CONFERENCE REPORT

GLOBAL ECONOMIC GOVERNANCE PROGRAMME

# CONSOLIDATING AFRICA'S MOBILE BANKING REVOLUTION

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## Foreword


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The financial services sector in Africa is changing rapidly, and the mobile banking revolution is a key driver of this change. Mobile financial services have advanced in waves, beginning with payments and transfers before progressing into virtual savings, followed by credit, cross border transfers and more recently into new services such as insurance. M-Pesa, Kenya's digital financial service is the best known, and similar initiatives are underway in many other African countries, including Tanzania, Rwanda, South Africa, Nigeria, Ghana and Cote d'Ivoire.

Although there have been pockets of success, it has been difficult to replicate the mobile banking revolution. Many contend that adopting 'enabling regulation' is central for the expansion and consolidation of Africa's digital services revolution, but there is a lack of clarity on what precisely this entails and how it can be pursued. Important questions remain about what regulatory approaches facilitate the take-off and deepening of digital financial services; the best ways to support cross-border payments; how to navigate the politics of regulatory design and implementation; and the impact of expanding digital financial services on financial stability and monetary policy.

To explore these issues, we convened a high-level roundtable in February 2016 to critically assess and share experiences of regulating digital financial services in Africa. Participants included senior government regulators, market participants, academics, and selected officials from multilateral organisations. Comparing experiences across countries, we discussed the main challenges and opportunities for regulators, distilled practical lessons and specified areas for future policy-relevant research.

*Seven themes emerged particularly strongly from our discussions:*

First, Africa is at the forefront of the mobile banking revolution, spearheaded by the mobile phone technological platform for financial services. Participants highlighted that African countries are leading not just in terms of numbers but also in innovation and, as a result the continent has become a focal point for global knowledge sharing.

Second, it can be challenging to regulate mobile money services under existing regulatory frameworks. Participants noted the importance of 'unbundling' the financial services offered by mobile money providers and to regulate these services according to the level of risk they pose. As many participants argued, mobile money is a very narrow form of banking and hence should have less stringent regulatory requirements than full banking.

Third, in regulating new technologies, regulation constantly needs to evolve with the market. Key to this is maintaining a dialogue with the industry being regulated. As the mobile money market develops, regulatory attention should shift from facilitating investment and the growth of the market to ensuring appropriate competition, to increase the channels of financial services access and lower unit costs.


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Fourth, new forms of financial services have led to a rapid growth in customer data, making it vital that appropriate security measures are in place to protect this data, and ensure customers are aware of their rights over their data and how any data can be used. Operators must increasingly think about how to best store data against hackers.

Fifth, there is a pressing need for regulators to work together to enable cross-border payments and harmonize regulation. Regulation across borders and putting in place the appropriate monitoring tools to prevent fraud, money laundering and counter terrorism is challenging and discrepancies in regulatory approaches and requirements impede cross-border payments.

Sixth, mobile money can be of benefit to monetary policy by strengthening the interest rate pass-through. This will only be achieved if mobile money brings people into the formal financial sector in a way that makes them sensitive to interest rates.

Finally, mobile money has the potential to bring substantial benefits to many sectors of society especially governments and the poor. This however depends on whether mobile payments increase financial inclusion, formality and thereby the taxation base, and if governments are able to harness mobile money for transfers and thereby reduce leakages and liquidity management issues. There is need for collaborative research to address the gap in evidence linking financial inclusion to poverty-reduction and growth outcomes.

This report presents an overview of the discussions and also brings together the short though-pieces submitted by participants prior to the meeting.

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## PLEASE NOTE

**All memos represent the authors' personal views, and should not be interpreted as representing the policy or views of their respective organisations.**

# SUMMARY REPORT

## Rachel Cassidy, Emma Riley, Njuguna Ndung'u, Zainab Usman and Emily Jones

This report summarises the key lessons learnt from the mobile banking revolution to date, and the divergent perspectives expressed by participants about the future. We consider these under six important themes:

1 Understanding the frontier of mobile banking in Africa

2 Getting the legal framework right

3 Regulating new technologies

4 Facilitating cross-border payments

5 Navigating the political economy of regulation

6 Assessing outcomes – Financial inclusion, financial stability and a better environment for monetary policy

Finally we highlight recommendations for future research.

## UNDERSTANDING THE FRONTIER OF MOBILE BANKING IN AFRICA

### AFRICA AT THE FOREFRONT

There is clear and widespread recognition that Africa is at the forefront of the mobile banking revolution; this has been spearheaded by the success of mobile phone technological platform for financial services. M-Pesa's[4] impressive success story has set the standard in mobile money, and nine out of ten of the leading mobile money companies are in Africa. East Africa has the deepest penetration of mobile money globally, and as Oumar Tatam Ly outlines in his memo, parts of West Africa are achieving substantial coverage. Moreover, participants highlighted that Africa is leading not just in terms of numbers but in innovation and therefore in knowledge-sharing: for example Kenya is currently hosting a program supported by the Alliance for Financial Inclusion (AFI) to share learning, with participating institutions mostly regulators and commercial banks coming predominantly from Latin America.

### A FAST-MOVING TECHNOLOGICAL FRONTIER

The technological frontier is moving rapidly and in a variety of directions. As Isaac Awuondo sets out in his memo, there is a proliferation of technology-driven trends in the distribution of digital financial services, such as use of biometrics to enhance security and use of customers' digital footprints as a source of credit referencing for MFIs. Such initiatives have the potential to foster broader and more secure and efficient financial inclusion. In terms of guiding the current and research and development agenda, discussion highlighted the need to maintain a customer-centred approach, and indeed to focus on providing flexible tools rather than products. As an example of how third parties might support innovation, incubators have been launched in Kenya and Tanzania and some of their start-ups have already been successful.

Technological advances are likely to carry with them significant implications for regulation: for example, KYC procedures based on postcodes and paper-based systems may soon become out-dated given that companies increasingly have easy access to customers' GPS and biometric data. The need for regulation to set a level playing field remains paramount; but there were suggestions that regulators should seek to engage in dialogue with technology companies who may be able to demonstrate more efficient methods of application and compliance. Furthermore, regulators will likely need to adapt and be given real-time tools to connect to the data generated by mobile money systems.

### A STEADY MARCH TOWARDS THE "FOURTH GENERATION"?

Progress on the frontier of new markets has been much more varied. Looking beyond the success stories such as Kenya and Tanzania, the percentage of adults who are actively using a digital account in Malawi is 8%, Zambia 2%, Benin 2.5%, and Senegal 11% respectively. Understanding why country experiences have been so divergent even within the African continent remains an important question for researchers, policy drivers and practitioners alike.

Admittedly the rates of OTC usage of mobile money services is often much higher in such countries – for example in Senegal it stands at 49%. However, participants voiced concerns that OTC usage does not represent meaningful financial inclusion; and moreover that systems which begin with high levels of OTC may not progress to the second-, third- and fourth- generations of mobile money as set out in Governor Ndung'u's memo. Indeed, certain countries in East Asia and South Asia may provide evidence of a potential stall-out risk: for example the Philippines, which looked to be on the verge of a mobile revolution ten years ago but has not progressed as strongly as many had hoped. On the other hand, other participants voiced optimism that the shift away from cash and towards mobile money will be even more rapid in the next decade than the last, at least for the countries where consumers have already become comfortable with mobile payment technologies.

### PARTNERING FOR SUCCESS

Many of the existing challenges could be addressed by new and strengthened partnerships, as Oumar Tatam Ly points out in his memo regarding the case of West Africa. Partnerships between telcos and banks have been key to Kenya's progression past the "first-generation" of mobile money: when M-Pesa was launched in Kenya only one bank took an interest, whereas today all 43 commercial banks and microfinance banks embrace M-Pesa. Moreover, cooperation between telcos and central banks is of particularly crucial importance.

4 M-Pesa is an electronic money transfer product that enables users to store value on their mobile phone or mobile account in the form of electronic currency that can be used for multiple purposes including transfers to other users, payments for goods and services, and conversion to and from cash.

Finally, there is huge potential impact of governments themselves becoming mobile money customers, with many local and national governments now making government payments through mobile transfer in a bid to improve transparency and reduce corruption.

## GETTING THE LEGAL FRAMEWORK RIGHT

### THE ROLE OF THE REGULATOR

Participants concluded that an important role for the regulator is to support the market as it innovates. Regulation will always run behind the market, and there was general agreement that while it is not the role of the regulator to design services, the regulator can play an important role in sharing its views and enabling the market. For regulation to be effective the regulator must have a clear idea of the market failure it is trying to correct and a clear policy objective, whether this be stability, efficiency or financial inclusion. Keeping this objective at the forefront can help to find the right path when it comes to new developments in the market. A key principal for regulation is to keep it simple.

Claire Alexandre sets out in her memo the two approaches regulators can take when a new market develops: 1) start with a few tools monitoring the market and just enough basic regulation, as the example in Kenya demonstrates or 2) quickly put a comprehensive system of regulation in place with a clear deadline, as in the case of the Democratic Republic of Congo. To help the growth of the market, regulation constantly needs to evolve with the market and maintain a dialogue with the industry being regulated.

### TELCO- OR BANK-LED?

In most countries telcos and banks are regulated differently and separately by different regulators and many participants noted that it can be a struggle to fit mobile money into existing regulatory frameworks. Concerns were raised that as the range of services offers expands, mobile money is pushed into the domain of traditional banking. Equally, traditional banking is embracing mobile phone based products and services. If different regulators are going to be responsible for telcos and banks then, as Njuguna Ndung'u points out in his contribution, regulators must ensure they talk to each other and cooperate to prevent regulatory arbitrage.

Kennedy Komba asked in his brief whether central bank should restrict mobile financial services to be led only by banks. Most regulatory frameworks provide less stringent requirements for telcos than for banks. This question was discussed at length and many participants shared the view that it is important to scrutinise the specific services being provided by telcos and banks, and to regulate accordingly. While mobile operators have moved into money transfers and payments settlements, they don't lend money. It is this service that differentiates the risks associated with banks and telcos and which necessitates more stringent regulation. Many participants agreed that what doesn't work is to subject telcos to the full force of bank regulation.

### UNBUNDLING SERVICES

One aspect that has made mobile money so successful is the ability to selectively offer some financial services traditionally associated with banks. Klein and Mayer (2011)[5] have argued that banking services can be unbundled into payments and liquidity distribution outside the banking system and as Kenya case shows it is safe, transparent, efficient and effective. This is not the same as mobile operators acting as banks, since different financial services can be separated out from each other and regulated separately. As many participants argued, mobile money is a very narrow form of banking and hence should have less stringent regulatory requirements than full banking. In order for customers to get the most value for their money, mobile operators should not be just custodians of the funds but able to choose whether to offer additional services which can be regulated individually. As Kate Meagher argues in her memo, mobile banking is an exercise in the unforeseen and so regulation must look to future potential services and not just the current products available.

As mobile operators move into more services, regulators should resist the tendency to classify all services as banking services and hold up the entire industry but instead regulate each service in proportion to its level of risk. As mobile operators have unbundled financial services so regulators can unbundle regulation. A proposed split is between payments and other services. As Janine Aron discusses in her brief, custodianship can be separated from payments, with telco customer's money held in banks on their behalf and protected by banking regulation, whereas payments are regulated separately and less stringently. This applies equally to banks moving into telco operations, for example as Equity Bank in Kenya has, becoming mobile virtual network operators (MVNOs).

If risk is the primary concern for customer's money, then the money on customer's account could be invested in government bonds, but it is not clear why the risk for customer's money in a mobile money account is greater than the customer putting their money directly in a bank account. The customer also loses out from being able to earn as high a productive return on their money. A key requirement for customers of mobile money account is also liquidity and being able to access their money immediately whenever they want. This reduces the ability to lock up mobile money in government bonds. There is always a trade-off between earning a productive return and risk. From a macro perspective, since mobile money is still a tiny part of total bank deposits there is currently not much of a loss if these funds aren't intermediated into the economy.

### PROTECTING AGAINST RISK

As Jonathan Greenacre sets out in his memo, to protect against insolvency risk there must be strong laws and

5 Michael Klein, Colin Mayer (2011) Mobile Banking and Financial Inclusion: The Regulatory Lessons, World Bank, WPS 5664

protection for customers' funds. While Trust arrangements are generally imposed under common law systems there must be similar protections in civil law countries. Regulators must ensure deposit protection schemes apply to the individual mobile accounts not to the mobile operator's account as a whole, through using pass-through laws. Regulators must also ensure a sufficient amount of deposit insurance. An alternative to Trust accounts is to link individual mobile money accounts to money held in a bank under that person's name and ring-fence this money, ensuring the amount of money on the mobile money accounts is reconciled with cash in the bank on a daily basis. Oumar Tatum Ly describes in his brief recent reforms by the Central Bank of West African States to put in place these enhanced user protections.

As Janine Aron argues in her memo, under Trust arrangements it must be made clear who the beneficiaries of the trust are and how the income generated by the account is used. Regulators need to decide who the trustees are held accountable to. They must also decide who holds information about the identity of the account. Is this only the mobile operator or also the bank or trustees? Multiple people holding this information reduces the risk it could be lost in the event of insolvency.

Regulators must ensure mobile money account users' funds are protected from a run on the bank or insolvency of the mobile operator. Some participants argued that regulators might also want to put in place an accelerated insolvency regime for telcos, similar to that for banks. Telco's could consider spreading deposits across banks or investing in safer assets like government bonds if minimising risk is the primary concern.

### ENSURING COMPETITION

As Njuguna Ndung'u argues in his contribution, as the mobile money market develops, attention should shift from facilitating investment and the growth of the market to ensuring appropriate competition, to increase the channels of financial services access and lower unit costs. Oumar Tatum Ly points out in his memo that a lack of competition among providers has resulted in high costs of services and insufficient access for some populations. Lack of interoperability between mobile phone financial services and between those services and banks, and the slow involvement of banks in new financial services, is also restraining growth of the market. Regulators must consider how much they mandate certain aspects of the mobile financial services eco-system to address this.

To facilitate competition the regulators must ensure they are listening to all the voices in the market, not just the dominant provider. This includes customers but also other parties like mobile money agents and the banks mobile money providers partner with. Regulators should ensure clear communication of complaints and settling disputes procedures for consumers and make sure customers and agents are aware of their rights.

### THE IMPORTANCE OF AGENTS

In countries where mobile money has grown quickly, the agent network was a key factor of success. Janine Aron argues that a successful regulation model is where the provider is liable for the actions of the agents executed on its behalf. Regulators can then comfortably leave the recruitment and training of agents to providers. However the regulator must ensure oversight of all agents in situations where non-exclusivity in agent networks laws have been passed, to ensure someone is responsible for the overall picture. The massive agents' network in Kenya and Tanzania has pushed the financial inclusion to a higher ladder by increasing the financial access touch points. This is still the frontier of the success stories in Africa today.

## REGULATING NEW TECHNOLOGIES

### THE STAGES OF DEVELOPMENT OF MOBILE FINANCIAL SERVICES

Mobile financial services have advanced in waves, beginning with payments and transfers before progressing into virtual savings, followed by credit, cross border transfers and more recently into new services such as insurance. As David Porteous outlines in his memo, regulators must strike a balance between openness and certainty, allowing new products to be launched but also providing assurances against arbitrary retrospective action. Countries have had success with putting in place regulation both before and after product launch, with Kenya leading the way in introducing regulation only after a need for it has been shown. This is regulatory flexibility or in Kenyan description "The Test and Learn" approach.

The government can play a key role as a catalyst for new services. For example, the government in Kenya and several other countries has adopted the payment of salaries or social protection schemes via mobile money. The government can therefore lead the way in the provision and uptake of new services.

### NEW REGULATION FOR NEW SERVICES

As Guilherme Silva sets out in his brief, there are two particular concerns with the introduction of new financial services: 1) security and fraud and 2) data protection and privacy. New mobile financial services could both decrease or increase fraud and the discussion was split with people holding different views. Mobile services can reduce fraud by tracking money flows but increase it by creating new ways for criminals to send money. KYC regulation must be set at a level which deters fraud without also stifling the growth of new services. Janine Aron discusses in her memo how many countries have found a solution by creating tiered KYC requirements and other tools which simplify required customer due diligence. Guilherme Silva discusses in his contribution how new services can also provide alternative ways to satisfy KYC requirements, such as through using biometric data, cross checking with other digital databases and using technology to uncover suspicious behaviour. As both telcos and banks

move into areas traditionally the preserve of the other, regulators should ensure there is no duplication of KYC requirements, which stifle innovation and competition.

