banks have 20 or fewer. Banks are currently clustered in central Kenya (Nairobi, Nyanza, and the coastal regions), largely ignoring the Northeast, Rift Valley, and potential markets in other areas. According to one study,<sup>8</sup> branch expansion remains limited in underserved regions due to cost, a dearth of available managers, poor local infrastructure, and high security risks. Kenya also has an estimated 3,500 savings and credit cooperative societies which provide basic savings and credit services.
- ATMs:** Kenya has 1,979 ATMs.<sup>9</sup> Many banks have proprietary ATMs available to their customers and participating banks via Kenswitch<sup>10</sup> (252 ATMs). PesaPoint, an independent network, also offers 120 cash machines.<sup>11</sup> Outreach via these cash points is limited, nevertheless, as only one-fifth of the population have ATM cards and, in the Kenyan economy, automatic teller machines are expensive to set up and maintain (US\$23,000<sup>12</sup> with monthly operating costs of ~US\$1,622).<sup>13</sup>
- Mobile Banking:** Several Kenyan banks have launched their own m-banking services, but customer adoption remains low. These services generally include account information, transfers (within one's own account and to/from others at the same bank), airtime top-up, and bill payment with a limited number of participating merchants and services. Cash-in and cash-out only work at the host bank branches and their ATMs, including the networks in which they participate.
- Internet:** At present, internet penetration in Kenya is generally limited to upper-income households (an estimated 4 million out of a population of 41 million).<sup>14</sup>
- Agents:** Only four banks currently have licenses from the Central Bank of Kenya (CBK) for agent banking. And though these banks had appointed 8,809 agents by end-2010, the new agent networks are apparently off to a slow start. Agents can open new accounts and facilitate credit and debit card applications, but poor cash management (agents often do not have sufficient cash to meet high volume withdrawals) and no paper receipts for mobile-banking transactions discourage potential customers.<sup>15</sup>



### 4.2 Riding on M-PESA Rails

While M-PESA cannot (as yet) open bank accounts or help customers with debit/credit cards, they have a network of over 28,000 agents nationwide who offer cash deposit and withdrawal, money transfer, airtime

<sup>7</sup>Bank Supervision Annual Report, Central Bank of Kenya

<sup>8</sup>[http://www.fsdkenya.org/pdf\\_documents/opportunities/G2P\\_Report\\_Final.pdf](http://www.fsdkenya.org/pdf_documents/opportunities/G2P_Report_Final.pdf)

<sup>9</sup> Figure as on December 2010. These figures exclude 112 ATMs of Pesa Point. Source: Central Bank of Kenya

<sup>10</sup>Kenswitch was set up by a consortium of banks under the CBK to allow shared ATM and POS terminals. [www.kenswitch.com](http://www.kenswitch.com).

<sup>11</sup>PesaPoint, a part of the Paynet group, is an independent ATM network provider [www.pesapoint.co.ke](http://www.pesapoint.co.ke)

<sup>12</sup>The Kenyan Shilling improved and then declined in value against the US\$ in the past six months from Ksh85.8 to US\$1 to Ksh94.8 to US\$1. In general, we note the March 2011 exchange rates except when figures are quoted from other sources or where noted otherwise.

[http://www.xe.com/ict/?basecur=KES&historical=true&month=3&day=15&year=2011&sort\\_by=name&image.x=36&image.y=17](http://www.xe.com/ict/?basecur=KES&historical=true&month=3&day=15&year=2011&sort_by=name&image.x=36&image.y=17)

<sup>13</sup>See footnote above for probable increase in costs. [http://www.fsdkenya.org/pdf\\_documents/opportunities/G2P\\_Report\\_Final.pdf](http://www.fsdkenya.org/pdf_documents/opportunities/G2P_Report_Final.pdf)

<sup>14</sup> <https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>

<sup>15</sup>Daily Nation on the web; Kenya: 8,809 Agents to Offer Bank Services after CBK Approval, 21<sup>st</sup> December, 2011.

[www.allafrica.com/stories/201012220090.html](http://www.allafrica.com/stories/201012220090.html)

purchase, salary disbursements, and bill payments to over 500 businesses (including financial institutions, utilities, schools, clinics, and G2P government payments).

M-PESA also uses a SIM toolkit (STK) interface in which the SIM card initiates commands independently of the handset and the network<sup>16</sup> instead of the USSD number strings many bank-led mobile money transfer systems still prefer. STK's advantages include menus (an easier user interface for most people than number strings) and, some argue, greater levels of security, particularly for e-commerce.<sup>17</sup>

An estimated 75 financial institutions in Kenya are adopting the “If you can't beat them, join them” strategy with regard to M-PESA. Specific reasons to ride the M-PESA rails include:

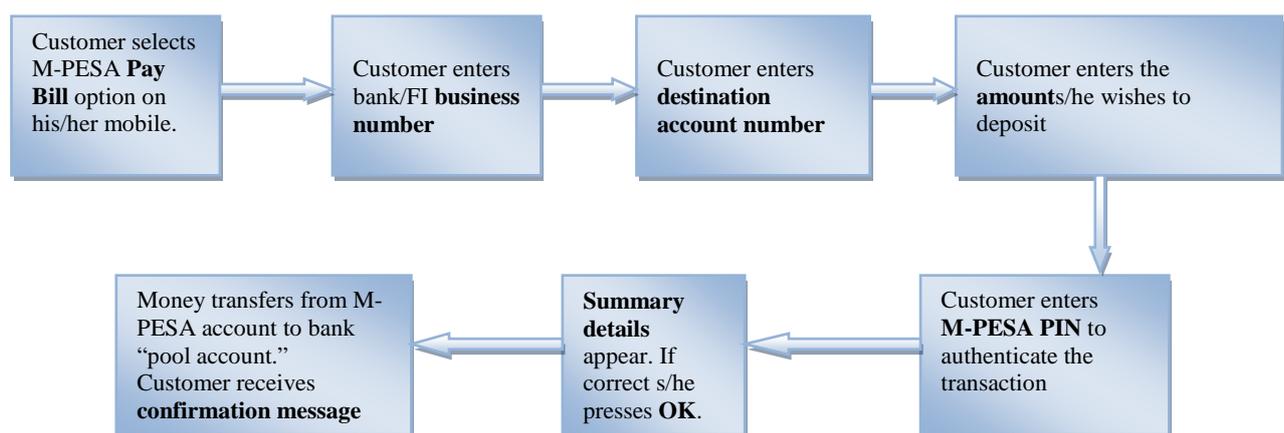
- Cost reduction, especially operational costs of branch banking
- More touch points to increase customer outreach
- More convenience for customers who need flexible banking hours and easy, nearby access.

M-KESHO sponsored by Equity Bank and I&M Bank's Visa Safari card are available exclusively via M-PESA. Changamka, a prepaid health care provider and Musoni, an MFI, both use M-PESA to enable transactions. (For more details, please see sections 5.1 and 5.2.)

Other businesses and institutions are interested as well. M-PESA now has arrangements with approximately 75 banks, MFIs, other financial institutions and 425 other groups who want access to the M-PESA payment and transfer platform, including schools, petrol stations, water and electricity utilities, government agencies, health services, churches, clubs, and charities. M-PESA offers all customers the ability to deposit funds, and an increasing number can also withdraw. Below is a more detailed description of how these transactions currently work.

**One way transactions: from M-PESA to bank/financial institution (deposit only):**

Many financial institutions in Kenya have linked to M-PESA's “pay bill”<sup>18</sup> platform to facilitate customer deposits. (The terminology is confusing here if customers are making a simple deposit via M-PESA to their bank. “Pay bill” can also mean simply “transfer”.) The transaction outlined below moves the money from the customer's M-PESA account to the bank's pool account with M-PESA. M-PESA sends a confirmation message for this part of the transaction. The transfer is not complete, however, until the bank confirms the deposit credit in the customer's account. In the event of non-fulfilment (the money goes astray somewhere en route), M-PESA is not a licensed bank and cannot guarantee the transfer.



<sup>16</sup>For more information and explanation of SIM toolkits, <http://www.sanjayahuja.com/tutorials/SimApplicationToolkit.html>

<sup>17</sup>[http://bladox.com/devel-docs/gen\\_stk.html](http://bladox.com/devel-docs/gen_stk.html)

<sup>18</sup><http://www.safaricom.co.ke/index.php?id=269>

**Two-way transactions: from M-PESA to bank, and from bank to M-PESA (deposit and withdrawal):**

In addition to deposits, bank customers without easy access to a branch or ATM also need to withdraw cash. Many prefer to use M-PESA agents to do so. For withdrawals, the bank must be registered with Safaricom's

Mwangi, a customer at one of Kenya's largest banks, was initially pleased to learn he could deposit money in his account using M-PESA. He transferred Ksh.500 and received instant confirmation that his money had left his M-PESA account—but it took another 24 hours for his bank to confirm the money had arrived in his savings account. This time lapse, during which he was not sure where his money was, made Mwangi sufficiently anxious that he has not used M-PESA since then for banking.

Mwangi and many others do not realise money does not move instantly between accounts, particularly if one account is managed by a mobile operator. Even between two banks, the delay can be up to two days. In the flow outlined above, there are also three opportunities to enter numbers incorrectly (the bank business number, the customer's bank account number, and the transfer amount). One wrong digit and the transfer fails and/or the wrong amount is recorded. M-PESA and banks are working on easier data-input solutions and better ways to manage customer expectations for transfer delays.

B2C bulk payment service and customers must have m-banking installed on their phones. Withdrawals, however, often look and operate differently from the M-PESA interface the customer is used to.<sup>19</sup> And cash is not immediately available due, again, to the incompatible reconciliation between the two platforms. According to both banks and customers, mobile access to cash can take 15 minutes, or up to three hours. (Separately, agents may also have insufficient cash on hand during peak withdrawal times such as remittance cycles.)

**5. M-PESA: Enabling Innovation**

M-PESA offers numerous interesting opportunities to reach the close to 80% in Kenya without access to formal banking.<sup>20</sup> To encourage new bank accounts for the poor and the significant percentage who live above the poverty line but remain unbanked,<sup>21</sup> Kenya's Central Bank altered their regulations last year for bank agents and their retail outlets, allowing them to initiate new accounts and to enable more deposits and withdrawals via M-PESA. For deposits and withdrawals to work more seamlessly for all involved, and to encourage a wider range of commercial interactions, a growing number of banks, MFIs, and others interested in finance and m-commerce are investing in middleware solutions that will expedite exchanges with Safaricom and M-PESA, while remaining compliant with bank, MFI, insurance, and other regulations.<sup>22</sup>

It is also worth noting that Safaricom charges both the financial institutions and their customers fees for this access, even for savings and insurance deposits. These are detailed more specifically in the various products and services outlined in this section, but the average cost per customer to deposit via M-PESA is Ksh.30/US\$0.32.<sup>23</sup> This may not sound like much until we look more closely at Kenya's GDP per capita of Ksh.148,320 which translates to about US\$4.28 a day.<sup>24</sup> The 50% who live below the poverty line have even less than that to work with for mobile money transfers.

<sup>19</sup>For mobile money transfers, banks tend to use USSD strings which are the various numbers (account, amount, PIN, etc.) separated by asterisks. Although many users are already accustomed to this interface--airtime top-up often works with USSD—switching from M-PESA's SIM Toolkit menus to number strings can be disorienting.

<sup>20</sup><https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>,

[http://news.bbc.co.uk/2/hi/africa/country\\_profiles/1024563.stm](http://news.bbc.co.uk/2/hi/africa/country_profiles/1024563.stm)

<sup>21</sup><https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>

<sup>22</sup><http://financialaccess.org/node/2968>, [http://news.bbc.co.uk/2/hi/africa/country\\_profiles/1024563.stm](http://news.bbc.co.uk/2/hi/africa/country_profiles/1024563.stm)

<sup>23</sup>Please see footnote 11.

<sup>24</sup><https://www.cia.gov/library/publications/the-world-factbook/fields/2004.html#>

### 5.1 New Product Innovations

#### M-KESHO

M-KESHO, launched jointly by Equity Bank and Safaricom in 2010, is probably the most publicised financial inclusion initiative running on the M-PESA rails. An Equity savings account with deposit protection and access to credit and insurance, M-KESHO works via the customer's M-PESA mobile account on the phone. (M-KESHO is also a separate item on the M-PESA menu with its own, more consistent user interface than the deposit vs. withdrawal issues described above.) Aimed at a mass market with low-income customers as the particular target, M-KESHO accounts can be opened at any Equity branch and with designated M-PESA agents.

*“I am happy with M-KESHO, It saves me time and the charges are cheap like an ATM. Instead of going to the bank I move my money from my account to M-KESHO and then to M-PESA”.*

- Mr. Ken Muruka, M-KESHO customer.

One of M-KESHO's chief benefits appears to be lower fees for the customer. Depositing money from an M-PESA account into M-KESHO is free (though Equity pays Ksh.10/US\$0.12 to M-PESA for the transaction. Withdrawal at an Equity branch costs the customer Ksh.30/US\$0.32; withdrawal via an M-PESA agent costs Ksh.55 /US 0.65).<sup>25</sup> The bank charge for an M-KESHO withdrawal is Ksh.30/US\$0.32, and Ksh.25/US\$0.29 is the cash withdrawal charge from the M-PESA agent.

*“I moved my money to the M-KESHO account and it came after a few days, and eventually when it was credited, it was less than I had sent; so I gave up”.*

- An M-KESHO customer, explaining reasons for not using his account. .

#### I&M Bank's M-PESA Prepay Safari Card

The card, launched in February 2011 and aimed at upper-income Kenyans, is an international pre-paid VISA card that can be loaded with Kenyan Shillings and used to make purchases worldwide at more than 28 million Visa merchants or withdrawals at 1.7 million ATMs.

The Prepay Safari Card costs Ksh.250/US\$2.90 and is available at any Safaricom outlet or I&M bank branch. Customers activate the card by loading funds via M-PESA's pay bill(deposit) function. The maximum amount permitted on a card is Ksh.500,000/US\$5,882. ATM withdrawal fees vary. I&M and Kenswitch ATMs charge Ksh.125/US\$1.50 per withdrawal. PesaPoint ATMs charge only Ksh.100/US\$ 1.20, but Visa ATMs outside Kenya cost Ksh.250/US\$2.90 per transaction. The card has an annual fee of Ksh.250/US\$2.90.



### 5.2 Business Model Innovation

At least two institutions that have made M-PESA central to their business model.

- **Musoni MFI**

Musoni is “m-usoni”; “m” for mobile plus “usoni”, which means “future” in Swahili. Musoni claims to be the first completely mobile-based MFI. Disbursements and loan repayments are entirely managed via the M-PESA channel using the deposit and withdrawal (B2C) channels. To ensure smoother money transfers, Musoni has built its own middleware to better authenticate loan repayments and also to expedite accurate data uploading to Safaricom for faster disbursements.