Growth in customer data also requires operators to have the appropriate security measures in place to protect this data and ensure customers are aware of their rights over their data and how any data can be used. This should go beyond just consent to adoption of a privacy management process. Operators must increasingly think about how to best store data against hackers. Service operators can use data to offer customers better or individually tailored services. Sharing this data with partners can often be difficult or impossible, limiting the development of services, so a balance between customer's benefit and privacy must be found. Regulators should work with financial technology firms, who often welcome the level playing field that regulation brings.

### MAKING USE OF DATA

As Janine Aron points out in her memo, regulators should start taking advantage of the huge volume of real time data (Big Data Sets) rather than historic aggregate, so they can be more forward looking instead of backwards looking. Telecoms data can be used to create predictive indicators such as expenditure aggregates and other new tools for central banks to track economic activity.

### LEARNING FROM OTHERS

Regulators should learn from the experiences of other countries with mobile financial services, not re-invent the wheel. As Robin Newnham argues in his memo, developing a peer-learning platform for digital financial services development in Africa will act as a catalyst for inclusive growth. An example of such shared learning is the Joint Learning Programs organised by the Central Bank of Kenya for seven Latin American Countries. In addition, the African mobile phone financial services policy initiative (AMPI) can develop further shared learning programs on guidelines and regulations for electronic payments and settlements including cross-border payments.

## FACILITATING CROSS-BORDER PAYMENTS

### THE COMPLEXITY OF CROSS-BORDER PAYMENTS

Markets are increasingly integrated and so there is a growing need to send money from one country to another. The participants agreed that regulators must work together to enable cross-border payments and harmonize regulation. There is much more complexity in regulation across borders and it is challenging to put in place the appropriate monitoring tools to prevent fraud, money laundering and to counter terrorism. Much legislation is still being developed and matters are further complicated by differences in approval process and regulatory requirements of different central banks. Regulators can differ over their settlement requirement, domestic and international KYC requirements and transaction balance limits. As Isaac Awuondo argues in his memo, the enabling regulatory environment is still lacking in the vast majority of mobile money markets.

Remittance corridors are a good place to start in facilitating mobile money payments across borders. M-Pesa transfers between Kenya and the UK, Tigo transfers between Tanzania and Rwanda and Orange money international transfer service between Burkina Faso and Cote d'Ivoire show how mobile money operators can provide cross border remittances when the environment is right. The private sector has done a great deal to enable cross border payments but there is only so much it can do without the regulators also getting involved. A participant argued that interoperability is not holding back operators, but regulation is. What regulators should ensure is that systems are capable of interoperability ex post.

### THE IMPORTANCE OF REMITTANCES

Remittances have become an increasing source of funds for developing countries so it is vital to enable this through keeping fees low. The G8 have adopted targets to reduce the costs of remittances to 5%, however the latest World Bank data shows fees are still 7.5% on average with sub-Saharan Africa the most expensive place to send remittances to with fees average 9.5%. Allowing mobile money payments across borders can help lower fees by increasing competition.

Janine Aron discusses in her memo that if anything the costs and rules have been getting stricter recently with some countries such as Somalia unable to comply with AML/CFT (Anti-money Laundering/Counter the Funding of Terrorism) guidance and so being locked out of commercial bank remittance channels. Some banks after the financial crisis have also withdrawn from African markets and refocused on their domestic markets. This gives a larger role for mobile money services if they can find ways to guarantee safe, traceable and secure transmission of remittances and to prevent those not complying from taking payments.

## NAVIGATING THE POLITICAL ECONOMY OF REGULATION

### A BROAD SPECTRUM OF POTENTIAL WINNERS

Emerging from the discussion was a clear sense that mobile money has the potential to bring substantial benefits to many sectors of society. Perhaps the biggest potential winners may in fact be governments, if mobile payments increase formality and thereby eventually the taxation base, and if governments are able to harness mobile money for transfers and thereby reduce leakages and liquidity management issues. Central banks are also likely to benefit from decreased costs of currency management and increased pass-through of interest rates (see section 6).

Of course, another important set of potential winners is the poorest sectors of society. Whilst the jury may be out on the full magnitude of the potential benefits of financial inclusion (see also section 6), there may be more straightforward indirect benefits arising from use of mobile money for government payments. For example, work by the Gates Foundation is exploring how the poor could benefit from use

of mobile money to deliver and target agricultural subsidies. Small entrepreneurs may also benefit from mobile payment technologies, and mobile-based access to credit.

### MOBILE MONEY REVOLUTIONISING GOVERNMENT PAYMENTS

Digitizing government payrolls has the potential to be a significant developmental and disruptive change. Research in Andhra Pradesh funded by the Gates Foundation found that mobile payments reduced leakage by a phenomenal amount through reducing the number of "ghost workers", and moreover increased wage after reservation wages rose in response to more efficient receipt of government payments. However, there was recognition that mobile money is not a panacea and that ultimately digital technology cannot substitute for changing incentives and behaviours. Moreover, the aforementioned research also showed that completely eliminating rents from the system can naturally provoke resistance from certain tiers of the administration, and indeed some African countries have also experienced significant backlash from officials and parliament in introducing digitised payments. A key solution proposed was the active engagement of politicians and civil servants as a government migrates to digital payments.

Transparency and active engagement were also cited as key to building cooperation and coordination for the broader mobile money agenda within a country. For example, Tanzania has made notable progress by calling together all public and private stakeholders who work on financial inclusion within the country, to draft a financial inclusion framework with clear targets, budget and measurement framework. The Tanzanian government has thereby harnessed existing initiatives rather than setting out a raft of new measures, and has publicised the targets and achievements to encourage key stakeholders to champion mobile money.

### THE GRASS ROOTS AS A KEY CONSTITUENCY

Despite being key potential beneficiaries of mobile money, bottom-of-the-pyramid stakeholders have rarely vocalised strong demands for reform. More research could shed light on why this is the case, for example if poorer segments of society lack information on the benefits of mobile money, and therefore if those advocating reform could provide information as a way of building support amongst this constituency. Either way, it was agreed that regulators and politicians alike should be mindful that, once mobile money has been introduced, bottom-of-the-pyramid stakeholders can become a key constituency of support in resisting legislative roll-back.

### CENTRAL BANKS AS KEY AGENTS OF DEVELOPMENT

If there is one story of institutional change in Africa in the last 25 years that really stands out, it is arguably the rise of central banks as benign brokers. Participants observed that central banks have the potential to act as key development agents when building mobile money markets. In particular, independent central banks or the central banks of monetary unions, who have the ability to act in a more technocratic manner and without pressure from potentially non-reformist ministries. The case of DRC was highlighted as an example of a central-bank-led introduction of mobile money: the central bank of DRC put together a coalition of banks and MMOs to draft legislation; and also asked that everything be done within the ambitious timeframe of ten months, which successfully focussed efforts. To further support central banks in their efforts, various participants proposed the idea of regional dialogue, drawing on the example of Latin America, which has seen constructive conversations between central banks on issues surrounding mobile banking.

## ASSESSING OUTCOMES – MONETARY POLICY, FINANCIAL STABILITY AND FINANCIAL INCLUSION

### MOBILE MONEY STRENGTHENING MONETARY POLICY?

The transmission mechanism of monetary policy across Africa remains fairly weak, and a clear potential benefit of mobile money is that it may strengthen interest rate pass-through. However, discussion emphasised that most if this effect will only be achieved if mobile money brings people into the formal financial sector in a way that makes them sensitive to interest rates. This requires more advanced mobile products, such as the loans provided by Kenya's M-Shwari or the opening of interest-bearing savings accounts, rather than simple use of mobile money as a substitute for cash. There are other potential channels for mobile money to benefit monetary policy aside from increasing the interest-sensitivity of individual consumers: in countries where mobile deposits are stored in escrow accounts this should theoretically raise the savings-to-GDP ratio, which should increase the potency of monetary policy; and any impact of mobile money on the velocity of money and the monetary multiplier should also strengthen monetary policy. However, evidence of these effects so far is minimal.

### FINANCIAL INCLUSION AND THE CONTINUED ROLE OF INFORMALITY?

Many participants agreed that the main criterion against which mobile banking should be judged is whether it brings people into the formal sector. This ultimately requires consumers going beyond simple OTC usage, and thus concerns were expressed that the biggest growth in recent years has been precisely in OTC usage rather than the opening of small accounts. Alternatively, a more nuanced viewpoint set out by Robin Newnham in his memo is that mobile money could be a good first step in getting marginalised individuals (especially women) into the financial system, and then later graduating them to more sophisticated and comprehensive products. Either way, there were suggestions to create a regulatory environment which encourages leaving money in the system rather than simple cash-in-cash-out behaviour.

As a counterweight, other participants expressed scepticism that mobile money would or should provide a one-way route into the formal financial system. They instead advocated the need for a better understanding of the interaction between

mobile money and informal financial arrangements, including small ROSCA-type institutions but also large transfer networks. As Kate Meagher articulates in her memo, evidence suggests that many people are actually using mobile money to make informal arrangements more efficient, for example by continuing to save in ROSCAs but using mobile money to make the transactions. Furthermore, there is evidence that people value the social interaction aspect of conducting financial services through informal groups, thus individualised digital connection may never be a complete substitute for informal financial activities. The conclusion is that mobile phone financial services will continue providing efficient services to both formal and informal markets. It is the appropriate set of incentives and structural reforms that will tilt markets participants to formal financial services and to formal markets in general. But we should not expect or come to the conclusion that participating in the mobile phone financial services network will lead to formality of financial services in the first generation, but perhaps in the subsequent generations of secondary market developments and incentive frameworks.

## AN AGENDA FOR FUTURE RESEARCH

### FINANCIAL INCLUSION AS A MEANS TO DEVELOPMENT, RATHER THAN DEVELOPMENT ITSELF

Thoughtful and granular studies of the impact of digitized government payments have already begun to take place, such as the aforementioned work supported by the Gates Foundation. Initiatives such as the FinScope survey also have clearly established the link between mobile money and financial inclusion, and have been very well received. However, it was generally agreed there is a paucity of evidence linking this financial inclusion to ultimate poverty outcomes such as nutrition and consumption smoothing, and to growth outcomes such as investment and commerce. Addressing this gap will require thoughtful collaboration between researchers, governments and companies, and a willingness to adopt techniques such as randomised rollout of mobile money coverage and products.

### A COOPERATIVE APPROACH TO "BIG DATA"

Another potential area for fruitful collaboration between researchers and practitioners is that of sharing so-called "big data". As Janine Aron sets out in her memo, new access to terabytes of administrative data from multiple mobile phone and mobile money operators, across multiple countries, promises a data revolution that may spawn a possible research revolution. There were suggestions to create a forum through the Blavatnik School of Government, in order to link central banks, practitioners and researchers and enable the sharing and aggregation of such data.

DINNER KEYNOTE ADDRESS

# Reflections on Pursuing "Entrepreneurial" Regulation in Kenya

**Njuguna Ndung'u**

Visiting Fellow of Practice, Blavatnik School of Government

First, let me start by thanking everyone who has come to this High Level Roundtable Seminar on Consolidating Africa's Mobile Banking Revolution at the Blavatnik School of Government. I am thrilled and at the same time excited to be here. I am here trying to develop a case study on M-Pesa and that is why I have been asked to talk about my Reflections on "Entrepreneurial" Regulation in Kenya. Prof Ngaire Woods, in her one of the genius advisory discussions, advised me that if I do not protect time now and develop the case study on M-Pesa, it will never be developed. That is why BSG is protecting my time to develop this case study and it explains why I am here.

It is difficult to imagine that a regulator can be described as "entrepreneurial". There are several attributes of an entrepreneur, but for purposes of this speech, let me just focus on risk taking. The regulator is supposed to contain risk and also to ensure that risk is mitigated at all levels. So he cannot be the one to take risks. But perhaps given the Kenya's M-Pesa story, that starts with some measure of courage from the product development, to the rolling out, regulatory flexibility was required and perhaps that is risk-taking. Some few issues can be listed:

- Initially the product was developed from the simple idea that since Kenyans were trading with prepaid airtime; this could be used as a form of loan repayments for Faulu Kenya, a microfinance institution, if the Safaricom could aggregate the airtime and convert into cash; that was the initial project.
- But then the communication law in 2006 recognized electronic units of money – so allows the product development to take a different turn.
- The regulator sees the benefit of the product in the market and then sanctions its pilot in the market.
- There was an implicit understanding that the regulator cannot stifle innovations in the market – I came to realize that was my own thinking.
- But it is not the totality of the market that was innovating, the rest of the market was hostile, the political economy too difficult to overcome and
- The legal framework was not yet ready to be tested.

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Given the above then the title can adequately reflect the goings on in Kenya between 2006-2007 before the results vindicated this courageous development. In many descriptions it was described as **"Test and Learn"** Approach for CBK.

Second, to put all the above together, let me start from four different influential angles that shaped my thinking by the time I became Governor of the Central bank of Kenya on March 3rd, 2007.

1 The Ministry of Information and Communication; Dr. Bitange Demo, the PS explained to me how the innovative M-Pesa was as a product and how it had evolved from the pre-paid airtime product a payments solution and why he thought it should be allowed space in Kenya and the CBK should provide leadership and courage to drive the market. The CBK had become a block to the market development.

2 The Kenyan banks, mostly the large and microfinance based, had developed the technology to manage micro accounts and had lowered the barriers to entry significantly. So M-Pesa would kill the base of microfinance banking, that is their technology for managing micro accounts – the sim card would be competing with the micro savers/depositors. I argued that M-Pesa would provide a better and efficient technology to manage these micro accounts without expanding their branch networks. In addition, I advised that they would earn ledger fees 24/7.

3 The Multinational banks in Kenya: They warned of a massive bank failure in Kenya. This massive failure would be driven by liquidity crisis. Liquidity would move from all the banks to the bank holding the trust account for M-Pesa. Second, they warned that I would not be in a position to control money supply, the M-Pesa platform was issuing money! My response was quick and sharp: First, M-Pesa Agents were just like shopkeepers exchanging electronic units of money with cash and no effect on the quantum of money supply. Second that crises would emanate from their customers being forced to make two trips, one to the bank to withdraw cash and the other to M-Pesa agent to convert cash into electronic units of money and load into the sim card.

4 Internally at the CBK, my Deputy Governor warned that I will be witnessing a banking crisis just like in the 1980s and 1990s but this time triggered by the Governor refusing to heed to advice. I argued that this would support financial inclusion in the country but not a recipe for a crisis.

All these four examples have one thing in common, Risk Taking. The first one argues that it is risk worth taking, the other three argue it is a risk not worth taking, it would destroy the market –but one could see the fear and conflict of interest lines. These examples shaped my thinking and my resolve.

Third, let me dwell on what has been my position/reaction or considered view: I needed to study the required market developments; to accept and preach that market innovations would drive market developments. To block these innovations would stifle the market, but above all the regulator must be in control along the following lines:

- To understand the innovations and their implications in the market
- Have some foresight as to where the innovations would take the market
- Able to use the rules as laid out and apply appropriate incentives/penalties if needed
- Able to defend the market when political economy threatens to scatter the game

In March 2007 when M-Pesa was rolled out I adopted the line *"that the mobile phone technological platform would develop to provide a menu of financial services and lead to a successful financial inclusion model for Kenya"*.

Perhaps we can parade where we are now:

1 M-Pesa was successful in driving the basics of the payments system almost from scratch – it became an entry point for those excluded from the financial system.

2 It developed further through an endogenous demand into a virtual savings platform – no need for a trip to the bank to save or withdraw!

3 Further developments and innovations in the market – a supplier of short term credit – assessed and priced purely on historical data on savings and transactions – another revolution coming to change the collateral technology in use in Kenya. Other financial subsectors like Insurance, Pension and Capital markets have found the platform useful to roll out products. Even the government of Kenya has used M-Pesa to target the old and physically disadvantaged is a social protection program.

4 Cross-border and international remittances via the same mobile phone platform.

So a full menu of banking services is being provided at the comfort of our homes just by the mobile phone.

Finally, what results can vindicate this "Regulatory Entrepreneurship" Approach?