Musoni clients pay Ksh.20/US\$0.24 fee to repay their loans. And though M-PESA charges another Ksh.30/US\$0.32 for each money transfer from the client's M-PESA account, Musoni bears Ksh.10 /US\$0.12 of this fee. Disbursement through M-PESA is free for the customer. Musoni picks up the Safaricom Ksh.30/US\$ 0.32 disbursement charge; although the customer pays Ksh.25/US\$0.29 for each withdrawal from an M-PESA agent.

<sup>25</sup>Tariff guides are available at [www.safaricom.co.ke/index.php?id=255](http://www.safaricom.co.ke/index.php?id=255) .

- **Changamka Pre-Paid Health Cards**

Changamka is a start-up that allows Kenyans to save up for future health needs. Changamaka agents sell pre-paid health cards and facilitate customer deposits via an M-PESA transfer. These health cards can be used to pay for services at designated health service providers. Changamka offers a general health card and a maternity card. So far, health savings cards have dominated (almost 70% of sales), but maternity cards enjoy frequent and regular top-ups. More than half of the health-card purchasers buy their card and then fail to make a second deposit.

The Changamka card costs Ksh.500/US\$5.90 and a balance of Ksh.450/US\$5.30 remains for customer use. They can add to this amount—Ksh50/US\$0.59 is the minimum—via Changamka and M-PESA agents for a fee of Ksh10/US\$0.12. Changamka also pays Safaricom Ksh.10 for this service.



Both Musoni and Changamaka enjoy a better level of integration between their respective payment-processing systems and those of Safaricom than any financial institution since both are designed to ride exclusively on the M-PESA rails. However, Safaricom does not provide other assistance such as transactions discounts, a more consistent user interface, or joint sales and marketing as they do for M-KESHO.

### 5.3 Adaptation

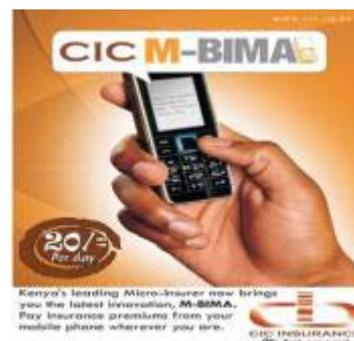
Most financial institutions are succumbing to the need for an M-PESA channel—it is now a verb for P2P payments in Kenya: “please M-PESA me”—but Equity and I&M are the only two banks thus far who have created services that work exclusively with Safaricom. M-PESA subscribers also report using the following:

- **Pesa Pap** (Family Bank).
  - Deposit and loan repayment via M-PESA and Family Bank’s mobile platform
  - Also, withdrawals, M-PESA top up, airtime top up, Pesa Pap balance enquiry, statement request, salary advance loan, PIN change request, etc.
- **Pata Cash** (Postbank).
  - Deposits and withdrawals via M-PESA and Postbank’s mobile platform
  - Account to account transfer
  - Also, balance enquiry, airtime purchase, mini-statements, and alerts for all transactions.
- **KCB Connect** (Kenya Commercial Bank).
  - Money transfer from KCB to KCB account; KCB account to bank account at any other bank; transfer of money from KCB account to M-PESA account
  - Bill payments for KCB credit card and Nairobi Water and Kenya Power and Lighting Company (KPLC)
  - Account notifications: cleared cheque, credit and debit, loan credit, overdrawn account
  - *Kopa Float*: KCB is the only bank providing loans to M-PESA agents specifically to help meet their liquidity requirements.
- **Cooperative Bank Mobile Banking.**
  - Deposit into Cooperative Bank account using M-PESA or top-up of M-PESA account from Cooperative Bank to connect
  - Also, utility bill payments, including Safaricom post-paid accounts and KPLC bills, account balances and mini-statements.



- **CIC (Cooperative Insurance Company) M-Bima.**<sup>26</sup>  
M-Bima, a savings program focused on life and disability risks for low-income customers, also partners with Zap by Zain (Airtel) and Yu-cash by Essar, in addition to M-PESA.

CIC does not charge customers for M-Bima deposits to their CIC accounts via M-PESA, and even bears the Safaricom charges of Ksh.30/US\$0.32 for each transfer. M-Bima is a 12-year insurance plan so normal withdrawals are not possible. So far, use of the M-PESA channel has been limited for this savings-insurance scheme.



Other institutions partnering with Safaricom to allow deposits and withdrawals via M-PESA include Faulu, a deposit-taking microfinance institution (DTM), SMEP DTM, and Zimele, a pension and investments service. Faulu and SMEP clients can repay loans and deposit into their savings accounts via M-PESA. Faulu has launched an M-PESA withdrawal service, while SMEP's is still testing in various markets.

Again, charges for these services are not always clear and restrictions apply for deposit and withdrawal amounts.<sup>27</sup> In theory, SMEP and Zimele do not charge their customers for loan repayment and premiums using M-PESA. Nevertheless, customers pay Ksh.30/US\$0.32 to transfer money from their M-PESA accounts to their respective SMEP and Zimele accounts, plus another Ksh.1 for each text message related to the transfer. (SMEP also pays Safaricom Ksh.30 for each for disbursement via M-PESA's B2C platform. Zimele covers its various costs in part with annual administration fees.)

## 6. Benefits of Riding on M-PESA Rails

### 6.1 Financial Institutions

All financial institutions—from microfinance to large pension schemes—claim they are looking for cost reduction, increased staff efficiency, and greater convenience for customers. These are the benefits that they say matter most and that they look to M-PESA to help them fulfil.

#### Cost Reduction

M-PESA allows financial institutions to reduce costs because bank branches, bank agents, MFIs, insurance agencies, investment and pension plans, and anyone else involved in transferring money spend far less on personnel, security, cash insurance, liquidity management, cheques, cheque clearance, and other expenses. Using Safaricom's B2C service, an MFI has only to deposit a lump sum in their M-PESA corporate account and provide a list of beneficiaries and their individual payments. (The MFI still pays Safaricom for each disbursement, but the cost is minimal compared to any other form of money transfer.) Retail banks also benefit if they can process deposits and loan payments via the M-PESA platform and agents rather than use expensive bank staff in expensive branches with expensive security. Insurance and pension premiums and deposits also work far more efficiently using M-PESA for the same reasons.

#### Saving Paper While Saving Money

SMEP pays Ksh.20/US\$0.24 for each paper cheque and an additional Ksh.18/US\$0.20 for cheque authentication and clearance for a total of Ksh.38/US\$0.40. Not a huge savings over the Ksh.30, SMEP pays Safaricom per disbursement via M-PESA, but with cheques, the DTM also needs two full-time accountants to reconcile its monthly and fortnightly bank statements.

Costs, however, are not limited to transactions alone. Real savings will only occur when the currently often incompatible software systems are fully integrated, float issues are resolved, and reconciliation for all

<sup>26</sup>'Bima' in Swahili, Hindi, and elsewhere means "insurance". "CIC M-Bima Jijenge Savings Product" is a 12-year endowment covering life and disability risks. The customer must save a minimum of Ksh.20/US\$ 0.24 per day or Ksh.140/US\$ 1.65 every week to earn interest and an immediate life cover of Ksh.50,000 /US\$588 that increases to Ksh.100,000 /US\$1,176 by maturity.

<sup>27</sup>Current M-PESA transaction limits are a minimum of Ksh.50/US\$0.59 and a maximum of Ksh.70,000 /US\$824. Until December 2010, these limits were Ksh.100/US\$ 1.20 and Ksh.35,000 /US\$ 412, and most institutions still have these old limits for deposit via M-PESA. Ksh.20/US\$0.24 per day. SMEP, a deposit-taking MFI, still has Ksh.35,000 /US\$ 412 as the maximum transaction limit via M-PESA.

transfers, including those incorrectly routed, work seamlessly for both the financial institution and Safaricom. (Please see “Challenges” in this section for more details on these and other open issues for anyone partnering with M-PESA.)

### Staff Efficiency

Using the M-PESA platform and agents to manage deposits, payments, withdrawals, and other time-consuming procedures allows all financial institutions, especially banks, to be more efficient with staff time and resources. Long queues, congested branches, inattention to customer needs, and complaints are all service issues that M-PESA can help improve. Musoni, the MFI which already uses mobile technology whenever possible, projects increasing the caseload of its field staff to 600 from 350-400 with M-PESA deposits and withdrawals.

In some areas, the bank branch is also an M-PESA service point and members of the bank staff double as M-PESA agents or super-agents. This overlap of responsibilities does not appear to trouble the senior managers *MicroSave* interviewed for this study, nor do bank staff or customers seem to find these combined roles difficult or confusing. Customers simply use the M-PESA agent closest to home or work, and the agent is available for multiple types of transactions. The added time and further congestion this merging would suggest is apparently offset, so far, by a more manageable distribution of customers in most areas.

Retraining staff, including those who also work as M-PESA agents, to focus on sales and new business development as well service is a separate issue, and one that FIs will need to address moving forward.

### Customer Convenience

So far, an improved customer experience does not appear to be one of the M-PESA benefits. Banks and others may reduce costs and improve staff efficiency, but their customers wait too long for transactions to clear, if at all, due to poorly integrated systems. The current user-interfaces (yes, plural) also mean a high incidence of data-entry errors and subsequent delays or failures in the money transfer. (For more details, please see section 4.) Offering local agents to enable money transfer by phone is an important first step, especially for poor people without other alternatives. But even for them, M-PESA has not proved notably more convenient for making loan repayments or receiving disbursements. For many bank customers, including M-KESHO’s, the channel has proved discouraging for deposits, payments, and withdrawals. Safaricom and all the financial service providers who use M-PESA are well aware that the current problems must be resolved and customers must be more satisfied.



### Basic Needs—and Basic Solutions

Published in 2009, *Portfolios of the Poor—How the World’s Poor Live on \$2 a Day*<sup>28</sup> has helped change how we think about the ways poor people manage their money. Most do a better job than might be expected with no reliable income, no access to formal banking services, and expensive and/or insufficient credit. The book outlines their needs as follows:

1. **Managing basics:** transforming irregular income flows into a dependable resource to meet daily needs.
2. **Coping with risk:** preparing for emergencies that can derail families with little in reserve.
3. **Raising lump sums:** accumulating sufficiently large sums of money to take advantage of opportunities

To meet these needs, useful solutions include:

- A combination current/savings account for convenient deposits and withdrawals for managing basics.
- An emergency or general loan to repay quickly and to help cope with risk

<sup>28</sup>Collins, Daryl, Jonathan Morduch, Stuart Rutherford and Orlanda Ruthven, “Portfolios of the Poor – How the World’s Poor Live on \$2 a Day”, Princeton University Press, 2009.

- Recurring, commitment or contractual savings to transform irregular income flow into more dependable cash reserves.
- A larger loan for those who prove they can save successfully over time for business and other investment opportunities.

Finally, these and other financial services need to be secure, trustworthy, convenient, and flexible. Too often, banking services for the poor are in fact poor.

## 6.2 Customers

The biggest benefit M-PESA offers, customers claim, is that they no longer need to travel to a branch or office. They can just put the money into their M-PESA account and transfer it from there. Related benefits include:

- *Lower cost:* No travel expenses, no lost wages.
- *Convenience:* M-PESA agents are now almost everywhere in Kenya. If customers have sufficient balances in their accounts, they simply transfer the necessary amount directly from their account to the bank, MFI, or insurance company awaiting payment (with enough lead time to allow for system delays).
- *Reduced risk:* Carrying cash can be dangerous. A direct transfer or a nearby agent is always safer than a longer trip to a branch.

*“My money is safe when I receive it from my MFI and when I repay the weekly instalment. It is in electronic form and no one can steal it from me”.*

- Mr. Paul, Nairobi NTM client

*“It is a shame to come from Mathare to deposit a little money at the branch, and it is cheaper to do it through your phone”.*

- Mrs. Elizabeth, Mathare resident

## 6.3 M-PESA Agents

M-PESA agents solve the cash-in/cash-out problem. The western world is moving steadily away from cash transactions to automated payrolls, online bill payment, and debit- or credit-card payment for even very small purchases. Developing economies are gradually following suit, but with mobile phones as the principal conduit in many locales. For the present, not enough “source” payments (salaries, remittances, pensions, other government benefits) are fully electronic in these places, including Kenya, so to begin a mobile money transfer, people need to “top up” their M-PESA accounts with regular cash deposits. Many also include a bit extra in these deposits as a form of savings. To pay for many of their daily expenses, they also need take some cash out—although options are increasing for the larger monthly bills they can pay directly via M-PESA (please see section 4.2 for details). M-PESA agents, all 28,000-plus, offer proximity, convenience, and, since their commissions depend on transaction volume, ready service. In general, agents do not earn a commission for registering customers for new services (M-KESHO is an exception).

## 6.4 Safaricom<sup>29</sup>

Safaricom is benefiting in terms of more transactions, which in turn means more subscribers, more phone use, and more revenues. In 2010, M-PESA’s share of Safaricom’s overall revenues was 9.0%, (particularly impressive when measured against the mere 2.1% the previous year). M-PESA’s overall impact on mobile adoption and expanded use, and the company’s worldwide brand recognition is obviously far more significant.

*“Safaricom is playing a bully. It dictates all terms and does not listen to the other partner’s problems”.*

- Senior manager of a large bank in Kenya.

<sup>29</sup>The research team could not meet Safaricom management for their views on other financial institutions’ use of the M-PESA rails.

## 7. Challenges of Riding the M-PESA Rails

### 7.1 Financial Institutions

In interviews, financial institution (FI) managers claim their greatest challenge is reconciling M-PESA deposits in their customer accounts, followed by Safaricom's delays in crediting funds, which result in customers unable to withdraw money from their M-PESA accounts. Reconciliation problems arise due to system errors and poor integration—but also because customers type in their account numbers, or the FI number, incorrectly. Managers allege the delays in making funds available via M-PESA are Safaricom's fault, not theirs.