1 Commercial banks, MFBs and even SACOs and other financial sector operators – insurance and Pensions are all integrated with the mobile phone technological platform – lowered transactions costs for financial services

2 Payments and settlement infrastructure has developed that is efficient and effective.

3 All Banks can now manage micro accounts and make profits – large deposits have provided Kenyan banks capacity to grow

4 Kenyan banks have become strong and some have covered the EAC market and rolled out the same products.

5 Endogenous demand from the market to complete the financial infrastructure – more importantly institutions to protect the market: Deposit insurance; Credit Reference Bureaus (CRBs), Consumer protection, competition law, financial literacy, Finacial Reporting Centre (FRC) for AML/CFT regime; National Payments System (NPS) and Remittances guidelines that have turned most Hawala in Kenya into formal money transfer and remittances units.

6 Finally, a better environment for monetary policy and to achieve financial sector growth and development.

I thank you all for listening to me and I do hope the case study will be completed to support the insights I have provided tonight.

# Consolidating Africa's Mobile Banking Revolution

**Njuguna Ndung'u**

Visiting Fellow of Practice, Blavatnik School of Government

## WHERE IS THE FRONTIER OF MOBILE PHONE BASED BANKING REVOLUTION?

Financial inclusion has been shaped and supported by the developments in the mobile phone based technological platform for financial services. In the Alliance for Financial Inclusion (AFI) Network, covering Africa, Asia and Latin America, for example, support through the Digital Financial Services (DFS) working group has not only shaped the policy, the required guidelines but also the regulatory capacity. In a very dynamic and evolving way, the Digital Financial Services in Kenya, Tanzania and other countries in the region have been able to roll out a menu of financial services and products that have captured the market and raised the financial inclusion profile. It is therefore important not only to discover where the frontier is but also to show how this revolution can be consolidated to support a financial inclusion revolution for financial development in Africa.

The DFS has been evolving and has encompassed four distinct generations of fruitful innovations and also benefited from a good reception in the market. These four generations can be used to map as well as showcase Africa's mobile banking revolution and then ask how it can be replicated across all countries and the direction of consolidation:

- The **First Generation** – where the mobile phone technological platform was used for Payments and settlement – M-Pesa type of products. This revolutionized a rudimentary payments system. This was supported auxiliary laws and amendments, for example in Kenya, the 2006 Communication law recognized electronic units of money. This changed the developments of M-Pesa from using pre-paid airtime as payments to using electronic units of money. Trust Account, invoking Trust Law and using Trust Deeds were developed as the payments solution as a stop gap measure rather than stifle the innovations in the market. Banks, microfinance integrated themselves with the M-Pesa type of products. The success is there to be seen today: The current level of transactions in Kenya now almost stands at 4.5% of annualized GDP per day.
- The **Second Generation** – where savings accounts attracting interest rates were developed, launched - using the same mobile phone technological platform – A virtual banking service (costless to transfer from M-Pesa type of platform to a savings account). This means that the digital financial services started to impact on the banking intermediation process. With large deposits and a huge number of micro savers, this gave banks and microfinance banks in Kenya capacity to grow – strong domestic banks have emerged in Kenya.
- The **Third Generation**: - where the use of the transactions and savings data to generate credit scores for use as the basis to evaluate and price of micro credit. The celebrated M-Shwari type of products (also KCB Pesa, and M-Pawa in Tanzania). The ability to change the collateral technology that has been a major barrier to affordable credit and financial sector growth in many African countries.
- The **Fourth Generation**: - cross-border and international remittances based on the mobile phone financial services technological platform. Some countries like Kenya have developed and shared with other countries the money remittances guidelines. The immediate impact in Kenya was to transform the informal Hawala money transfer system to formal money remittances companies and improving further the AML/CFT regime.

These four generations of evolution of the DFS are what has made Kenya successful in the financial inclusion policy. The evolution of DFS is what can be used to consolidate a mobile phone based banking revolution in African economies.

## GETTING THE LEGAL FRAMEWORK RIGHT

There is always a temptation to show results but one clear outcome is that from the first generation of MFS to the fourth generation that defines DFS - the regulatory technology and the regulatory capacity and capability has changed to cope with the dynamics in the market. This also means the legal framework must also flexibly cope with the developments to give the market the protection required as well as boost the confidence. In this case it would be important to discuss the following issues:

- Different regulators talking to each other and cooperating to avoid any regulatory arbitrage
- What milestones needed to be covered and what prerequisites were required?
- What has made Kenya case (and in later years Tanzania applied similar products) successful?
- What lessons can be shared to overcome legal complications?
- Once the market is booming, other issues that surface and also require attention is Consumer protection, Market competition and level playing field and interoperability of the MNOs (should we start with or ensure there is interoperability)

## GOVERNMENT SUPPORT IN SUCCESSFUL DFS ENVIRONMENT

- A misconception in Kenya that M-Pesa started without any legal framework (a jungle out there!): The true picture is that the CBK Act, the Communications Law and the Trust Law were just adequate to start off and safeguard the M-Pesa model. Other auxiliary registrations and amendments that were introduced later improved but did not change the environment.

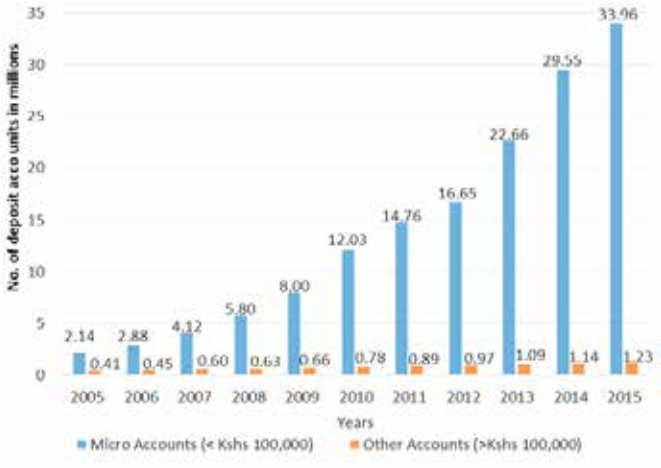
- In successful DFS settings, what we observe are a set of new laws, legal amendments and new institutions to regulate and to protect the market.
- There has been an endogenous demand to improve the regulatory capacity and coordination across regulators
- Governments' stake and participation in DFS: adopting payments technology – the government in most African economies is the major employer and major investor and so its position in payments and financial inclusion ecosystem will coordinate and encourage the rest of the market. In addition, in Kenya, the government has used M-Pesa for remittances in targeted social programs on poor and physically challenged households.

## THE FINANCIAL INCLUSION PROFILE: WHAT RESULTS CAN BE SHARED TO SHOWCASE DFS SUCCESS; PROPEL ADOPTION/REPLICATION; CONSOLIDATE THE SUCCESS ACROSS AFRICAN ECONOMIES?

- Payments systems have emerged driven by technology – they are efficient and effective – they cut across and reach all market segments
- Technology for managing micro accounts in commercial banks as well as to serve a mass market has emerged that is cost effective – banks only need to invest in such technological platform.
- The Virtual banking service has emerged: Those banks that have invested in such platforms have now a large customer and deposit base.
- So we have seen strong banks (not big banks!) emerge, with large deposits – signalling their capacity to grow and strengthen their intermediation process.
- Microfinance banks and SACCOs have found their place in the market as well
- Endogenous demand to complete the financial infrastructure: Deposit insurance mechanism, Credit reference mechanism (information capital); Consumer protection law and competition law among others have been developed: institutions to regulate and protect the market have been crucial to these developments.
- Financial inclusion policy and the environment has improved and the products rolled out have increased financial access touch points.
- Financial growth/expansion/development(?) has been evident
- The environment for monetary policy has improved: currency outside the banking sector declined (inside money increasing), velocity has declined -reflecting less cash changing hands-cash 'lite' towards cashless. Monetary Policy instruments have an operating environment.

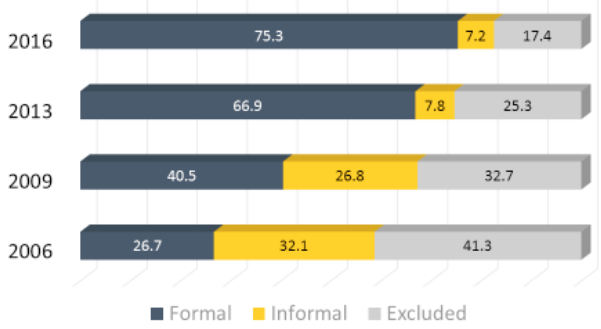
## SOME EVIDENCE:

KENYA BANKING SECTOR - GROWTH IN DEPOSIT ACCOUNTS 2005–15




- Number of deposit accounts has increased from 2.55million in 2005 to more than 35 million at end of 2015.
- Number of micro accounts has increased more than twelve-fold from about 2.14 million accounts in 2005 to nearly 34 million accounts at end of 2015.
- Growth attributable to reduced costs of maintaining micro accounts and introduction of innovative instruments targeting lower tier market segments.
- But also increased branch outlets that solved the physical distance – financial access touch points
- Barriers to entry into the financial system have been significantly reduced.

FINANCIAL INCLUSION IN KENYA: 2006 – 2016




- 75% of adult Kenyans access financial services by 2016
- Only about 7.2% of adults served by informal financial services, compared to 32% in 2006
- 17.4% of the adult population seem to be still excluded from any form of financial services

Figure 1: Percentage of population within 5 km


Figure 2: Number of financial access points

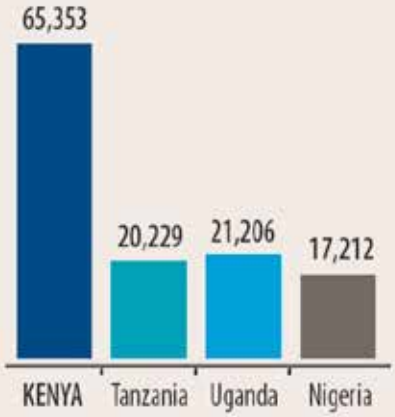



Figure 3: Financial access points per 100,000 people

# Introductory note on mobile phone financial services in the West African Economic and Monetary Union (WAEMU): Challenges, opportunities and outlook

**Oumar Tatam Ly**

Special Advisor, BCEAO, Central Bank of West African States

This fact sheet reviews the legal and regulatory framework of the West African Economic and Monetary Union (WAEMU) governing mobile phone financial services and outlines the principal challenges and opportunities in the sector. It also reviews issues requiring further analysis with a view to identifying orientations that could help consolidate the development of mobile financial services and enhance financial inclusion.

## LEGAL AND REGULATORY FRAMEWORK FOR PAYMENT SYSTEMS IN WAEMU

### 1. THE WEST AFRICAN ECONOMIC AND MONETARY UNION (WAEMU)

The West African Economic and Monetary Union (WAEMU) comprises eight (8) member states: Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo. Its central bank, the Central Bank of West African States (BCEAO), issues a common currency, the African financial community franc (CFA franc) which is pegged to the euro at a fixed rate (1 Euro = 655.975 CFA francs).

In keeping with the provisions of its current Statutes, the main goal of the BCEAO is to ensure price stability in its member states. It is chiefly entrusted with the following missions in WAEMU:

- defining and implementing monetary policy;
- ensuring the stability of the banking and financial system;
- promoting proper running of payment systems and ensuring their supervision and security;
- implementing foreign exchange policy;
- managing member countries' official foreign exchange reserves.

### 2. LEGAL AND REGULATORY FRAMEWORK GOVERNING MOBILE FINANCIAL SERVICES IN WAEMU

A legal framework has been developed to ensure the security of payment systems in WAEMU and their conformity with applicable international standards. It is based on Regulation No. 15/2002/CM/UEMOA, of September 19, 2002, on payment systems in the WAEMU member states.

Regulation No. 15 creates the necessary legal framework for the accomplishment of the fundamental mission of the Central Bank with respect to payment systems and instruments. It specifically sets the applicable rules for issuing and using cashless payment instruments and promotes issuing of such payment instruments by banks, but also by decentralized financial systems (DFS / SFD) and any other non-banking institution duly authorized by law.

In 2006, the BCEAO used the Regulation as a foundation for Instruction No. 01/SP/2006 of July 31, 2006, on the issuing of electronic money and electronic money institutions. This Instruction allows non-banking operators to issue electronic money under a less stringent fiduciary regime than the one applicable to credit institutions, thereby promoting the development of financial services via mobile telephone.

Two main models are officially authorized for the issuance of electronic money: the banking model and the non-banking model. In the framework of the banking model, the issuer is a credit or microfinance institution, and may or may not be working in partnership with a technical operator. Under the non-banking model, a non-banking institution is authorized to issue electronic money as an "Electronic Money Institution (EMI)".

The openness and flexibility of the regulatory framework governing electronic money and an environment marked by constant innovation in the information and communication technology sector have promoted the diversification of operators and distribution channels, as well as access to mobile phone financial services for people who are usually excluded from the banking system.

The BCEAO reformed the regulatory framework in May 2015, essentially with a view to increasing risk control, enhancing user protection, and protecting competition within the sector. Specifically, the revised regulatory instrument includes a broader definition of electronic money that allows for the inclusion of all of the different types of media.

The principal innovations focus on:

- Enhancing user protection: funds received against issuance of electronic money should be kept in one or more dedicated accounts which are reconciled on a daily basis by the issuer and the institution where the electronic money counterpart funds are domiciled. To better protect users, the new regulatory instrument establishes the principle that issuing institutions are fully liable for the actions of their distributors in relation to third parties in the provision of any services they have been mandated to supply. Finally, issuing institutions are to set up mechanisms to take in and deal with customer complaints;
- Improved security measures: issuing institutions must notably implement a proven mechanism to ensure continuous operations, deploy risk-management strategies and prove the existence of audit trails. All electronic

money issuing solutions must henceforth satisfy message integrity and high availability requirements. All systems must ensure data confidentiality, and guarantee bearers' authenticity and non-repudiation of transactions;

- Reinforcement of transparency and competition: issuers of electronic money must ensure that their distributors post information including their registered name, address and trade name, as well as their rates list, in such a way that it is clearly visible and legible. In compliance with the instruments in force pertaining to competitive practices, exclusivity clauses between issuers and distributors are forbidden;
- Supervisory mechanism reform: this reform notably enables the BCEAO to extend its supervisory controls to distributors and other technical service providers involved in the business of issuing electronic money. Under those conditions, institutions that outsource their electronic money issuing mechanisms must make sure that their technical service providers are in compliance with Central Bank requirements.

## CHALLENGES AND OPPORTUNITIES

### 1. CHALLENGES TO BE MET

At the end of September 2015, 22 million people, or nearly a quarter of the population of the Union, subscribed to financial services via mobile phone. Approximately 30% of those subscribers carried out at least one transaction per 90-day period.

Some 500 million transactions were completed over the first nine months of 2015. The cumulative value of those transactions was 5 trillion CFA francs (approximately USD 8.5 billion) as at the end of September 2015, an increase of 142% compared to the end of September 2014. The value of transactions also grew from 1 to 2.068 trillion CFA francs between September 2013 and September 2014, an increase of 107%.

Despite the dynamic figures seen above, the mobile phone financial service sector faces the following major challenges:

- a lack of partnership between operators with a view to diversifying the supply of services and ensuring effective financial inclusion for users: this situation is reflected in the low level of bank involvement in developing transformational models (micro-credit, micro-insurance, savings, simplified accounts, etc.). Banks have been slow to engage with telecommunications companies to develop more inclusive services and products using mobile phones;
- the high cost of services, notably due to insufficient transparency in terms of rates and low levels of competition;
- the lack of interoperability between mobile phone financial services, as well as between those services and bank cards;
- insufficient accessibility of distribution outlets and acceptance by target populations;
- services are not well known (lack of financial education and awareness);
- services are not used by governments (digitization of state payments), which are among the biggest payers and collectors.

### 2. OPPORTUNITIES TO BE SEIZED

Mobile phone financial service development opportunities can be seized by taking account of the following aspects:

- the low banking penetration rate. In strict terms, the banking penetration rate in the Union stood at 14.15% in 2014. The rate is the ratio of the number of bank account holders to the size of the adult population. Extended to accounts opened in postal banking services, microfinance institutions and electronic money issuers, the total figure reaches 55.05%;
- strong mobile phone penetration: according to Groupe Speciale Mobile Association (GSMA), the mobile phone penetration rate in WAEMU countries grew from 52% in 2010 to 75% at the end of December 2013. Major telecom operators continue to invest in the creation of ever larger networks reaching the limits of rural areas, where mobile telephones have become an easily accessible means of communication for the population.

## AREAS WARRANTING FURTHER INVESTIGATION

Areas that may require more in-depth research to identify orientations that could consolidate the development of mobile phone financial services include:

1 taking account of funds received in exchange for electronic money in bank deposit guarantee mechanisms and alternative solutions to reinforce protection of the assets of users of the payment instruments;

2 the roles (regulation, catalyst, etc.) that could be played by the regulating authorities in the promotion of transformational models (micro-credit, micro-insurance, savings, simplified accounts, etc.);

3 the impact of digitization of government payments on the financial inclusion of the population;

4 financial inclusion of women and youth;

5 development of healthy competition between banks and telecom companies;

6 promotion of interoperability between financial services based on electronic money;

7 compliance with provisions governing external financial relations where cross-border transfers involving countries outside WAEMU are concerned.

# Regulating Digital Financial Services to Spur Financial Inclusion

**Kennedy Komba**

Senior Advisor, National Payment Systems, Bank of Tanzania

## OVERVIEW

Digital financial services, particularly in developing economies, have contributed to facilitate the unbanked population to access some form of formal financial services. The phrase *"some form"* is the used here to refer to the *initial level* of financial services that the unbanked are able to access through digital financial services, typically, *payment services*. Access to digital financial services is made possible, in these developing countries, through the ease of accessing mobile phones and the simplicity of the technology used to facilitate payment services. The simplicity of this technology[6] enables owners of feature phones (relatively affordable) to send messages via a menu that offers digital financial services.

Various studies have shown that the levels of access to mobile money accounts in Africa, have increased significantly in the past 4 years, the spread has traversed from East Africa to other parts of Africa. In the sub-Saharan African countries of Côte d'Ivoire, Somalia, Tanzania, Uganda, and Zimbabwe, according to the World Bank Findex Survey of 2014, there are more adults with a mobile money account than a bank account. The reasons for low bank accounts level in Africa is well documented, but to mention a few; the underdevelopment of the Africa's financial system with limited outreach, inadequate infrastructure, poverty, literacy rates and high costs of banking service. Together, they hamper the growth of provision of banking services that rely on brick and mortar models. Meanwhile, digital financial services through mobile phones are revolutionizing access to formal financial services in Africa.

## CONCERNS

While there are positive trends and remarkable growth in some jurisdictions in Africa on the success stories of mobile phone financial services, the picture is not the same in most parts of Africa. The landscape of mobile financial services in Africa is quite diverse, with markets endowed with deep mobile financial services offered by range of service providers and with a potential for more growth; while other markets are very narrow with basic payment services skewed to one type of financial service provider. The concern is what could be the cause of such diversity? In exploring this we will focus on the policy or regulatory environment that has been the cornerstone in fuelling adoption and uptake of digital financial services in the success story markets.

## DISCUSSION QUESTIONS

In the quest to unearth some of the key lessons, the following questions may guide the discussion:

1 Should Central Banks restrict digital financial services or mobile phone financial services to be led by banks only? And, what is the right policy balance between bank and non-bank led models in offering digital financial services?

2 Should central banks mandate certain aspects in the digital financial services eco-system, such as interoperability, exclusivity and channel access (fair access to the communication platform)?

3 What is the role of policy leadership in enhancing financial inclusion through digital financial service?

4 What role should regulators or policy makers play to spur second generation digital financial services, that is, moving from the initial payment services to deeper financial services such as credit, insurance, securities etc., including merchant payments?

6 The reference to the technology is the Unstructured Supplementary Service Data (USSD) protocol, used by GSM mobile phones to communicate with the Mobile Network Operator's computers in the end facilitating provision of digital financial services to users.

# Consolidating Africa's Mobile Banking Revolution

**Janine Aron**

James Martin Fellow, EMOD, INET@Oxford, Nuffield College and CSAE

## MY INTEREST IN MOBILE MONEY:

- Two Gates Foundation funded papers on mobile money:
  1. Inflation forecasting models for Uganda: is mobile money relevant? (CSAE working paper series)[7]
  2. 'Leapfrogging': a Survey of the Nature and Economic Implications of Mobile Money[8]
- I have been commissioned to write an Oxford Martin School Policy Paper on Mobile Money this year[9]
- I have organised a Special Session on The Economics of Mobile Money, CSAE Conference 2016 in Oxford in March.

*The comments below are taken from my survey.*

## THE ECONOMICS OF MOBILE MONEY AND A COOPERATIVE APPROACH TO DATA ANALYSIS

Knowledge about the *economics* of mobile money is limited. The channels for a macroeconomic impact of mobile money are poorly understood in the literature, including the effect on inflation and the implications of domestic and international mobile money use on monetary policy management. At the *microeconomic*-level there have been qualitative and quantitative studies of adoption and usage, and a handful of econometric studies, using panel data or Random Controlled Trials, of the potential welfare, saving and risk-reducing impact of mobile money. But this empirical work faces data challenges, identification concerns (including the bias from difficult-to-measure omitted variables) and problems of reverse causality, and the results cannot be taken at face value but need to be expertly assessed. The above two Gates Foundation-funded papers have provided the first critical assessment of the macro- and micro-empirical work. One aim was to highlight the more robust conclusions from the research and flag up potential weaknesses in some of the research: *more convincing findings* from future researchers should *bolster the case for investing in mobile money by donors and the industry*.

An important spill-over effect of mobile money is that *"big data"* are collected by mobile money operators and potentially by the supervisory central banks. New access to terabytes of administrative data from multiple mobile phone and mobile money operators in many countries promises a data revolution that may spawn a possible research revolution. Financial record-keeping has important implications both for research into the economic effects of mobile money and more generally. For example, the use of administrative telecoms data can create predictive indicators, say of wealth based on expenditure, in developing country environments with otherwise very limited available economic information. Quantitative records of household and business expenditure through mobile money payments, and the use of innovative tools to forecast hard-to-gauge household assets and expenditure could overcome some data measurement problems faced by household surveys for micro-economic research.[10] Such analysis could also feed into "now-casting" and reveal short-run macro-economic trends before the quarterly data are available, and thus be a useful tool to central banks

To this end it would be useful to influence a positive cooperation between academic researchers, donors, central banks and the industry *in the collection of proprietorial data and its improved analysis*. For mobile money researchers, crucial is access to the appropriate data, often a serious stumbling block; yet the results of research would be beneficial to the collectors of the data too. I would like to encourage the central banks (which supervise the operators) to collect data from operators with different levels of aggregation for monitoring and research and "now-casting".

## REGULATION – SOME CRITICAL LESSONS TOWARD AN ENABLING POLICY AND REGULATORY FRAMEWORK

Presentations at a conference on mobile money in Uganda in 2015 (Central Bank of Uganda-Gates-IGC-World Bank) with wide business-academic-financial sector-donor and neighbouring country participation alerted me to the lack of *diffusion of knowledge on key regulatory lessons* at the country level in the business and financial community and especially the regulatory authorities. It was as if they were "reinventing the wheel". Summarising difficult-to-access regulatory lessons for the beneficial promotion of mobile money would be an important contribution.[11]

The **first** and most important lesson is that regulators' qualms about licensing non-bank operators to offer mobile money services are misjudged, and this is deleterious to the development of such markets. A Mobile Network Operator (MNO)-led operation is better suited in terms of infrastructure, skills and incentives than a bank-led operation. Banks lack these assets and incentives; bank-led models may be conservative and risk-averse in deployment and may even resist deployment if they consider mobile services to be in competition with their own services. Sharing thin profits

7 With John Muellbauer and Rachel Sebudde: https://ideas.repec.org/p/cpr/ceprdp/10739.html

8 Under revision for the CSAE working paper series: http://www.sbs.ox.ac.uk/faculty-research/research-projects/completed-projects/mobile-money-inflation-and-monetary-policy-east-africa

9 See: http://www.oxfordmartin.ox.ac.uk/policy/publications/policy

10 See the work of http://www.jblumenstock.com/research.

11 An excellent source is di Castri, S. 2013. "Mobile Money: Enabling regulatory solutions." GSMA, February.

equably between the two players may further impede the success of the operation.

Two main factors explain the unfortunate rejection by some regulators of non-bank-led mobile money deployment. They provide limited financial services to customers, contrasting with "full" financial inclusion through the formal banking sector. But this misunderstands the barriers to financial inclusion which mobile money has helped to solve, and how mobile money platforms have provided a pathway to later formal banking inclusion through credit extension, insurance and savings products. The more cogent objection is against licensing a non-bank to offer financial services with financial risks, but without being legally subject to prudential oversight. This objection has been neatly surmounted in many countries by requiring a partnership between the (service-leading) MNO and one or more fully prudentially-regulated banks, where the electronic value in the customers' mobile money accounts is fully or partially backed up in bank accounts. The role of the partner bank is thus only as custodian of the funds in ring-fenced escrow or trust accounts, and it is not involved in the commercial aspect of the deployment. The non-bank provider, which is not prudentially-regulated, may not intermediate these funds, therefore; however, the banks do intermediate the pooled funds by lending them on, and in consequence they provide interest on the deposits.

What is to be done with the interest on the escrow or trust account? In Kenya it is paid to charity; but by Trust Law, and this is stated explicitly in the Kenyan Guidelines, this Trust income could be allocated to the beneficiaries of the trust (i.e. the customers and agents), as in Tanzania since 2014. It makes sense for the customers to be compensated pro rata from Trust account income given the inflationary degradation of their deposits, while the custodial bank earns loan interest on these funds. This should promote savings in electronic accounts.

Are the pooled funds protected by deposit insurance (e.g. Rwanda and Ghana are still developing deposit insurance schemes)? Is the cover sufficient? Is there pass-through protection for each customer up to the insurance limit as in the US? This may not automatically apply in developing countries, and should be regulated for; otherwise a single insurance payout at the insurance limit would apply to the account *as a whole*, presenting a considerable risk to mobile money customers in the event of bank failure

A **second** lesson is that *tiered regulatory requirements for the registration of new customers* to mobile payments schemes should be adopted. Regulation should be according to specific risk by function. Sometimes onerous identity requirements have impeded the adoption of mobile money. Since the poorest customers require a low threshold of transactions and consequently pose a low risk, a *tiered* registration requirement can promote adoption with fewer formalities in the initial stage that can be geared up when higher thresholds are required. In developing countries, a system of national identity cards may not exist and the addresses of customers are often unclear or without utility bills to prove them. To combat absent ID documentation flexible approaches have been adopted in various countries (e.g. Fiji) allowing reference letters from prescribed referees. Adopting *proportionate Know Your Customer* (KYC) procedures entails making use of other mitigation tools, such as daily and monthly transactions limits with alerts, and hence can simplify the required customer due diligence (CDD). Proportionate registration requirements are crucial to realizing the objective of financial inclusion of the unbanked without compromising financial integrity at higher levels of usage. Generally, the move from cash to recorded transactions in electronic mobile money accounts enhances financial integrity by reducing anonymity and making money traceable.

This traceability is of great importance in extending mobile money systems to include *international transfers*. There is a significant opportunity for mobile money operators here, as it possesses a tiny market share currently. There was a huge move towards establishing markets in 2015 and there are potential gains to all players, customers, MNOs, MTOs, banks, and national regulators. In Feb-13, the Financial Action Task Force (FATF) updated its Guidance on *financial inclusion* and AML/CFT (Anti-money Laundering/Counter the Funding of Terrorism) recommending a *proportionate approach to risks of AML/CFT* (similar to the World Bank-BIS Principles, 2007). But there is a crisis in international remittances in countries such as Somalia, where commercial banks have largely ceased international remittance operations because of poor compliance at the *receiving* end. The solution is *developing robust CDD in the receiving markets*. Examples are issuance of cards with biometric identifiers /pins, though there are several caveats about their use in poor countries; higher tier registrations for international remittance customers; and an independent, self-funding "Trusted Third Party" organisation in each target market, performing the functions of an MTO regulator, with powers to audit and penalise *local* money transfer operators. This could help development of mobile money's share of the remittances market for traceable, safe and secure transmission.

Note that if shadow remittances move into recorded channels there could be monetary policy implications. Further, if licenced mobile money systems for cross-border transfers with low transactions costs increase their current tiny share of the market, this could create considerable competition for widely-prevalent Hawala systems, as the users of the two services intersect strongly. This could transform the role of the unlicensed Hawala.

A **third** lesson concerns the regulation of agents: in the high uptake countries, agent networks were deployed. An efficient distribution network has been crucial to M-Pesa's success in Kenya. Again, proportionate and cost-effective regulation is recommended to accelerate the adoption by active customers. A model that works well in terms of the provider's incentives to monitor properly is where providers are made liable for the actions of agents executed on its behalf within

a contractual principal-agent agreement. Regulators are then more comfortable to leave the choice of agents and training to providers, and only to set standards for vetting and training of agents. This helps avoid regulation that restricts the types of agents that may be employed. Another aspect that benefits from "light touch", flexible regulation is where the authority (central bank) is notified of the recruitment of agents and has the prerogative to inspect such agents, but does not have to authorize these agents before they can operate.

A **fourth** lesson concerns the beneficial promotion of transparency through market conduct regulation for consumer protection, including price and fees disclosure and simple clear contracts on customers' rights and obligations. Against this, complex and expensive standards should be avoided for low value transactions. Customers should also be made aware of effective complaints procedures. Issues of privacy and data protection are partly addressed by national privacy laws, telecommunications regulation, and financial regulation, but are mostly addressed by business practice. Compliance costs with regulated requirements for data privacy, including backups of data, should be assessed with operators.

It would be useful to alert players (regulatory authorities, international donors and the industry), in poor governance environments to some of the data privacy concerns that have not yet been raised, for instance on the new credit ratings/credit scores created by private companies from mobile payment records thereby reducing asymmetric information to the banks for loans purposes. This was in general an important issue raised at the Peking-Stanford-Oxford Internet Law and Policy conference, on 23-24 November 2015, where I sat on a panel on Mobile Money.

A **fifth** lesson concerns interoperability. Few countries have adopted interoperability. The execution of interoperability is technically complex and compliance costs will rise, challenging the business viability of mobile money. Sophisticated contractual agreements will be required amongst market players for platform level, distribution level or customer (SIM card) level interoperability. The current position seems to be that interoperability will in due course become a desirable (market-led) goal with mature and viable deployments with strong and active customer bases. However, the increased complexity for regulation and also sensitive decisions on competition policy will be challenging in governance-constrained environments.

Regulators face a fine balance between encouraging innovation and commercial viability on the one hand, and enabling competitiveness and consumer protection through appropriate regulation on the other. Players enter hoping they will achieve a dominant and profitable oligopolistic position. A later move to interoperability or removal of exclusivity rights on agent networks is like the expiry of patent rights. In the patents world there are rules about how long patent rights last. Would it be helpful to clarify the time frame of such advantages? Or is it better to be unclear and only step in if market power is abused?

## FINANCIAL INCLUSION AND SMART PHONE TECHNOLOGY

Fast-spreading and cheaper smartphones offer easier and educative access to financial services for huge numbers of illiterate people through well-designed applications.[12] These could provide access to sophisticated features and a spectrum of financial services. Difficulties with inflexible interfaces on basic feature phones for more advanced products, such as accessing account information, switching between accounts and submitting loan applications, might itself prompt the uptake of smartphones. The adoption of smartphones will likely increase the *usage* of broader financial services.

ARM Holdings, the market leader in processors, predicts that by 2015 over half the smartphone/tablet shipments will comprise entry-level phones below US$150. With further scaling on the process technology and development of small and power efficient CPU cores, combined with new competition in low-cost markets, suggests a price floor of US$20 in 2015 for an entry-level smartphone running Android (below the price of feature phones (corrected for inflation) in Kenya by in 2007). The cheapest android smartphone in Kenya in 2014 was below 5000 Kenyan shillings (or US$55). There is also a thriving market for *recycled* smart phones in developing countries.

Global smartphone adoption is projected by GSMA Intelligence to increase 1.7 fold, between 2012 and 2017, with a 5-fold increase in smartphone penetration expected in SSA and a 2.2 fold increase for Latin America. A virtuous circle may develop where greater adoption of smartphones prompts MNOs to offer diverse financial transaction applications for smartphones. Interoperability across networks and between mobile money providers and the banking system will then become easier to implement and to use.