*“Using the ATM to transact is confidential because you are alone with the machine, but at the agent outlets, it is not confidential; it's very open”.*

*- M-PESA user in Nairobi*

Managers note they are responsible for maintaining their customers' accounts; Safaricom is responsible in turn for managing these customers' M-PESA accounts. Deposits and withdrawals become complicated because FIs cannot deposit into or withdraw directly from a customer's M-PESA account without involving Safaricom. Moreover, the various back-end systems involved in the hand-off from one system to the other often fail. Reasons include:

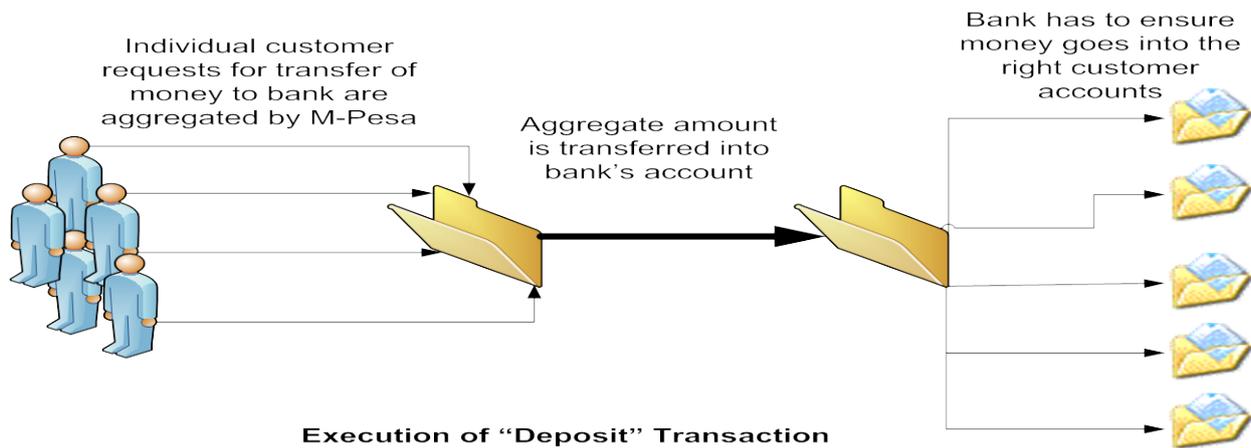
- **Customer error.** As noted above, customers faced with several long number strings, invariably make mistakes.<sup>30</sup> They type in the wrong business number key and their money is automatically transferred to a different “biller” (bank, MFI, insurance company). Or they key in the wrong account number and their money is credited to another customer. In the event that the biller or customer numbers do not exist, the money falls into a limbo “suspense accounts” between M-PESA and the destination biller. Meanwhile, customers cannot access their deposits.
  - **New efforts** are underway to allow customers to link M-PESA “pay bills” numbers to their SIM cards to reduce data-input error,. Nevertheless, customers are responsible for setting up and linking the numbers, and keeping current with new, dormant, or expired numbers. To further complicate matters, they must also replace their existing SIM with an upgrade for Ksh.50/US\$0.55.<sup>31</sup> (Gxi-Globe Cash has introduced a similar effort in the Philippines to address a similar problem.)
- **Processing delays.** These delays are noted above and a problem for both Safaricom and the financial institutions. Both must verify customer input and crosscheck account information, but both are also unwilling to provide interim credit to the customer until final clearance. In addition, heavy traffic can cause delays in systems poorly designed to accommodate the ever-growing volume of users and transactions.
- **Reconciliation.** Both sides must reconcile both sides of the transaction before the deposit or withdrawal is valid. The most complicated reconciliation apparently is a customer deposit from an M-PESA account into a bank or other destination account. FI managers admit there are currently huge sums of money in “suspense accounts”.<sup>32</sup> Each transaction must be manually tracked to identify the initiating customer, verify the transaction, ascertain the right account number, and credit money into that account.



<sup>30</sup>Citibank and AT&T customer research for data-entry on electronic devices, 1984-1992, have further explored George Miller's famous "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information" (Princeton 1956). The more recent conclusions: "Minus Two", preferably minus three for phone or ATM keypad data entry. Mistakes are minimal with four digits and increase markedly for every digit entry above four.

<sup>31</sup>Current exchange rate - please see footnote 11.

<sup>32</sup>Institutions are unwilling or unable to specify amounts in suspense accounts, but they are large, and the research observed that the bigger the institution, the bigger this issue was.



## 7.2 Customers

M-PESA customers face all the same issues FIs do. They, too, complain of delays in crediting their accounts, delays in confirmation, and data-entry errors that result in money ending up in an account that is not their own. In one case, the research team met an MFI borrower whose loan repayment was deposited into a golf club account. It took him three weeks and many visits to the golf club to get the money back into his M-PESA account!

Customers meet with yet another data-entry challenge when different FIs ask for, or allow, different account ID information. Most request the account number, but some offer the option of the national ID or passport numbers. For those with multiple accounts—borrowers have a loan account in addition to savings, DTM customers belong to a group loan security fund in addition to their private accounts—the situation can quickly become complicated, and customers loans end up marked as "Unpaid", if the money goes to the right name but the wrong account.

*"When I went to withdraw the loan amount disbursed to me, I had to visit my (M-PESA) agent three times since he did not have enough cash. And I had to pay withdrawal charges each time. The other option for someone who needs the whole amount urgently is to go to three or four different agents the same day. That also is a costly affair".*

- Mr. Samuel, Nairobi DTM client

*"M-KESHO is a failure—it is a mess. I have never received any news from Safaricom or Equity since I registered. When I went into a branch to ask what was happening, I was told to forget M-KESHO it was too full of problems".*

- Mr. Mbaisi, an M-KESHO client

Small and Micro Enterprise Programme (SMEP), a deposit-taking MFI, argues, however, that the national ID is more familiar and more easily remembered so their customers make fewer errors. More importantly perhaps, SMEP has also created a bridge between its software and Safaricom's to match customer inputs with ID and destination addresses. If the match fails, the customer receives an immediate alert to visit the nearest SMEP branch to complete the transaction. The need to trace mistakes manually from source to incorrect destination disappears. And customers are not left wondering where their money went.

Customers also complain about withdrawals from their bank account via M-PESA. They connect to their bank by phone and set up the transfer...and then they wait...often for several hours for the money to be available in their M-PESA account. Banks claim they act on these transfer requests immediately and the crediting delay is on Safaricom's side. (For Safaricom's assessment, please see section 7.4.)

## 7.3 M-PESA Agents

M-PESA agents remain neutral in this crossfire. They provide cash-in/cash-out services only. Delays and incorrectly directed funds are problems for customers, Safaricom, and financial institutions to sort out separately. They have no access to M-PESA's databases or systems.

*"I have a vague idea that some customers can deposit money in their bank account using M-PESA. But customers seldom ask me and I tell them whatever I know. We (agents) are not directly involved, so we do not know how it works".*

- Mr. John Mutua, M-PESA agent at Guthunguri.

### 7.4 Safaricom

Safaricom's approach is the same as that of any other phone operator: once Safaricom issues a confirmation and the money leaves its system, Safaricom takes no further responsibility for when it arrives, if it arrives, and indeed, where it arrives. If the customer's deposit or payment reaches the wrong institution or the wrong account number or is pending in a suspense account, Safaricom leaves it to the customer and the financial institution to resolve the problem. Banks and most financial institutions are required by law to trace "lost" deposits. And even if not legally obliged to do so, the overwhelming majority perform this service to ensure their customers' trust. Mobile network operators are regulated differently and, in fact, need not assume this responsibility. The issues of trust and security are also less vital to their corporate survival. For withdrawals, the customer sends the first instruction to the FI. Safaricom can, and apparently does, claim delays in crediting the money to the customer's M-PESA account are the institution's fault, and again, not their problem to resolve.<sup>33</sup>

*"I was told to choose between M-PESA and Equity and was threatened with immediate disconnection if I continue dealing with Equity".*

- M-PESA agent in Nairobi.

### 8. Promoting M-PESA links

Equity and Family Bank have heavily promoted M-KESHO and Pesa Pap and their partnership with Safaricom and the M-PESA channel. Other banks and MFIs also use M-PESA links but only promote them lightly. Most are well aware of the challenges outlined above and prefer to wait for better system integration and speedier, more accurate transactions before committing their resources or customers further.

M-KESHO was launched with much fanfare by co-owners Equity Bank and Safaricom in May 2010. Equity Bank is also allowed to promote M-KESHO and registration at M-PESA agent points, something no other financial institution is allowed to do with these outlets. (Agents also earn a commission for new M-KESHO accounts: Ksh.30 to open; another Ksh.30 for the first deposit.)