12 See Villasenor, J. 2013. "Smartphones for the Unbanked: How Mobile Money Will Drive Digital Inclusion in Developing Countries." The Brookings Institution, Issues in Technology Innovation 24:1-12, September.

# Reflections on the Enabling Environment for Mobile Money

## David Porteous

CEO and founder of Boston based consulting firm BFA; and Chair and co-founder of the Digital Frontiers Institute

In 2006, I first had the opportunity to reflect publicly on the type of policy and regulatory environment, which would enable mobile money to thrive. The resulting publication[13] proposed two hypotheses:

1 That there was a need to distinguish between mobile initiatives which introduced a new channel for the already banked (dubbed 'additive') and those which introduced the unbanked to banking services for the first time ('transformational');

2 That the regulatory environment which would best allow new and innovative mobile services to emerge and grow would strike a balance between sufficient openness and sufficient certainty.

These were only hypotheses then, since they were based mainly on observations of mobile money deployments in countries like Zambia, South Africa and Kenya which were all in very early days of testing and rollout. This general question about enablement was then taken further in subsequent work with CGAP (Lyman et al 2009) and the framework for assessing openness and certainty published in 2009 (Porteous 2009). In 2013, World Bank authors Gutierrez and Singh were able to use data on mobile money uptake from the first Global Findex survey to assess whether variants of this hypothesis held econometrically.

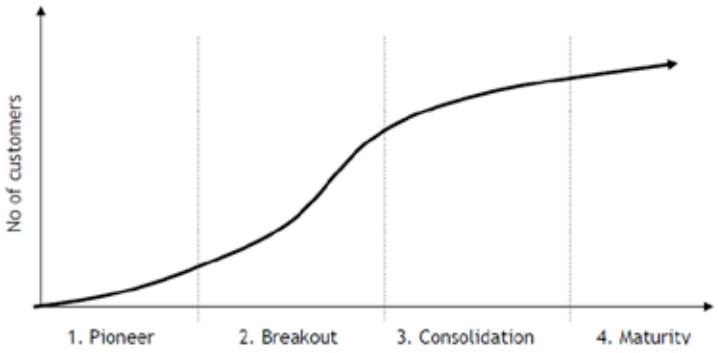
Now in 2016, ten years later and with a much greater volume of evidence to hand, it seems appropriate to review this concept of enablement against the evidence about what has enabled mobile money to thrive. And then to consider whether and if so how the framework needs to be updated for the next phase of development. This memo will tackle those three objectives in brief.

### ENABLING MOBILE MONEY & THE POWER OF TRANSFORMATION

Early mobile initiatives were often mixture of additive and transformational, reaching out both to banked people as well as unbanked: for example, Celpay in Zambia launched around 2002/3 with a proposition targeted very much at urban people likely to be banked, but soon afterwards, also supported cash payments to demobilized soldiers in the DRC who were decidedly unbanked. However, it was the take-off of M-Pesa in Kenya after 2007 which first demonstrated the transformational power of mobile payments (as then called, since not linked to a bank) on a large scale. Globally, despite a large number of launches of mobile money initiatives (as they have become called to bridge the bank-MNO gap) since then, the numbers of active users who are not also banked remains small relative to the potential—some 1% of adults globally who use mobile payments are not banked, compared with some 62% who are 'banked', according to Global Findex 2014.[14] The majority of these are in Africa today. So, the original task of enablement is far from over; however, it has evolved over time.

The analysis of what would enable a new market for a financial service to develop was undergirded in part by the notion that a new market would go through different rates and stages of growth, such as portrayed in the classical 'S' curve of technology adoption below. My concern then, as now, was that, at least by the time a market reached maturity, a market should 'work for the poor' in the sense of including as many low income users as possible, rather than being limited to a low proportion of the population in maturity. Clearly, the rollout of mobile phones since the 1990s to date has been a good example of a new service now starting to mature at high levels of adoption and usage even in most low income countries.

Figure 1: Classical Market Adoption Curve




Source: Porteous (2006, Figure 3)

In 2006, mobile money (as it came to be called) was then very much at the pioneer stage, until M-Pesa in Kenya became the first scheme globally to enter the breakout phase from 2008 onwards. The early analysis of enabling was therefore focused on what it took to allow pioneers to start-up and get to breakout stage. The dimensions of openness and certainty were an attempt to summarize what I had heard from providers, namely, that they needed the openness in regulations to be able to try a new service even if existing regulations didn't fit well (as they didn't in Kenya at the time); as well as some protection against arbitrary retrospective action which could undermine the value of the substantial investment required in systems, people, and marketing: hence M-Pesa's desire to receive a formal 'no objection' letter which de facto

13 Porteous (2006)

14 Global Findex 2014 available from: http://www.worldbank.org/en/programs/globalfindex

gave license to operate, even though this limited permission was subject to subsequent political threat once the breakout potential was evident.[15]

In these early days, the focus was on the minimum necessary conditions for regulatory enablement for this phase, with no attempt to look at the sufficient conditions beyond regulatory alone — such as network data quality, market structure, willingness and ability to invest upfront, all of which have been subsequently highlighted in different analyses of success.

The CGAP work on the regulatory environment for branchless banking[16], in which I participated, first sought to take a systematic view of conditions across a range of markets—those where mobile money was growing (Kenya, South Africa and Philippines) as well as some (Brazil, India, Pakistan, Russia) where it then had yet to emerge. The conclusion of these studies, apart from a regulatory toolkit to use in diagnosis, was to identify two necessary conditions for mobile money to develop:

1 Allowing agents to handle cash in and cash out;

2 Introducing risk-based KYC for account opening.

Four further topics were flagged as 'second generation' issues:

1 Allowing regulated e-money issuance by non-banked

2 Effective consumer protection

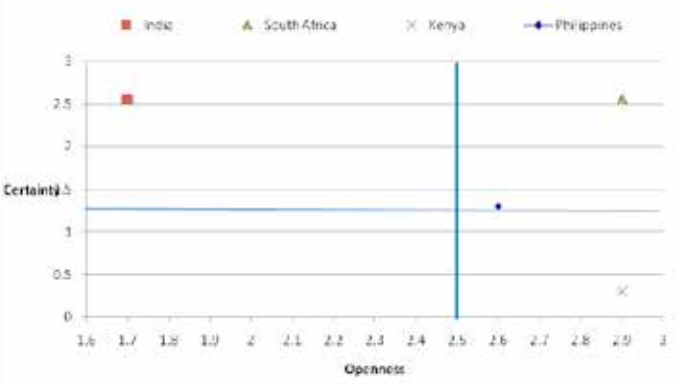
3 Interoperable payment system laws

4 Effective competition in MNO channels and provision.

## THE EVIDENCE SO FAR

By 2009, there was enough differentiated experience to be able to reflect on the extent to which progress in mobile money was indeed linked to these or other dimensions of enablement. I formed an index based on weighted answers which assessed in each of seven regulatory domains whether the existing regime was enabling or not; and assessed four countries in certainty-openness space. The outcome is shown in Figure 2 below. The four quadrants are formed by lines which represented the average scores for each dimension. As predicted, early movers Philippines and South Africa made it into the top right hand cell of relatively high openness and certainty, while Kenya was high on openness but not then on certainty. India, a late-comer, was high on certainty, having many regulations and guidelines, but low on openness.

Figure 2: Assessing enablement in openness-certainty space




Source: Porteous (2009) Figure 2.

This analysis was based on the very small sample of four countries available at the time, and indeed, on somewhat unclear numbers of active users in some such as the Philippines where the active usage was subsequently found to be much lower than operator numbers had suggested.[17] It was only in 2013 that Gutierrez and Singh from the World Bank were able to use a much better indicator of outcome on a wider sample of countries: they used Global Findex 2011 data on self-declared usage of mobile money from nationally representative surveys in 35 countries, chosen by ranking all Findex developing countries by their usage level and selecting seven countries from each quintile. This gave them a large sample of some 37,000 individuals, users and non-users, against which to assess econometrically the relevance of a regulatory index of openness and certainty which they developed based on the same core criteria as I had used in 2009. Their conclusion: "...regulators can foster the development of mobile banking services through the enactment of supporting regulation. Certainly, there are countries with similar regulatory frameworks (either adequate or not) and very different development of mobile banking services, but on average we find a better regulatory framework is associated with higher mobile banking services usage" (p.16). The size of their sample also allowed them to assess the influence of components of the index, where they found some interesting results: the usage by the poorest quintile of the population was positively associated with greater interoperability but negatively with stronger consumer protection; while usage by people of higher education is positively correlated with stronger consumer protection. The econometrics alone could not of course explain these observations.

## ENABLEMENT: TOWARDS THE FUTURE

The use of composite indices like these as a way of undertaking quantitative studies of environments can be subjected to many challenges: for one thing, these indices tend to measure only the "de iure" aspects of what was on the books, and do not reflect the degree of enforcement, which may matter more to players. Nonetheless, I wanted here to summarize

15 For more information on how CBK handled the threat, see the description on in the AFI Case study "Enabling mobile money transfer The Central Bank of Kenya's treatment of M-Pesa" available via http://www.afi-global.org/sites/default/files/publications/afi_casestudy_mpesa_en.pdf

16 Branchless banking was a broad term used at the time and now largely replaced in banks at least by the broader term 'Alternative Delivery Channels'; branchless banking included mobile money but sought also to allow for bank channels such as agents with POS where there was not necessarily a mobile phone in use by end customers.

17 See BFA (2010) "Demand study of Domestic payments in the Philippines", available via http://bankablefrontier.com/wp-content/uploads/documents/BMGF.PDP-FinalReport-dec2010.pdf

and highlight the process of testing and learning not only because of the findings themselves, but also because the process of collecting evidence to test hypotheses across countries is very much in the spirit of 'testing and learning' as was enshrined in GPFI principles for innovative inclusion in 2010.[18] We can and should continue seek to improve the use of evidence in regulation and policy through formulating testable propositions and debating the outcomes of testing.

Ten years on from the early work, my sense is that the enablement lens remains generally relevant for the discussion: certainly for the many countries which, notwithstanding various initiatives, are still in early stage of mobile money development. If they have not attended to the forms of regulatory enablement which have been found to be essential, for example around allowing agents and introducing risk based KYC, the question would be why not? Could political economy factors be at play? And if they have done so, yet still not seen market traction, then factors beyond the directly regulatory may be at play, for example, market structure considerations or low levels of electronic trust, in ways which may demand different enablement approaches from policy makers than the early mover countries had.

I am also aware of a need to introduce a more explicitly dynamic framework to cater better for later stages of market development in ways which I could only hint at and certainly did not understood well back in 2006.[19] Ignacio Mas (2014) has proposed that some of the initiatives needed today should be called 'fostering' to differentiate them from enabling, which has at least the connotation of policy makers removing constraints, rather than intervening directly when needed. For example, we have certainly found in other work that achieving interoperability in payment systems may require more activism by regulators—what we have elsewhere called a 'managed approach' to setting goals, monitoring progress and intervening if pace is not forthcoming.[20] Equally, it is clear that fair access to mobile data channels can be a major constraint, in which regulators may have to take an active approach to overcome unfair barriers to entry and operation by non-MNO operators.

Finally, to generalize the issues beyond mobile money only while drawing on the useful precedent: back in 2006 mobile money operators were in many ways the FinTech challengers of their day before that term was coined, assaulting banks' stranglehold on retail transactional accounts. Now, in large part because of the roll out of smart mobile devices enabling ubiquitous access to financial services through internet channels which are not controlled by mobile operators, the challenger group of FinTech companies has multiplied greatly in number and in the scope and intensity of their challenge across the financial system: not retail payments only, but many categories of financial services including wholesale payments, lending and insurance, face disruption. The focus of disruption has indeed spread inwards from a branch of the financial system (mobile phone as a channel) to the trunk (where the notion of money itself is changing with the spread of cryptocurrency). In the midst of these new challenges, a new discussion about what regulatory enablement means, as well as enablement for what ends, is indeed timely and necessary.

18 Principle 7 (Knowledge) of the GPFI Principles for Innovative Financial Inclusion, adopted by G20, available via http://www.gpfi.org/sites/default/files/documents/G20%20Principles%20for%20Innovative%20Financial%20Inclusion%20-%20AFI%20brochure.pdf

19 "Applied at later stages, enablement means continuing to ensure openness, while increasing certainty for stable growth" Porteous 2006: p.50.

20 See CGAP/BFA (2012) "Interoperability and the Pathways to inclusive retail payments in Pakistan", available via https://www.cgap.org/sites/default/files/CGAP-BFA-Interoperability-and-the-Pathways-Towards-Inclusive-Retail-Payments-in-Pakistan-Jun-2012.pdf

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# Consolidating Africa's Mobile Banking Revolution

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The advent of digital finance enabled financial institutions in Africa to innovate, allowing them to roll out inclusive approaches that would enable the excluded to access their services. Excluded from formal finance, unbanked individuals resort to informal mechanisms such as savings groups, moneylenders or social support networks in lieu of banking and risk management products. These informal mechanisms are imperfect and can be costly and risky substitutes. The primary obstacle to offering formal financial products to low-income customers has generally been the cost of delivery, given the relatively low value of transaction sizes involved. Although financial products for the poor have existed for decades in the form of microfinance, the inability to deliver these products cost-effectively has made it difficult for microfinance institutions (MFIs) to reach significant scale, particularly in sub-Saharan Africa, where population densities remain relatively low. Over the last few years, however, certain parts of Africa have experienced remarkable advances in financial inclusion using digital financial services, which leverage information and communication technology and agent networks as a cost-efficient distribution channel.

Over the last three to four years, successful mobile money operations have emerged in places like Tanzania, Zimbabwe, Uganda, Ghana, and Cote d'Ivoire, demonstrating that the Kenyan M-Pesa experience was not a one-off and mobile money is here to stay. Although operators continue to struggle with challenges around distribution, liquidity management, product development, risk management and fraud, the basic foundations for the industry have now been proven to work in multiple markets, based on the twin pillars of technology and distribution. Will the industry look exactly the same in 10 years' time? Almost certainly not. But the elements are beginning to be well understood and clear basic business model is emerging to extend the utilisation of mobile money to drive banking and thus financial inclusion. Innovation to mobile financial services will however be challenged by the stance taken by regulators.

## WHERE IS THE FRONTIER NOW FOR MOBILE BANKING IN AFRICA?

The most exciting opportunities and most pressing challenges for Regulators and the financial services industry in the next five to ten years will revolve around:

- Consumer protection, with respect to deposit taking
- Managing of settlement risk amongst payment actors

Some of the key innovation trends in the distribution of digital financial services include:

- Apps and tools to digitize and speed up the account opening process
- Biometrics (finger and voice) as additional options for customer authentication
- Optimising distribution – field-force management tools to track field staff, agents and/or merchants
- Emergence of third-party agent aggregators offering provider-agnostic agent services
- Application developers supporting financial institutions with mobile money integration
- FinTechs which enable merchant acceptance of digital payments in-store
- Payment aggregators enabling online payments and e-commerce
- Leveraging alternative data sources for credit decisions
- Leveraging alternative data sources for business intelligence
- Pay-as-you-go for essential goods and services leveraging mobile payments infrastructure and machine-to-machine connectivity
- Mobile on-demand micro-credit
- Mobile micro-insurance initially targeting health insurance for poor African households
- Formal products building on or leveraging observed informal behaviors and group capabilities
- Proliferation of financial products offered by non-mobile money providers riding on top of the mobile money platform
- Consumer financial education – innovations in financial capabilities and rewards-based strategies
- Collective purchasing and selling in agribusiness made possible through mobile apps
- Index-based insurance dominating the agricultural micro-insurance space

## GETTING THE LEGAL FRAMEWORK RIGHT

It is our belief as an industry player that regulation should focus on the two primary roles that money plays, irrespective of underlying technology. These are:

1 Medium of Exchange (to support payments)

2 Store of value (to facilitate savings and investment)

Kenya was successful, mainly because of the effort of key regulatory agencies, led by the Central Bank of Kenya, which played a proactive role in financial sector development by:

1 **Enhancing Policy Profile:** Financial inclusion and market development/reforms

2 **Products:** Encouraging different products that are cost effective, serve different market segments and lower barriers to entry

3 **Regulation:** Strengthening regulatory capacity and capabilities to provide appropriate and adequate oversight

4 Supporting the development of traditional and alternative financial infrastructure

5 Developing partnerships with diverse market players

6 Promoting competition and diversity of innovative delivery channels, whilst ensuring that the appropriate support infrastructure (Credit Reference Bureaus, Financial Education, Deposit Protection, and Consumer Protection) exist and is applied uniformly within the various collaborative industries.