Family Bank introduced Pesa Pap<sup>34</sup> on a grand scale as well with TV and print ads, brochures, posters and fliers. Bank customers were encouraged to view Pesa Pap not as a "new" or M-PESA product, but as part of a package of mobile-banking solutions.

Others publicised a deposit-only or deposit and withdrawal option via M-PESA, but in most cases the campaigns were brief and only fliers now remain in branches or agent points.

At least one pension product provider tried placing its promotional material at M-PESA agent points, a move that was permitted, but not assisted, by Safaricom. However, most agents refused to accept the promotional material after finding out that the pension service was only an account to account transfer, for which agents receive no commission. A few allowed the placement of the material, but made it clear that they would not sell the product to their customers.



DTMs and MFIs are promoting their M-PESA-based facilities through group meetings and branches.

<sup>33</sup>In order to address this problem, financial institutions could send SMSs confirming the transfer of funds to Safaricom. However, no one the research team met with seems to be doing this, possibly because of the system and cost implications.

<sup>34</sup>TV commercial can be viewed at <http://www.youtube.com/watch?v=6CYFaFjsxhU>

Several institutions with M-PESA agreements are only encouraging their early-adopter customers to subscribe in the hope that the currently flawed system will improve before they commit to on any mass-scale registration. In one case, the research team found no M-PESA promotional material in the branches, and the customer service personnel admitted no one pushes them to sign up customers for the service. Speaking to customers directly at one large bank branch, *MicroSave* discovered the following: nine out of ten customers are not even aware of the M-PESA option; the one who is aware uses internet banking and is quite knowledgeable about technology in general; the bank is specifically reaching out to this more technically advanced, more (in theory) forgiving segment to help trace transactions and provide relevant details of other system failures. Once the systems have stabilised and improved, the bank expects to promote the service widely.

## 9. Charges to Customers

M-PESA related charges are not always well displayed or well advertised by the FIs. Promotional material and advertisements highlight the features of the service, but do not mention what they cost. When the research team tried to find out various charges from customer service numbers, websites, branch personnel, and in meetings with senior managers, the answers all differed. Furthermore, M-PESA charges quoted by customer service desks of financial institutions do not match the M-PESA's customer service quotes for the same institutions.

One finding emerges very clearly, however. For those who wish to save (and not lose money in doing so), it is often more economical to leave their money in their M-PESA account than it is to move the funds into bank savings. Cash-in at an M-PESA agent is free, but transferring money to savings accounts costs different amounts for different institutions. Transferring the money from savings back to M-PESA involves two fees: one for the transfer and another for the agent's cash-out service.

Institution/ Charges	Minimum Charges for Deposit using M-PESA (Ksh/US\$)		Minimum Charges for Withdrawal using M-PESA (Ksh/US\$)		Total for one deposit and one withdrawal (Ksh.100-2,499 or US\$1.20-29.40))
	Into Account by Institution	Transfer by M-PESA	Out from Account by Institution	Cash-out by M- PESA	Total
M-PESA	-----	Free	-----	25/ <b>0.29</b>	25/ <b>0.29</b>
M-KESHO	Free	Free	30/ <b>0.35</b>	25/ <b>0.29</b>	55/ <b>0.65</b>
Family Bank	35/ <b>0.4</b>	20/ <b>0.24</b>	60/ <b>0.71</b>	25/ <b>0.29</b>	145/ <b>1.71</b>
KCB	20*/ <b>0.24</b>	20/ <b>0.24</b>	60/ <b>0.71</b>	25/ <b>0.29</b>	145/ <b>1.71</b>
Postbank	Free	20/ <b>0.24</b>	70/ <b>0.82</b>	25/ <b>0.29</b>	105/ <b>1.24</b>
Faulu DTM	20/ <b>0.24</b>	20/ <b>0.24</b>	50/ <b>0.58</b>	25/ <b>0.29</b>	115/ <b>1.35</b>
SMEP DTM	1/ <b>0.01</b> (for text message)	30/ <b>0.32</b>	Free <sup>35</sup>	25/ <b>0.29</b>	56/ <b>0.66</b>

\* KCB has an additional tier of Ksh.100-1,000/US\$1.20-11.70) for which customer is charged Ksh.20/US\$ 0.24) and between Ksh.1,000 and 2,500/US\$11.70 and 29.40 customer is charged Ksh.30/US\$0.32 for deposits.

Bank savings do offer two substantive benefits worth noting: deposit protection insurance (up to Ksh.100,000/US\$1,176),<sup>36</sup> and interest earned. For basic savings accounts, interest may be quite low, but for recurring savings, fixed-time deposits, and pension funds, the additional amounts may be too important to overlook.

Most senior bank managers agree that urban customers have sufficiently easy access to branches that depositing and withdrawing via M-PESA is much less attractive than it is for their rural counterparts. M-PESA's fees are only acceptable when compared to other costs (travel, wage opportunities lost, risk of carrying cash, etc.). Again, savings account transactions may be viewed differently.

<sup>35</sup>For withdrawal of loans disbursed

<sup>36</sup><http://www.centralbank.go.ke/FAQs/DepositProtectionFAQs.aspx>

Loan repayment is a separate issue as some banks and MFIs offer their borrowers no choice but to pay their instalments via M-PESA. This is an added expense (Ksh.30/US\$0.32 for most FI customers), but most respondents interviewed claim using M-PESA is still notably cheaper than travel and opportunity costs. MFIs such as Musoni and SMEP pay Ksh.10/US\$0.12 per loan transaction to Safaricom, subsidising one-third of their borrowers' M-PESA fees. Although some MFIs are saving on costs using the M-PESA platform, the rate of interest they charge customers is no different from other MFIs who do not use M-PESA.

Banks and other financial institutions are still puzzling how to make money from their M-PESA partnerships. Too many variables remain unresolved including: the on-going cost and maintenance of full system integration with Safaricom; M-PESA agent commissions and incentives for their own products and services; the cost analysis of their own branch and/or ATM expansion vs. their own bank agent expansion vs. their continuing support of the M-PESA channel; and finally, other more compelling reasons—beyond deposits, withdrawals and certain bill payments—for their customers to use the M-PESA channel. Everyone expresses the desire to achieve “scale” and “soon”, but they acknowledge they have more work to do, and more decisions to make, before they are ready to move forward.

### How Important Are Charges?

For this summary, let us imagine a rural M-PESA customer who lives 15 kilometres from his bank branch. If he wishes to make a deposit, his current options include:

- (a) Travel to his bank branch, wait in queues, and deposit over the counter
- (b) Go to an M-PESA agent in his village, deposit the money in his M-PESA account, and transfer the money to his bank account.

Option (a) will cost him the travel time and expenses (~Ksh50/US\$0.59); deposit in the bank branch is free.

Option (b) will cost him nothing for travel or cash deposit with M-PESA agent, but transfer to his bank account is Ksh30/US\$0.32.

Option (b) certainly appears to be the more logical choice. But given our customer's previous experience with delays in credit confirmation from his bank, not to mention the time he typed in the business number incorrectly... he might still choose direct deposit at his bank branch.

For withdrawals, he can:

- (a) Travel to his branch, wait in line, and withdraw from there
- (b) Transfer the money from his bank account to his M-PESA account
- (c) If there is an ATM (and there are comparatively few), he can withdraw the amount here.

Option (a) will cost him travel expenses (~Ksh50/US\$0.59); plus Ksh50-100/US\$0.59-1.18 in withdrawal fees, depending on his bank and the amount he withdraws; plus the risk of theft en route home with cash in hand.