## REGULATING NEW TECHNOLOGIES

Some of the new digital financial services are:

1 OTT – Over the top technologies, which uses smart phone enabled devices, that enable the provision of financial services, in a bank agnostic way, by riding on the mobile money platform.

2 Block chain

## FACILITATING CROSS-BORDER PAYMENTS

M-Pesa money transfer between Kenya and the UK showcased a potential opportunity for established mobile money operators to interconnect and digitise cross-border remittances, with relatively modest investment – providing customers with a substantially cheaper, more convenient, and secure means of remitting money.

However, this will only be possible with an enabling regulatory environment, which is still lacking in the vast majority of mobile money markets. This challenge is exacerbated by the differences in the approval processes and regulatory requirements of each Central Bank, which operators must manage carefully. The success of cross border payments services was only made possible because the right conditions were in place.

The following critical enablers were/are required for mobile money operators to successfully launch and operate cross-border remittances:

### 1. ADDRESSABLE REMITTANCE CORRIDORS

Underlying demand for the service is the starting point. Tight socio-economic integration between markets provided exceptionally strong remittance corridors, which makes Kenya and the UK relatively unique, but there are large diaspora communities and cross-border remittances in many other African markets as well.

### 2. STRONG MOBILE MONEY FOUNDATIONS IN BOTH SENDING AND RECEIVING MARKETS

In both cases, hundreds of thousands, or even millions, of customers on each end of the remittance corridor were already educated about mobile money and made regular domestic P2P transfers utilising well managed, secure and financially stable agent networks. Operators in these markets have therefore tried to mirror the user experience for making domestic transfers.

### 3. REGULATORY APPROVAL FOR MOBILE MONEY OPERATORS TO SEND AND RECEIVE REMITTANCES

Two key success factors for Safaricom / M-Pesa were the support and the existence of common regulation in all of the markets involved. To date, relatively few Central Banks have permitted outbound and inbound remittances using mobile money and the authorisation processes for operators is not harmonised across markets. Issues include mitigating settlement risk, aligning KYC and AML/CFT processes, ensuring that transaction and balance limits are harmonised and appropriate, addressing consumer protection issues such as transparency and dispute resolution and complying with applicable exchange control requirements. However, regulators in a number of markets have demonstrated that these issues are surmountable.

### 4. CROSS-BORDER REMITTANCES REQUIRE INTEROPERABILITY BETWEEN MOBILE MONEY SCHEMES.

As with domestic mobile money interoperability, cross-border remittances depend on operators transacting across platforms and settling funds directly between each other. This interoperability can be implemented directly through bilateral agreements or indirectly through a processor.

### 5. COMPENSATION FEES MAY NOT BE NECESSARY TO ALIGN COMMERCIAL INCENTIVES FOR SENDERS AND RECEIVERS.

The most common model emerging for domestic interoperability involves a 'compensation fee' paid by the receiving operator to the sending operator, which ensures a fair balance of profit and incentives on both sides.

However, since transaction fees charged by the sender can be considerably higher for cross-border remittances than for off-net domestic P2P transfers, profitability before any compensation fees are charged is much more balanced.

## NAVIGATING THE POLITICAL ECONOMY OF REGULATION

WINNERS

1 Customers – lower access barriers

2 Regulators – greater visibility and control

3 Merchants – elimination of distance barrier

LOSERS

4 Telcos – infrastructure

5 Financial services, especially banks, that are not innovative

## ASSESSING OUTCOMES – MONETARY POLICY, FINANCIAL STABILITY & FINANCIAL INCLUSION

Digital financial services take off has had the following effects:

1 Improved visibility of economic activity

2 Enhanced the saving culture and aided in credit accessibility

3 Disintermediated uncompetitive players

Mobile financial services have evolved rapidly in Africa since M-Pesa was launched in 2007. Some "leapfrog markets" have made remarkable advances in delivering access to financial services for the previously excluded masses. Countries that have built the basic infrastructure are now able to deliver a much larger range of services over existing and new integrated payments infrastructure. Other "aspiring markets" will need to focus on building the "distribution rails" for a number of years before they can do the same. Variation by country is driven by a multitude of factors, including mobile phone penetration, financial and conventional infrastructure development, population density, regulation and the appetite of private players to pursue the opportunity.

The good news is that the region no longer has to look to Kenya as the only example of successful mobile money in the continent. The role of innovation is important in this process, as it will continue to stimulate improvement in the rapidly evolving mobile money ecosystem and provide new opportunities for those willing and able to seize them. Process innovation will make existing infrastructure work better for operators and consumers.

The mobile money landscape may look very different in ten years, but what seems beyond doubt is that we are at the starting point of a fundamental change in how financial services are delivered to the mass market in Africa and innovation is helping to drive that change. In a global market place, innovations developed anywhere in the world can rapidly be adopted and shaped to local conditions, creating a virtuous cycle that will benefit consumers at all income levels, regardless of the continent they live in.

# Where is the Frontier Now for Mobile Banking in Africa?

**Claire Alexandre**

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Much of the economic progress over the past decade in Africa owes greatly to mobile services. Across the continent, men and women lead easier and more productive lives through increasingly versatile mobile devices. Companies too benefit from mobile connectivity, with increased efficiencies and service levels. The recent growth in the financial services sector is no exception: thanks to mobile communications, a market, which had long been the privilege of a few well-off, is now within reach for large segments of the population. Mobile Financial services or Mobile Banking, contribute to the progress of financial inclusion: the latest FINDEX data suggests 500m individuals gained access to formal financial services in the last three years[21].

As a subset of Mobile Banking, Mobile Money has developed strongly in the last 10 years. It does not require a nominal bank account and enables the account holders to use their mobile to transact and store value. The GSMA records more than 250 deployments in 89 countries. In 16 of these countries, there are more mobile money accounts than bank accounts[22]. The African subcontinent is leading that wave, with the largest proportion of deployments.

Many mobile money services are modelled on M-Pesa, which Vodafone rolled-out with Safaricom in Kenya in March 2007. Since then, Vodafone and Vodacom deployed 7 other mobile money operations in Africa under the brand name M-Pesa or Vodafone Cash. Ghana is the latest country to have been added. In September 2015, Vodafone reported 23.4m active users globally[23]. The approach remains broadly the same: identify a strong set of non-face to face cash transactions to start with, deploy a ubiquitous distribution network to facilitate registrations, cash-in and cash-out as well as roll-out an intense programme of 'below-the-line' marketing activities to raise awareness, educate users and maintain trust.

Once a mobile money service starts to pick-up, as seems to be the case now for M-Pesa also in DRC and Mozambique, it becomes easier to add new payment and transfer functionalities. Customers are used to their mobile money account and more likely to adopt the new use cases. While each market is different, Vodafone experience with M-Pesa tends to suggest that the key to success lies in identifying an essential customer need and focusing on it. Markets with 'impatient capital', too many propositions launched at once and a poor customer experience are likely to do less well. Equally, starting with 'over the counter' transactions favours short term wins over long-term growth. These transactions are performed by agents rather than by the customers using their own mobile phone. While looking attractive as they boost activity numbers, they do not promote the use of accounts and reduce the potential to grow the number of services. Customers are not empowered to transact independently and do not benefit from as much convenience and privacy.

Many mobile money deployments often start with a consumer focused proposition and then evolve to offer collection services for companies or facilitate disbursements of salaries, benefits or expenses. In the last year, many mobile money service providers have added the functionality to receive as well as send International Money Transfer. And in the more mature markets (Kenya and Tanzania), banks are increasingly connecting mobile money components to their own services: many offer their customers to link their bank account to their mobile money account and thereby benefit from real-time mobile money transactions. Some banks even bet on mobile money accounts to become the prime interface to access savings and loans, as with the M-Pawa service in Tanzania or M-Shwari in Kenya. All in all, mobile money enhances the appeal of banking products while reducing the number of customers in bank branches.

Another essential success factor for mobile money is an enabling regulatory framework. As for any type of investments, legal certainty is important to mobile money and the endorsement of the central bank also plays a role to reinforce trust. In the absence of regulatory framework for this new type of service in many markets, financial services regulators have adopted different approaches: either accompanying the development of the service by closely overseeing each single step, while new regulation was drafted and adopted (as in Kenya or Tanzania), or accelerating the definition of new regulation to ensure it was implemented before the launch of the new services (as in DRC, where new rules where adopted in less than a year). In Mozambique, the existing regulatory framework was flexible enough to enable the central bank to directly regulate mobile money service providers. The same situation played out in Ghana, where the central bank also introduced reform to existing legislation over time, as it learned more about mobile money.

Very few countries, for instance Egypt and South Africa, have chosen instead to restrict mobile money services to already licensed credit institutions. While they encourage 'partnerships' with third parties, there is no evidence to date of the impact of this approach to foster growth of financial services. Ultimately, any regulatory framework should really remain proportionate to the risk it seeks to mitigate. It should encourage innovation and incentivise investments while managing risks and promoting reasonable conduct. Achieving that balance depends on also leadership, as the developments and achievements in Kenya and DRC demonstrate well.

21 The Little Data Book on Financial Inclusion, FINDEX, 2015, The World Bank Group.

22 GSMA, December 2014. NB. Updated December 2015 figures to be released this month.

23 In 11 markets, including India, Romania and Albania.

Looking ahead, the attractiveness of mobile financial services makes little doubt. A greater number of service providers are seeking their share of the market: in addition to new entrants such as mobile service providers, and to banks finally going down market with mobile solution and new models of distribution, 'Over-The-Top' players from the traditional card space or the newer social media environment are also moving in, thanks to the greater digitalisation of services. It means increased competition and the prospect of greater services and choice for users.

For regulators, a challenge will therefore be to maintain a truly service based regulatory framework, focused on the qualities and risks of mobile financial services rather than an institution based framework mostly concerned with the type of entities offering the service. The former approach does not encourage innovation and tend to protect incumbents. The latter promote growth and competition.

# Africa's New Technologies: Financial Inclusion and Reduced Financial Crime

## Guilherme Silva

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International banks reduced their presence in Africa after the 2008 financial crisis due to new global regulations and their decreased appetite for risk. This shift opened up opportunities for non-bank institutions such as technology and mobile companies to step in and offer basic banking services such as cash transfers and payments. Millions of Africans enjoyed financial services for the first time. But progress will only continue with more robust controls against financial crime.

The financial crisis of 2008 triggered a range of new regulations aimed at restoring the stability and confidence in the global financial system. Regulators around the world have focused their efforts on four main areas: 1) increase Bank's capitalisation and their capacity to absorb shocks; 2) reduce systemic and banks' specific risks; 3) secure customer protection and transparency in the provision of financial services; and 4) ensure that financial system and institutions are not used by criminal groups.

The tightening in control led to hundreds of business closures and divestments by international banks in emerging markets with important side effects for African countries where the limited local banking network was not ready to replace international banks and cope with new regulations. A roundtable report published by the Global Economic Governance programme at the University of Oxford in June 2015 highlighted that in the case of Angola, one of the top five largest economy in Africa, new regulatory initiatives in Europe and North America caused significant spillovers effects, especially to Angola's financial sector.

And Angola seems not to be an isolated case. Unable to fully implement new international global standards and anti-money laundering (AML) provisions, some countries in Africa such as Algeria, Morocco, Namibia, Nigeria, Sudan, and Zimbabwe were initially included in a 2010 Financial Action Task Force (FATF) list of non-compliant jurisdictions, which prompted a number of international banks to reduce or stop essential services such as bank notes distribution or keep basic interbank correspondence with local banks.

The reduced interest of international banks in Africa was exacerbated by pressure from European and American regulators on western banks, especially the ones that received government support after 2008 crisis, to focus their businesses on domestic clients instead of sending "tax-payers money" abroad.

The gap left by global banks opened up many opportunities for technology-savvy non-traditional banking groups such as mobile companies offering cash and payments services to the local community. Telecommunication companies brought innovation to the industry and financial inclusion of millions of people. Kenya has been an example where constructive business and regulatory environments have allowed mobile banking networks to flourish and where over 70% of adults use mobile phones to send or receive money.

But increased financial services penetration and network reach also meant greater difficulties in identifying potential money laundering activities, following global standards and capturing illicit financial transactions. African governments have now an excellent opportunity to set public policies in order to create incentives for technology companies to bring innovation to existing compliance and financial crime controls.

In the United Kingdom, United States, Hong-Kong and Singapore, to name a few, there are technology start-ups such as Jumio and Tradle with innovative *Know-Your-Customer* (KYC) procedures that use biometric data, such as face recognition, iris and fingerprint identification, and geo-political location to replace or complement the traditional proofs of identification and address/postcode required by banks.

Within this new financial services paradigm, KYC is no longer a matter of identification and analysis of static personal data, but rather a matter of constant real-time analysis of personal behaviour. Start-ups such as CrediSeva in India runs pilot projects combining National Bureau Credit scores with social data from Facebook, LinkedIn, Google searches, and on-line shopping behaviours to determine customer profile, customer segmentation, credit scores, and their capacity and willingness to pay.

Technology companies also aim to address regulatory challenges related to suspicious transactions and behaviours linked to money laundering and terrorism financing as well as situations when enhanced due diligence is required. By using artificial intelligence techniques, companies like World-Check (bought by Reuters) search through hundreds of thousands sources, sanctions-related records, watch- and regulatory-lists to find suspicious patterns - and companies like Iovation go a step further linking those sources and data with customers devices' IPs to reduce the risk of identity fraud during enhanced due diligence searches.

However, increased technology sophistication and greater quantities of customer data also create greater challenges regarding the appropriate use of those data, both from a commercial as well as ethical perspective. Does a mobile company have the right to use private information about customers' friends and family members? To what extent? Is it ethical for companies to cross-sell products using people's preferences and behaviours?

There are also concerns on how customer information is handled and safely stored by technology and mobile phones

companies. In October 2015, the phone and broadband provider TalkTalk in the UK was victim of large-scale cyberattacks, which captured and compromised names, addresses, phone numbers, emails, date of birth, TalkTalk account details, and credit card and bank details of four million customers. The storage of biometric information and customer behaviours might represent even greater incentives to fraudsters and cyber-attackers and pose greater threats to the financial system.

Data privacy and consumer protection are key variables on which both entrepreneurs and regulators should focus amid the current financial service disruption, but as newcomers and experienced old incumbents join forces, those challenges should be overcome. The recent partnership between bitcoin company "Chain" and American stock exchange Nasdaq for trading shares in private companies is an example of it. Other companies such as Visa, Orange and Citigroup have also decided to sponsor and support bitcoin start-ups – betting that the underlying technology behind Bitcoin (called "Blockchain") can have numerous applications to financial and banking businesses.

Financial regulators around the world are also moving from skepticism towards open support to the financial technology start-ups (FinTechs), given the potential benefits that the new technologies can bring to society and citizens. Bitcoin/Blockchain is an example. Out of 10 companies selected for a FinTech incubator program in 2015 co-sponsored by the Government of Singapore (and mentored by MAS, Monetary Authority of Singapore), 6 were related to Bitcoin or Blockchain. Similarly, the United Kingdom has agreed on a "sand-box" with lighter and simpler rules for new technology start-ups trying to enter and compete in the financial services industry.

Technology start-ups do welcome when regulators step in and regulate their activities or give guidelines on how they should operate. Regulation brings legitimacy to the sector, creates a clear and fair competition environment, and gives confidence to potential investors.

Governments of African countries should consider a similar approach and write policies to support financial technology start-ups and companies for at least three reasons:

1 Such initiatives will lead to financial inclusion of millions of people in a large continent where number of bank accounts and access to basic financial services are limited;

2 New financial technology is disruptive for both developed and emerging nations and it will allow emerging nations to leapfrog a number of existing process followed by developed nations which are becoming redundant;

3 Adoption of new and more robust ways to consider KYC, AML, CFT, customer due diligence, will cover an important gap within Africa's financial systems and could break the key barriers for African companies and Banks to fully participate in international financial and capital markets.