Option (b) will cost Ksh30-70/US\$0.32-0.82 to transfer money from his bank account to his M-PESA account, plus an additional Ksh15/US\$0.18) or more for cash withdrawal, depending on the amount.

Option (c) also costs him between Ksh30-200/US\$0.32-2.35, depending on the fees applicable between his bank and the ATM network. And he may risk losing his cash en route home if the ATM is not in his village.

As with the deposit options available, our customer may make his choice purely based on cost...but more likely, risk and convenience will be the deciding factors.

Interviews with customers indicate they view the charges levied for deposits and withdrawals as “fair”. They value the convenience and accessibility of M-PESA agents for regular bank transactions and even more so for emergency withdrawals; except when emergency withdrawals are delayed. Close to 75% of those we spoke with have been unable to access funds when they most urgently needed them. Many now keep part of their savings in their M-PESA accounts

*“I deposit whatever money I have with me whenever I visit an M-PESA agent, and not only what I have to send home. Therefore most of the time my M-PESA account has some spare amount for emergency needs...It varies, but usually it is Ksh400-500”.*

- M-PESA user interviewed at a Nairobi agent.

if only to have cash on hand when necessary.<sup>37</sup>

Half those interviewed believe M-PESA agents lack empathy and a helpful attitude and they prefer dealing with bank branch staff and bank agents. The other half find both bank employees and M-PESA agents to be equally courteous and helpful.

## 10. Options Available to Financial Institutions

Banks and other financial institutions have several strategic choices right now for mobile banking in general and M-PESA in particular. They include:

### *Better Integration with Safaricom*

Pending reconciliations, especially for clients' deposits, and the swelling suspense accounts are the two most worrisome—and expensive—issues to resolve. Even for those who have developed middleware to help ease these and other difficulties, certain processes are not yet automated and cross-checking with customers is tedious and prone to error. SMEP, Musoni, Faulu, and Changamka appear committed, nevertheless, to improving integration and continuing to work with M-PESA and Safaricom.

### *Development of Independent M-Banking Platform*

Larger institutions have the means and customer base to develop their own m-banking platforms. Equity Bank, Family Bank, Cooperative Bank, Postbank, Kenya Commercial Bank Equity, and Kenya Commercial and Cooperative Bank have already begun. Until now, all these institutions have tied-up with M-PESA to leverage the agent network. M-PESA agents perform local cash-in/cash-out services while money transfers take place either between M-PESA and the institution, or within the institution's own m-banking system Co-Op Bank's M-Karo program for direct payment of school fees is one example.<sup>38</sup> Delays and reconciliation problems arise even within systems that operate semi-independently of Safaricom, so the banks listed above, plus others, are actively exploring new MNO partnerships with Airtel, Orange and Yu (Essar) for more flexibility and improved cooperation. Equity has already launched Orange Money.<sup>39</sup>



### *Wait and See...*

Smaller institutions, particularly SACCOs and MFIs, are still debating whether or not to partner with M-PESA. They already know the changes to their back-end operations and procedures will be complicated and costly. For some, the benefits of mobile money transfer may not be sufficiently compelling yet for their customers or for their own way of doing business. They are gathering information from their field staff, customers, and other institutions, while waiting to see what happens next.

### *Development of Independent Agent Networks*

With the approval of the Central Bank of Kenya and with CBK amended rules for agent appointments, Equity Bank, Kenya Commercial Bank, Cooperative Bank and Kenya Post Office Savings Bank are also developing their own agent networks in rural areas.<sup>40</sup> Targets are often ambitious, but the rewards of full independence from Safaricom provide a strong incentive for these banks.

## 11. Industry Reaction and Possible Future Scenario

Financial institutions are clearly uncomfortable about the success of M-PESA and the challenges they face dealing with Safaricom, but the issues are more complicated than simply a new form of competition.

*“M-PESA came in like a banking competitor but the banks have learnt to live with it...As a banker, M-PESA is killing our profits but as an individual, you need it”.*

- A Nairobi-based banker agent.

<sup>37</sup>More research on this question of *why* customers save in their M-PESA accounts is necessary to determine if it is to avoid charges, keep money on hand for emergencies, or other reasons not uncovered thus far.

<sup>38</sup><http://www.co-opbank.co.ke/Main-Site/Home/Personal-Banking/E-Banking/Innovative-Service-to-Pay-School-Fees>

<sup>39</sup><http://mobilemoneyafrica.com/?cat=134>

<sup>40</sup><http://mobilemoneyafrica.com/?p=3072>

Safaricom would argue that it brought a mobile domestic remittance service to Kenyans without alternatives and built a nationwide agent network to enable “Send money home”. The fact that other bank-led businesses are not enjoying M-PESA’s phenomenal growth is not Safaricom’s problem or responsibility.

However valid this argument may be, it overlooks two key facts. The first is that, by design or by default, a substantial proportion of Kenya’s population now uses M-PESA as an alternative to savings accounts (see below) and that may not be as beneficial to the un- and under-banked as it might appear. M-PESA with its free deposits offers the opportunity for anyone to build up what Stuart Rutherford, founder of SafeSave and well-known microfinance author, would call “useful lump sums”. So, yes, M-PESA is helping to further financial inclusion, but it is also creating what one expert calls “low-equilibrium financial inclusion...poor quality, high cost, and potentially high risk inclusion”.

*“There is likely to be a need to develop more targeted savings products that balance customers’ preference for liquidity and commitment, and which connect into a broader range of financial institutions. This is the journey M-Pesa must be on for it to deliver on its promise of addressing the challenge of financial inclusion in Kenya”.*

- Ignacio Mas and Dan Radcliffe in “Mobile Payments Go Viral: M-PESA in Kenya”.

M-PESA savers do not have access to loans or structured savings such as recurring deposits, insurance, and pension plans. They receive no interest on their M-PESA account balances, no monthly transaction statement, and lack of both privacy and security can be an issue at crowded agent points. And with the standard charge of Ksh30/US\$0.32 for transfer, plus Ksh.25/US\$0.27 for a cash withdrawal, the costs of transacting on the M-PESA platform remain high.<sup>41</sup>

The second fact, easily overlooked, is that M-PESA “savings” are not covered by Central Bank of Kenya (CBK) deposit insurance and the M-PESA balances residing in large MFI and other trust accounts at banks are not insured. If one of these banks fails, the results would be catastrophic for M-PESA users. On a much smaller scale, but no less worrisome, if an M-PESA cash-in deposit is not recorded, users are equally unprotected.

*“My worry about the low-level equilibrium trap is simply that while M-PESA certainly advances inclusion to some degree, if it manages to retain a monopoly position and decides that its optimal pricing on electronic transactions remains at the Ksh.30 price point (or some modest reduction on that) then we’ll fall far short of reaping the real promise of technology here. It will only be when we get into single digit shilling transaction costs that we can really start moving to ‘cash-lite’ where more and more transactions will remain electronic, avoiding the costly interface into and out of cash”.*

- An expert on financial services for the poor.

These drawbacks seem to be deterring no one. The FSD (Financial Sector Deepening) Savings Survey,<sup>42</sup> conducted last autumn, showed that the average M-PESA balance (including savings) had risen to Ksh.1,080/US\$14.40, a five-fold increase over the US\$2.70 recorded by the CBK audit in August 2009.<sup>43</sup> (*MicroSave’s* research with individual customers suggests that average savings balances are approximately Ksh.500 higher than this figure.) On this basis, the aggregate balance for the present customer base of 13.34 million would be approximately US\$155.6 million.<sup>44</sup> With these numbers, M-PESA has attracted more than a normal amount of interest and research papers. Most, including “Community Level Economic Effects of M-PESA in Kenya”,<sup>45</sup> indicate Kenyans are quite happy with their ability to send and receive money, to save for emergencies, and in general, the impact M-PESA has had on their lives.