In addition to the above commercial reasons, constructive environments for innovative financial technology will allow African governments to have robust oversight over financial transactions and quality information unmatched even by western standards. This will help reducing the risk of financial crime globally and provide African governments with the upper hand in negotiations of financial markets regimes at the international level.[24]

24Thanks to the comments from Felipe Serrano and John McDermott.

# How Can Regulation Protect Customers' Funds?

**Jonathan Greenacre**

University of Oxford

A key regulatory issue in mobile money involves determining *how to protect customers' funds* that are held by a non-bank mobile money provider (Provider). This topic has gained an increasing amount of academic and industry attention. Most recently, the GSM Association has released a set of guidelines on this topic, titled 'Safeguarding Mobile Money: How Providers and Regulators Can Ensure That Customer Funds Are Protected' (January 2016).

A number of regulatory questions require examination. They can be organised in relation to the three key risks to customers' funds, as outlined below.

## 1. INSOLVENCY RISK

This is the risk that the Provider becomes insolvent and customers' funds are claimed by third party creditors. The following regulatory questions require investigation:

- Trust arrangements are often imposed in common law countries to protect customers' funds in the event the Provider becomes insolvent. What comparable protections can be used in *civil law countries* where trusts are not available?
- In most countries, a Provider is subject to normal insolvency laws. This means if it becomes insolvent there may be a significant delay in returning customers' funds. Should a Provider be subject to the type of *accelerated insolvency regimes* applied to a bank? If so, what should such an insolvency regime look like?

## 2. LIQUIDITY RISK

The Provider may have insufficient funds to repay customers. Regulation often requires a Provider to store customers' funds in liquid assets, particularly a commercial bank. However, normal contractual relationships in mobile money do not protect customers' funds from failure of these liquid assets. For this reason:

- Does this approach eliminate a risk that customers may '*run*' to the Provider?
- Should government schemes, particularly *deposit insurance schemes*, apply to mobile money, and in what form?

## 3. OPERATIONAL RISK

Funds may be lost due to failures of the Provider's internal operations. In particular, employees of the Provider may steal customers' funds. Two key issues arise:

- Capital is normally imposed to address operational risk. However, *how much capital is required*, particularly given other regulation imposed on the Provider?
- What *other tools*, if any should be imposed on the Provider to address the potential for customers' funds to be lost through operational risk?

These questions need to be debated and answers disseminated to regulators. More informed regulation better protects customers' funds, which will encourage customers and regulators to trust mobile money.

# Consolidating Africa's Mobile Banking Revolution

**Kate Meagher**

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The development of mobile banking in Africa has confronted regulators and development practitioners with the challenge of balancing the opportunities for financial inclusion and profit against less identifiable financial risks, some of which will only become evident over time. In assessing how best to proceed, it is important for regulators to consider more clearly the scope of financial risk that regulation needs to address, and the role of regulation in promoting equitable processes of financial inclusion. Discussions of financial risk need to take more explicit account of the new players included in processes of 'financial inclusion'. In addition to the poor, mobile banking includes telecommunications firms into the heart of the financial system. It also interfaces with other dimensions of the informal financial system, which cannot be reduced to the financial circuits of the unbanked. Particularly in the context of a system targeted at the poor, regulators also need to take account of the nature of inclusion that they seek to promote. Financial inclusion can mean the beneficial engagement of poor customers in the formal financial system, or it can mean the capture of poor customers and informal financial flows on terms that are more beneficial to the financial sector than to poor customers – a kind of inclusion referred to as 'adverse incorporation'. In this memo, I will address in turn the issue of financial risk introduced by the inclusion of telecommunications companies, informal financial operators, and poor customers.

## RISKS POSED BY TELECOMMUNICATIONS COMPANIES

The inclusion of telecommunications companies into the heart of the financial system creates new types of risk that deserve explicit regulatory attention. While some World Bank papers have suggested that involvement of telecommunications companies reduces the financial risk and requires less regulation, it also introduces some new risks. One of these is to increase the vulnerability of the financial system to a 'run on the bank'. Instability in the mobile money operations of a telecommunications company, or news that the company may close its mobile money operations, which are not part of its core business, could trigger a mass withdrawal of funds by account holders. Since the banks holding these funds are allowed to lend them out, a mass withdrawal of funds would represent a risk to the financial system. A further concern posed by the incorporation of telecommunications companies into the financial system is the ownership of the data created by mobile banking. In Somaliland, the Telesom, which owns the mobile money system, Zaad, now has more financial information than the Somaliland Ministry of Finance, and issues are being raised about whether this is proprietary information belonging to Telesom, or must be shared with the Ministry of Finance. Regulators would need to consider the implications of introducing private companies not governed by financial regulations into the heart of the financial system.

A further source of risk relates to the future uses of mobile banking already being developed by telecommunications and related private companies. Mobile banking is an exercise in the unforeseen. It developed in Kenya as a result of unforeseen consequences of unorthodox use of an earlier payment system developed by Safaricom as part of a micro-finance programme, and owes much of its success to unforeseen developments in the expansion of the agent network (Foster and Heeks 2013). Effective regulation of mobile banking must therefore focus not only on its payment and storage functions, but on the potential future uses to which mobile banking systems may be put. Many current models are explicitly focusing on how to turn mobile banking into a lending platform. Any regulatory system that argues that regulation only needs to cover payments and storage is ignoring an explicit objective of many models that are currently being developed. Explicit engagement with the lending models already on the table, if not yet actualized, will help regulatory systems stay in step with upcoming developments, rather than playing catch-up, which poses greater risks to financial stability.

## RISKS ASSOCIATED WITH THE INFORMAL FINANCIAL SECTOR

A further dimension of financial risk involves the interaction of mobile banking with the wider informal financial system. Informal financial systems involve more than the finances of the unbanked. There is a need for regulators to give more consideration to the structure of the informal financial system within which mobile banking is emerging. A complex informal financial ecosystem exists in many African countries, including hawala systems, parallel currency markets, and informal credit systems, which not only continue to operate, but may make their own use of mobile banking (Hashim and Meagher 2001; Lindley 2009; Iazzolino 2015). In Kenya, Uganda and Somalia, some people use mobile banking to pay into, and to pay out transfers from, hawala money transfer systems. Money moves into the formal financial system through mobile banking, and back out of it into the informal financial system for cross-border transfers to more distant places. Inadequate awareness of the informal financial system creates the risk that regulators will fail to anticipate, or to notice, some of the uses to which mobile money is being put, and their implications for financial stability. It also raises the prospect that regulators will fail to notice potential synergies between the formal and informal financial systems that may increase efficiency and inclusive effects through symbiotic engagement with informal financial systems and payment networks.

## FINANCIAL RISKS FOR THE POOR

The explicit aim of mobile banking to provide financial inclusion for the poor means that financial regulation to ensure the stability of the system needs to be combined with consumer protection to safeguard the interest of very poor customers dealing with complex financial products (Mas 2012). Genuine financial inclusion requires that attention to financial risks be extended to a consideration of the risks posed to poor customers. As such, any discussion of enabling regulation must confront the question: enabling for whom? Much of the discussion of enabling regulation focuses on arrangements the promote innovation and profitability. An emphasis on light touch regulation to maximize innovation, and demand-led pricing tend to put the interests of profit over those of consumer protection. While mobile banking offers a range of conveniences and savings for poor customers, the need for consumer protection is significant in a complex, highly monopolistic market. Innovations such as deposit arrangements in which one deposits for free, but must pay to withdraw raise questions of the needs and rights of poor consumers. The highly monopolistic structure of Kenya's mobile money system also raises concerns about the vulnerability of poor customers to the closure of mobile banking systems through bankruptcy or exit from the mobile money segment of the business. Inclusion is not only about including the money of the poor, but calls for regulation that protects their interests and rights as well.

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# Consolidating Africa's Mobile Banking Revolution

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Since I have not done any original research in the area of mobile banking, I will limit myself to a few general points.

The innovation of mobile banking is nothing less than phenomenal. Hopefully, it will have far-reaching consequences on the poor of the world. Yet, a word of caution may be at place. So far, we have seen the creation of a payment system with the ability to penetrate to geographical regions and to populations that, so far, could not benefit from the conventional banking services. Financial history teaches us that a well functioning payment system is the most basic structure in any financial system and, absolutely, a necessary condition for the development of more sophisticated institutions: credit, insurance, equity markets etc. But financial history also teaches us that the transition from payment to sophisticated institutions is neither simple nor automatic. It involved experimenting with additional innovations, some of which were successful, others have ended with financial scandals and disasters.

Do we need to regulate the new industry? Starting from basics, the role of regulation is to remove externalities. An externality arises when party A trades with party B, to their mutual benefit, but parties C, D, E ..., who do not participate in the trade, are affected. The effect can be either positive or negative. Financial markets externalities appear in two main types. First, a large number of similar trades need a common input, that no individual trader would have the incentive to pay on his/her own, for s/he would bear all the cost but only part of the benefit. A regulator could provide the input, charge all the traders and remove the (positive) externality. Paradigmatic examples include, monitoring the action of managerial performance, borrowers viability (on behalf of many creditors) or the quality of a certain service used by many. Second, parties A and B generate a "pecuniary externality": their trade affects market prices, in a way that does not fully reflect the effect on other trading parties. Paradigmatic example: a bank repossess and "fire sells" an asset at a price lower than its value to the borrower (who is short of the liquidity to pay off the bank); moreover, doing so the bank pushes the fire sale price down, triggering more value-destroying repossessions.

Clearly, the first type of externality exists in mobile banking. All users of the system needs to monitor the operational safety of the system: that the hardware is reliable, that no records are lost, that the operator has enough capital to pay the programmers even when it loses money, that fraud and hacking protection is up to standard. But no user, on his own, can bear the cost of doing so. The regulator can, on behalf of all users.

It is not clear that the other externality is material, for two reasons: the magnitude of mobile banking is too small at this stage, and the type activity - payment services - does not directly create the price effects that appear in, say, fire sales. Second, even if there are such "macro" effects, there are other regulators, particularly Central Banks, that already have the powers and the techniques to deal with such problem.

# The Brazilian Experience of Regulating Equity Crowdfunding Platforms

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## BACKGROUND

The average size of companies invested in by private and venture capital funds is relatively high in Brazil (the investment of PE&VC funds is hardly ever smaller than US$10 million). Despite the recent creation of associations of angel investors and some seed capital funds, the reality is that Brazilian start-ups – and even medium-size companies – have very limited access to equity investors.

Since 2013, 5 crowdfunding sites were created with the goal of publicly offering bonds convertible into shares of start-ups[25]. On average, the successful offers have had the participation of 40 investors and total investment of US$75,000 (information publicly provided by Broota platform).

- Existing regulatory framework: offers of securities from enterprises with revenues of less than US$1 million are exempt from the obligation of previous registration in the Brazilian Securities and Exchange Commission ("CVM") if the value of the offer is of less than US$500,000. Moreover, no financial institution is necessary to intermediate the offer in the case of this exemption, what reduces the costs of the process but increases the risks (the crowdfunding platform does not have similar responsibilities of due diligence in relation to the information provided by the company to investors).
- Competition/innovation and consumer protection trade-off:

Crowdfunding platforms tend to occupy a niche that is not well-explored by financial institutions/broker dealers because those sites have smaller regulatory burden and a more automated model of business. The platforms also represent an alternative to venture funds, where they do not exist or when entrepreneurs prefer to maintain the greatest control possible of their business (crowdfunding investors are much less active than venture capital fund managers). As a result, the potential for start-ups finding equity investors and eventually being successful companies is likely higher if an environment with efficient crowdfunding platforms is created.

There are three main risks of the crowdfunding offers (in relation to traditional ones): (i) the existence of less gatekeepers increases the risk of fraud in the information provided to investors (no financial institution and no review of the offering documents by CVM); (ii) the formation of price is much less efficient, given the typical profile and small number of investors involved, what increases the risk of the investment; (iii) start-ups are riskier than more mature company.

The great challenge of regulating crowdfunding offers is, therefore, to mitigate the abovementioned risks without eliminating the comparative advantage of the crowdfunding platforms that make them a useful instrument for the growth of start-ups.

### STAKEHOLDERS:

- Financial institutions/broker dealers: they do not have much interest in the market of financing start-ups and, therefore, are not a relevant stakeholder.
- Crowd-funding platforms: they would like to have some specific regulation so that they could claim that the investors are "protected by the state", but they are afraid of increasing compliance costs. Given their current small economic relevance, they do not have actual power to influence the regulatory process (just to the extent that they can convince the public of the potential relevance of crowdfunding for the economy).
- Start-up enterprises and potential investors: they have interest in the development of the crowdfunding market, but there is a clear collective action problem. The only representation that those groups have is made by an association of angel investors and by some small law firms that are active in this market (both without real power to influence the regulatory process).
- Capital Markets Regulator ("CVM"): for historical reasons beyond the scope of this memo, CVM is usually regarded as partially responsible whenever investors suffer great losses. Therefore, one of its main interests is to limit the possibilities of highly risky operations in the capital markets.

### CURRENT STALEMATE:

After some months of study and discussion with the public, CVM has elaborated a series of proposals to regulate the crowdfunding platforms, such as limiting the universe of potential investors (to accredited investors or, in the case of retail investors, to a small amount of money) and demanding more transparency from the start-ups (financial information/business plans reviewed by registered accountants). The reaction of the existing platforms to these proposals was considerably negative and, given the internal resistance to facilitate the growth of this market by the department responsible for the supervision of public offerings, the decision was to postpone the enactment of any new regulation.

25 The reason why they offer convertible bonds – and not shares – is due to a mere legal technicality. In practical terms, it is as if they were offering the shares (the bonds usually have a small nominal value).

# The Dynamic Role of Regulators in Africa's Mobile Banking Revolution

**Dr Alfred Hannig, Mr Alexander Davis, Mr Robin Newnham**
**Alliance for Financial Inclusion (AFI)**

When it comes to digital financial inclusion and uptake of mobile money, Africa has established itself as a global leader. While the 2014 World Bank Findex data shows that Sub-Saharan Africa (SSA) countries have comparatively low rates of adults having access to accounts at financial institutions, this region is far ahead of others both in the number of mobile money deployments and the volume of mobile money accounts, where 9 of the top 10 countries for mobile money account usage are located.[26] This great success is the result of innovative market developments enabled by the foresight and proactivity of African financial regulators, who saw early the opportunity to foster inclusion gains through adoption of innovative technologies.

Data analysis conducted by our partners and peers demonstrates the dramatic progress that has taken place in the continent, and is worth mentioning here. According to GSMA, a partner in AFI's Public-Private Dialogue platform, mobile money is now available in 80% of countries in SSA, with over 62 million active accounts. The latest figures show that over 480 million transactions worth more than 10 billion USD take place each month. Cote d'Ivoire stands out particularly with more than 4.5 million active customers and a transaction value of over 4.6 million USD. It is far from a controversial position to assert that mobile money, either on its own or interfacing with an account at a financial institution, is largely responsible for the inclusion gains seen in the region, and plays a key role in driving growth.

However, leaders in the region are eager to make even more impressive gains. Continent wide, African regulators, as part of their membership in the Alliance for Financial Inclusion (AFI), are committing to ambitious financial inclusion objectives in three main areas: (1) moving towards full but responsible financial inclusion; (2) closing the gender gap in financial inclusion; and (3) taking advantage of global leadership in digital finance to encourage further uptake and innovations.

While the benefits of greater financial inclusion are wide-ranging, African regulators have long recognized that they must promote responsible inclusion, rather than access at any cost. Demand-side issues such as financial education and consumer empowerment are especially important when considering that for many consumers and especially women, the simplicity and convenience of digital finance products offer an entry point into the formal financial system. With the 2014 World Bank Findex reporting no significant reduction in the rate of exclusion for women compared to men, regulators are recognizing the need to promote initial inclusion through channels such as digital financial services (DFS), from which uptake of more sophisticated and comprehensive products could follow suit. AFI's members in the Sub-Saharan African region have shown particular leadership in conceptualizing ways for all players in the financial inclusion sphere to make meaningful, measurable impact, showcasing successful policy solutions at AFI events such as the high-level conference women's financial inclusion held in Cote D'Ivoire, as well as at AFI's 2015 Global Policy Forum in Mozambique, where the importance of capturing gender-disaggregated data was emphasized. It is also worth noting that the number of women members in AFI's Consumer Empowerment and Market Conduct Working Group (CEMCWG) outnumbers that of any other Working Group.

Technology will play a key role in strategies to address these issues, but digital finance should also be considered as an independent area for action. Far more than simply facilitating easier access to traditional financial services, digital finance is driving growth across the region through ground-breaking channels and new products. Africa is setting the standard globally in this regard, including for advanced economies. For example, the world's deepest penetration of mobile money is found in East Africa, an achievement which has been widely celebrated by major development institutions. But we are now also seeing great strides in West Africa, particularly with mobile cross border transfers, demonstrating that the risks associated with cross border transactions can be mitigated without dampening the growth or uptake of DFS. Facilitating greater volumes of cross border transactions will be essential to continue progress, alongside new innovations such as the adoption of Government to Person (G2P) payments via mobile money.

At AFI, we see a clear path for institutions in the region to reach these goals. We believe that making national commitments to financial inclusion is a first, essential step for countries seeking to reduce financial inclusion gaps. As part of the Maya Declaration initiative, AFI members make measurable commitments in key areas proven to increase financial inclusion access, including to create enabling environments for harnessing new technology that increases access and lowers the cost of financial services. DFS is the thematic area with the highest number of commitments to the Maya Declaration in the African region, with 15 national institutions making a total of 33 commitments since 2011. For example, rising leader BCEAO (the Central Bank of West Africa) has committed to "renew the legal framework related to electronic money to take into account emerging sectorial challenges

26 Top 10 countries with highest % adults using a mobile money service in the past 12 months (in descending order): Kenya, Somalia, Uganda, Tanzania, Cote D'Ivoire, Zimbabwe, Botswana, Rwanda, South Africa, Cambodia (Source: 2014 World Bank Findex).

and technology evolutions, while reinforcing consumer protection." Bank of Tanzania has already met objectives for commitments to implement interoperability solutions for efficiency and affordability, and to promote the development of agent banking. These Maya commitments have led to concrete policy changes and greater inclusion, such as Bank of Ghana's commitment to revise its payment system strategy to promote financial inclusion resulting in the adoption of revised E-Money Guidelines enacted in July 2015.

As members of the AFI network, institutions in Africa are also engaging with their peers around the world. AFI facilitates this global dialogue through a number of initiatives, including Joint Learning Programs such as those organized by the Central Bank of Kenya for AFI members from seven Latin American countries. African institutions are also bringing their expertise and learning to AFI's Working Groups, which bring together technical staff from across the AFI membership. AFI's Digital Financial Services Working Group (DFSWG) organizes discussion and knowledge exchange among its members to identify the risks of DFS business models, and to determine suitable regulatory and supervisory practices. Currently, it is the largest among all AFI Working Groups comprising 59 policymaking institutions representing 52 countries. It is worth noting that African members have a strong participation within the DFSWG with 25 member institutions representing 23 African countries. In terms of issuing innovative regulations that are up to date with the industry's rapid pace of evolution, the DFSWG has witnessed the impressive progress Africa has made. In recent Working Group meetings, financial regulators from Tanzania, Ghana, and Madagascar presented their draft regulations to be subjected to peer review processes in which other specialists from different regions of the world provided feedback to enhance the final regulations to be enacted.[27] For instance, Madagascar's Draft Law on E-Money and E-Money Issuers was reviewed by policy makers from Colombia, Russia and Kenya.

As the AFI network matures, the importance of a focused regional approach has become apparent to amplify the impact of national commitments and global engagement. Building consensus at the highest levels of institutions in the region is essential to compliment and ensure the sustainability of technical-level collaboration. This understanding led to the establishment of African Mobile Phone Financial Services Policy Initiative (AMPI) for AFI member institutions in Africa to provide high-level leadership in the overall development of DFS policy and regulatory frameworks, and to coordinate efforts of regional peer learning. The platform has been the catalyst for a number of important DFS regulatory developments, including a decree on agent banking in Mozambique which led to the establishment of a single national payment switch to ensure interoperability, the expansion of DFS and mobile money in WAEMU and specifically Cote D'Ivoire (host of the 2015 AMPI meetings), as well as joint e-money partnerships between telco operators and banks.

Regulators are being rightfully recognized for their essential contribution to increasing inclusion through widespread uptake of DFS, but challenges remain. Interoperability and cross border payments pose unique challenges for regulators, requiring extensive collaboration and consensus with different regulatory institutions in their own countries as well as that of their neighbours. While there is great potential in DFS to empower women, limited individual ownership or control of mobile phones by women is hampering uptake. To meet broader inclusion goals, DFS must expand beyond the household-level to leverage partnerships and expand SME finance. Regulators must also grapple with risks posed by DFS without stifling innovation, including KYC and AML/CFT record-keeping requirements, and the growing sophistication of fraudulent and criminal use of DFS in markets with the deepest penetration.

Fortunately, peer learning is equipping regulators with policy solutions to counter these obstacles as they emerge, or even before they affect new markets. AFI Working Group members have proposed "letters of no objection" to be signed by different players at the regional level to facilitate the growth of cross border payments. With regard to interoperability, many AFI members in the region have come to the joint understanding that rather than pushing for interoperability, allowing it to grow into markets helps ensure a level playing field. To face emerging issues such as how to properly educate consumers about the risks of digital credit, members are sharing their experience with innovative behavioural research methods such as mystery shopping to inform the development of new regulations.

There is also a growing global effort to meet these challenges. In 2015 the Addis Ababa Action Agenda (AAAA) on Financing for Development was ratified by the United Nations General Assembly. The AAAA commits Member States of the UN to "work towards full and equal access to formal financial services… encourage the use of innovative tools, including mobile banking, payment platforms and digitalized payments… [and] expand peer learning and experience-sharing among countries and regions, including through the Alliance for Financial Inclusion and regional organizations". We believe that acting now to ensure institutionalization of a peer learning platform for digital financial services development in Africa can and will be a catalyst for inclusive growth across the continent for years to come.

The next step for regulators to effectively leverage peer-learning platforms like AMPI is to go beyond semi-annual meetings and informal sub-networks. For consensus to be reached on solutions to well-known obstacles, key players in the region need to work on formalizing collaboration and specific targets must be set. The institutionalization of

27 Tanzania 2015: Electronic Money regulations 2015 (reviewers: Malaysia; Philippines; Perú; Bangladesh, Russian)

Madagascar 15: Draft Law on E-Money and E-Money Issuers (Colombia, Russian, Kenya)

Ghana 15: Guidelines for E-Money issuers in Ghana (reviewers: Malaysia; Philippines; Perú; Bangladesh, Russian)

regional platforms like AMPI will allow regulators to fully play their role in achieving inclusive digital financial ecosystems across the continent, provided there is local ownership, a clear cooperation framework and a strategic plan. A permanent physical presence in the region with dedicated funding will ensure that responsibilities and expected deliverables are monitored on a consistent basis, and are linked to AFI's Working Group output as well as global initiatives overseen by AFI and other partner institutions such as the World Bank. By working together through AMPI, African regulators can combine their knowledge and experience to remain global leaders in digital finance.

# Consolidating Africa's Mobile Banking Revolution: The Case of Zimbabwe

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BACKGROUND

The mobile banking industry in Zimbabwe has undergone significant transformation over the last few years in terms of the type of transactions, volumes, values and competition. This metamorphosis has revolutionised delivery channels in the financial services sector.

Like in many countries in the region, banking institutions have leveraged on the high mobile phone penetration rate by partnering mobile network operators (MNOs), to offer a wide range of financial services to different market segments, including the previously unbanked, low income earners, and the rural population.

The FinScope Consumer Surveys conducted in Zimbabwe indicate a significant improvement in the proportion of the population accessing formal financial services from 38% in 2011 to 69% in 2014, largely driven by mobile financial services.

These developments have had significant impact and implications on the legal and regulatory framework as well as financial stability and monetary policy transmission. The regulatory authorities have now taken measures to develop a comprehensive regulatory framework that facilitate deepening of digital financial services while promoting stability and effective consumer protection.

## THE STATE OF MOBILE BANKING SERVICES IN ZIMBABWE

Zimbabwe has adopted a bank-based mobile financial services business model, in which the customers have contractual relationships with the bank and Mobile Network Operator and the banking institution is licensed by the regulator to provide the financial services.

There are four (4) mobile network operators and 14 participating banking institutions in Zimbabwe.

According to the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ), the number of active mobile phone reached 12.4 million as December 2015 against a total population 13.8 million (2014).

| Indicator | Dec 2015 | 2014 | 2013 | 2012 |
|---|---|---|---|---|
| **Volume of mobile transactions** | 228.2m | 123.76m | 119.14 m | 19.96 m |
| **Value of mobile transactions (USD)** | 4.65bn | 3.6bn | $2.09 b | $381.61m |
| **Mobile phone penetration rate** | 92.8% (active) | 90.3% (active) | 84.3% (active) | 97% (total) |
| **Mobile phone subscriber base** | 12.4m (active) | 11.8m (active) | 11.01m (active) | 12.6m (total) |
| **Number of mobile platforms** | 4 | 3 | 3 | 3 |
| **Number of banking institutions offering mobile banking services** | 14 | 20 | 20 | 18 |

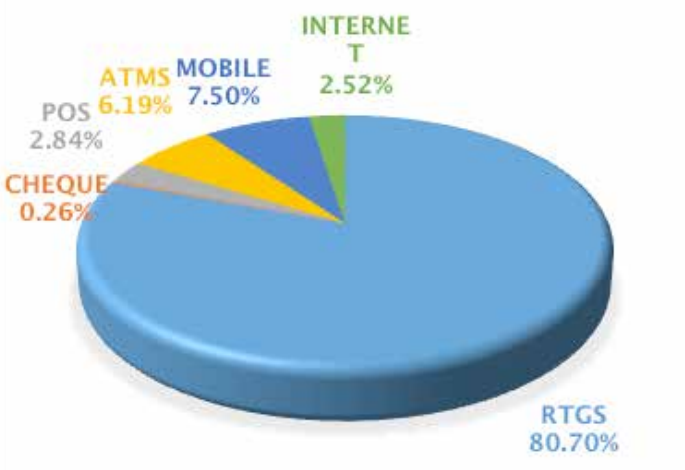
**As a result the mobile penetration rate has reached 92.8 percent as 31 December 2015 compared to Africa's average of 75% (2014).**

Against this tele-density background, the banking sectors has capitalised on advancements in the mobile and telecommunications sector. As at 31 December 2015, the combined mobile money subscriber base had reached 4.6 million, with more than 38,745 mobile payment agents across the country, up from 6,000 agents in 2013. The volume of mobile banking transactions increased from 19.96 million in 2012 to 228 million in 2015, while the value of mobile banking transactions also increased from USD381.61 million in 2012 to USD4.6 billion in 2015.

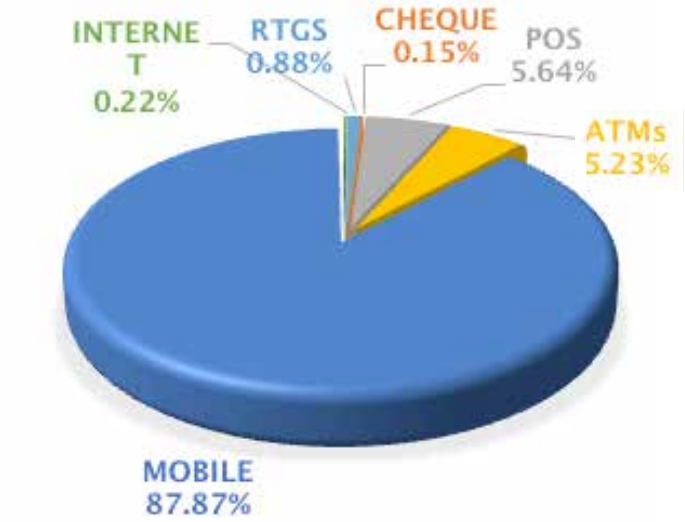
Mobile financial services providers have expanded their product range to include micro-savings, micro-credit, micro-insurance (funeral, health, agricultural) and educational products.

The diagrams below indicate that mobile money transactions constitute 87% of total transaction volumes as 31 December 2015 while it comes second at 7.5% in terms values.

Transactions Values (%) – December 2015




Transaction Volumes (%) – December 2015




Mobile Banking Services in Zimbabwe have provided access to financial services and acted as an avenue for bringing the savings of the poor into the formal financial system. Further, the large number of low cost deposits provides cheap sources of funding for the banking sector.

Meanwhile there are also challenges associated with mobile banking that have to be addressed, as outlined below:

a) Digital financial inclusion introduces new market participants and allocates roles and risks in different ways compared to traditional approaches to retail financial service delivery.

b) Digital technology-related operational risks – including; accuracy and reliability of data, complex and confusing user interface, particularly with the formerly unserved or underserved.

c) Agent related risks – such as insufficient liquidity of float, non-transparency of fees and charges, and inadequate data privacy and protection;

d) Financial crime-related risks such as theft, fraud and non-compliance with anti-money laundering and combatting the financing of terrorism (AML/CFT)

Cognisant of the risks that are attendant to digital financial services, the Reserve Bank of Zimbabwe requires that all MNOs to submit a comprehensive risk management framework which clearly identifies the inherent risks and the mitigations in place.

In addition, Reserve Bank of Zimbabwe requires that all banking institutions seek regulatory approval before introducing new products.

## REGULATORY FRAMEWORK SUPPORTING MOBILE BANKING SYSTEM

The Reserve Bank has a broad mandate to protect the banking public and to ensure stability and soundness of the financial system. The Banking Act [Chapter 24:20] contains provisions requiring institutions to adhere to and comply with proper risk management practices in line with international best practice.

In addition, the National Payments Systems Act [Chapter 24:23] empowers the Reserve Bank to monitor and regulate the payment system activities in order to ensure compliance and financial stability.

Cognisant of the need to enhance the current framework for mobile financial services, the Reserve Bank of Zimbabwe is currently developing a comprehensive regulatory and oversight framework for mobile financial services. Regulatory authorities intend to create a conducive environment that provides an impetus to more financial innovation while at the same time cognisant of consumer protection and financial stability issues.

## MEASURES TAKEN TO FACILITATE DEEPENING OF DIGITAL FINANCIAL SERVICES

In order to keep in step with the developments in the area of mobile banking, the Reserve Bank is developing specific guidelines and oversight framework to govern the operations of mobile financial services providers.

The overarching objective is to enhance the effective governance of payment systems which should provide direction for effective regulation of payment systems and provide minimum risk management measures to enhance financial stability.

The regulatory framework covers specific aspects of digital financial services - such as e-money issuance, agent networks, know-your-customer (KYC) and customer protection.

The Reserve Bank of Zimbabwe is also championing the development and implementation of the National Financial Inclusion Strategy with **innovation** as one of the pillars. To ensure broad-based access, the Reserve Bank is working closely with other financial services providers, including MNOs to develop products and services that promote access to financial services by the low income and marginalised groups.

Further, the Reserve Bank is currently developing Consumer Protection Prudential Standards, which is one of the financial inclusion enablers, to promote greater transparency and minimize information asymmetry between consumers and financial service providers.

It has also been noted that there is critical need for financial education and client awareness on the responsible use of digital financial services. In this regard, the Reserve Bank is developing a Financial Literacy Framework in conjunction with other key stakeholders, including Ministries of Education, Ministry of Finance and other finance sector regulatory authorities aimed at raising awareness of financial services and ensure consumers of financial products are empowered to responsibly interface with financial institutions as well as enforce their rights.

Further, there is close collaboration with Post and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ), which is responsible for regulating MNOs, with the view to minimising regulatory arbitrage, and facilitate innovation and new product development.

The revised regulatory system should facilitate cooperation, coordination among the multiple stakeholders within the partnership ecosystem.

In addition, there regional groups at SADC, COMESA and EAC levels which provide a framework for cross-border trade, payments and retail remittances. In the SADC region for example, the Finance and Investment Protocol (FIP) guides the region in the harmonisation and development of financial services among other objectives

As highlighted in the foregoing paragraphs the mobile banking industry in Zimbabwe has realised a number of transformative changes over the last few years. Going forward, the mobile banking services sectors require an effective regulatory regime which facilitates financial innovation, competition and stability.

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