<sup>41</sup>See Briefing Note # 93 “Innovation and Adaption on the M-PESA Rails”

<sup>42</sup> <http://www.fsdkenya.org>

<sup>43</sup>An earlier report published by Ignacio Mas and Dan Radcliffe suggests that the average balance in M-PESA account was US \$2.70 according to an audit by Central Bank of Kenya in August 2009.

<sup>44</sup>Not all M-PESA users save, each one saves differently, and aggregate balances obviously fluctuate. This figure may be significantly higher, and we have given a conservative estimate here.

<sup>45</sup>Plyler Megan G, Sherri Haas and Geetha Nagarajan; Iris Center, University of Maryland; June 2010

Commercial banks, however, find themselves in a difficult bind. They have announced agreements with Safaricom and offered bank access via M-PESA to their customers. Nevertheless, system integration,<sup>46</sup> reconciliation delays, potential loss of customer savings, suspense accounts, and other M-PESA-related costs and conflicts are significantly more complicated—and expensive—than any of them had bargained for when they signed these deals. Most of course think it is Safaricom’s responsibility to develop and pay for solutions to these problems. Safaricom is aware in turn that competition is increasing; customers understand they have other options, and regulators may be tightening controls. Better system integration may be a relatively painless way to keep its dominant position.



Meanwhile, Kenya’s Central Bank wants lower charges for M-PESA transactions and only permitted mobile transactions limits to double from Ksh.35,000/US\$412 to Ksh.70,000/US\$824<sup>47</sup> in return for price reductions. Safaricom has yet to comply (beyond introducing a marginally lower fee for withdrawals and transfers of Ksh.50-100)<sup>48</sup> in part because any lowering of charges will effect agent remuneration—unless there is a commensurate increase in transaction volume for each agent which is possible but, in the short term, unlikely. Currently, Safaricom is trying hard to discourage its agents from signing agreements with any other MNO or even banks.

Most MFIs remain more hopeful than banks that M-PESA may help reduce costs. The key will be persuading their customers to route their deposits as well as loan payments through M-PESA. Unless Safaricom reduces charges significantly, however, this change seems unlikely. As noted elsewhere, most lower-income clients find it easier, cheaper, and more convenient in emergencies to put aside money in their stored value account than in a DTM or a bank.

Equity Bank and others are creating their own delivery channels and setting up agent networks with a focus on rural locations. No institution wants to depend solely on Safaricom. The past few months have witnessed a spate of agreements between banks, MFIs, SACCOs, insurance companies and other network operators.

*“Later we realised that the customers who came to use M-PESA at our shop were avoiding queuing at the bank. So our M-PESA agency is like a small bank”.*

- M-PESA agent in Nairobi.

Overall, mobile subscriptions continue to grow (12% in the first half of 2011), and though Safaricom remains the dominant provider, its market share dropped 6% from 75.9% to 69.9% in the same six-month period, according to the Communications Commission of Kenya (CCK). Airtel, by contrast, gained from 13.5% to 15.2%, while Orange gained 4.5% of market share from 4.0% to stand at 8.5%.<sup>49</sup> These gains are also due to a price war on call and message rates and competitors’ heavy promotional campaigns, but Safaricom will have to work harder in the coming quarters to retain market share and keep customers from moving to other operators. Meanwhile, the CCK is introducing number portability that allows customers to take their mobile number with them when they switch subscriptions which may further increase Safaricom defections.

The challenge now is to keep the most positive aspects of M-PESA—easier mobile-to-mobile money transfer, easier ways to put money aside—and expand them to include more competitors and faster, cheaper,

*“M-PESA itself does not constitute financial inclusion. But it does give us glimpses of a commercially sound, affordable, and effective way to offer financial services to all”.*

- Ignacio Mas and Dan Radcliffe (*ibid*).

<sup>46</sup> See Briefing Note # 94 “Riding the M-PESA Rails: Advantages & Disadvantages”

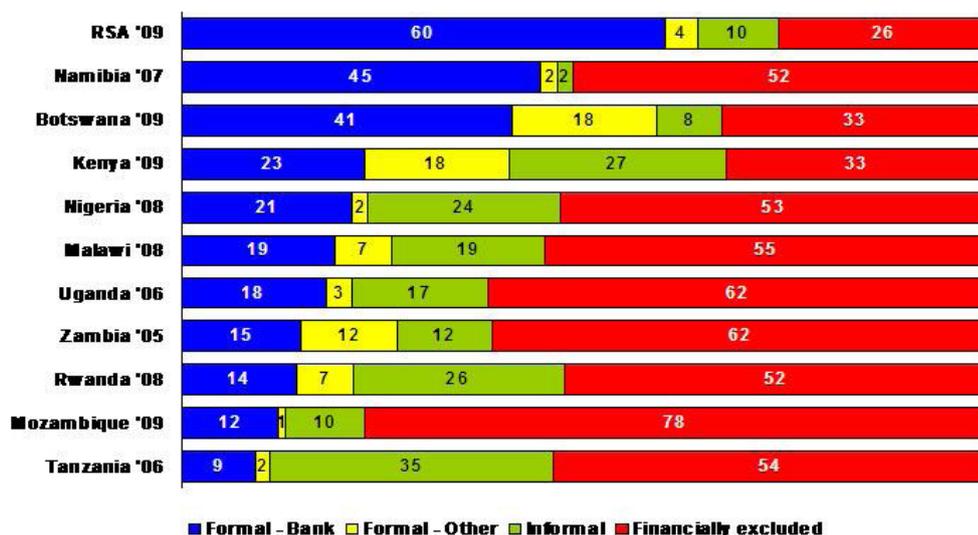
<sup>47</sup> “CBK Unhappy with Mobile Money Transfer Charges”, The Standard Online Edition, January, 31, 2011 – however CBK governor Njuguna Ndung’u has subsequently suggested that reduced prices were not a “condition” but rather an expressed wish.

<sup>48</sup> See <http://www.safaricom.co.ke/index.php?id=255>

<sup>49</sup> <http://www.techmtaa.com/2011/06/06/kenya-mobile-and-internet-subscribers-grows-as-safaricom-market-share-declines/>

more secure access to a wide range of banking and financial services.

Safaricom can of course be forgiven for desiring a somewhat less expansive future—and for applauding the CBK’s decision to support their “proprietary rights” and not mandate inter-operability with other mobile networks. (In early March 2011, Airtel proposed to the Kenyan Prime Minister a merged money transfer platform that would allow Safaricom rivals to send cash between networks, while also using the M-PESA network to extend their outreach.)<sup>50</sup>



#### Financial Inclusion, as Measured by FinScope across Africa

Some observers see this Central Bank decision as further entrenchment of Safaricom’s monopoly position—and discouraging news for more affordable and effective financial inclusion for Kenya. Others are not so pessimistic and see only interesting opportunities in a country where the hardest part has already happened. Everyone, rich and poor alike, now think about money in a different way here. The next innovation may not even include mobile phones. However, unlike other parts of the world, Kenyans may be far more receptive and potentially ready to adopt whatever comes next.

<sup>50</sup>*The East African*, March, 14, 2011. For more information supporting Safaricom’s case, please also see *The Business Daily*, March 22nd, 2010