



Vodacom  
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# Future-proofing Mobile Financial Services



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# Welcome



**From Nkateko Nyoka**  
Chief Legal & Regulatory Officer,  
Vodacom Group Plc

Welcome to Vodacom's first Public Policy Series report on mobile money. Our aim is to provide a platform for leading experts to express their views on trends and developments shaping the industry.

The past years have seen unparalleled growth in mobile money operations and a range of new innovations enabling broad based participation and access to financial services. According to MIT's Poverty Action Lab, over 10 years M-Pesa significantly increased savings, bank account use, resilience to financial shocks such as serious sickness or accidents, reduced poverty, and changed occupational choice, especially for women. Today, Vodacom serves over 36 million mobile money customers with far reaching benefits to the communities and economies we operate in.

The industry continues to evolve at a fast pace with policy makers and regulators continuing to play a central role in facilitating an enabling environment for financial inclusion. The opinions expressed in the publication hopefully provide food for thought on current and future policy questions. We would like to express our gratitude and thank all authors for contributing to this report and the wider debate.

Sincerely  
**Nkateko Nyoka**

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# Introduction and Executive Summary



**From Judith Obholzer,  
Managing Executive Legal &  
Regulatory, Vodacom Group Plc**

Mobile money has been a game changer for financial inclusion in Sub-Saharan Africa, driving economic growth and social benefits. GSMA reported nearly 400 million registered and 145.8 million active accounts in 2018 with transactions flowing through the system valued at \$26.8 billion.<sup>1</sup> An enabling regulatory framework is fundamental to achieving future ambitions – especially in economies where far-reaching access to financial services will continue to depend on investments and innovations by mobile money players.

The evolution of mobile money has been a remarkable success story. What started as a small scale sandbox exercise in Kenya in 2007 has paved the way for ubiquitous access to financial services. Research illustrates that M-Pesa has significantly contributed to social empowerment, economic growth and poverty reduction. Access to mobile money has increased per capita consumption levels and lifted 2 percent of Kenyan households out of poverty.<sup>2</sup> Mobile money – supported by extensive mobile reach – has thus proven to be a platform for

economic opportunity, transforming the financial services landscape, in particular on the African continent. Despite this considerable achievement, the future success of mobile money depends on the ability to deepen and increase the number of services facilitating seamless cashless experiences. Recent research findings highlight that enabling regulation has a direct correlation to mobile money success and helps achieve national financial inclusion targets.<sup>3</sup> Key factors include:

- ❖ A level playing field for investors through non-discrimination opening the door for foreign direct investment.
- ❖ Direct licensing of non-bank operators to offer mobile money services, usually in the form of payment issuer licenses.
- ❖ Clear regulatory accountability: taking a functional approach to payments regulation with the Central Bank regulating payment activities.
- ❖ Ease of agent network deployment: agreed on agent requirement guidelines, 'light-touch' notification mechanisms and support for contractual principle-agent agreements that facilitate good governance.
- ❖ A risk based approach to compliance including tiered identification requirements and transaction limits proportionate to functional risks.
- ❖ Guidelines that safeguard consumer protection, but avoidance of complex and expensive standards.

As the scope and services of mobile money providers evolve, new issues are emerging posing the question of how to future-proof mobile financial services.

<sup>1</sup> <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/2018-State-of-the-Industry-Report-on-Mobile-Money.pdf>

<sup>2</sup> Suri, Tavneet & Jack, William. (2016). The long-run poverty and gender impacts of mobile money. *Science*. 354. 1288-1292. 10.1126/science.aah5309.

<sup>3</sup> [https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/11/GSMA\\_Success-factors-for-mobile-money-services.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/11/GSMA_Success-factors-for-mobile-money-services.pdf)

**So what does it mean to future-proof mobile financial services?** It means we must be conservative and progressive: we need to **keep delivering on the promise of mobile financial services** that has seen M-Pesa go from strength to strength by remembering its core attraction: broadening access to financial services and responding to customer demand effectively. At the same time, regulatory frameworks need to evolve and keep up with the new reach, applications and environments in which providers operate. Such progressive regulation requires **sharing of best practices and innovation**. Yet, not only regulators and governments need to be progressive: The industry must not rest on their laurels. Hence, another key feature of future proofing mobile financial services is for the industry to **keep innovating to drive growth by employing cutting edge technology**.

I am glad that this report brings together contributions by leading experts that speak to these three broader themes. They are diverse in their views and ambitions, critical and inspiring.

Ruan Swanepoel (GSMA) outlines the journey of mobile money services and discusses the importance of viable future operational and commercial interoperability models. Without careful design and consideration of these models, interoperability could undermine future investment, stifle innovation and increase operational complexity and risk, without advancing market growth.

Rachel Balsham (MFS Africa) highlights the importance of cross-border remittances and the role regulators and policy makers can play to achieve the United Nations Sustainable Development Goal of reducing the cost to 3 percent. Today, the costs of sending money to Africa average 9 percent of the transfer amount and costs of sending money between African countries average 10 percent, but they can exceed 15 percent. Mobile money has proven to be a game changer if the regulatory conditions are right. M-Pesa is the lowest cost channel for sending money from Kenya to Tanzania and Rwanda at around 3 percent of the transaction value today. Regulators can support this transformation by adopting a progressive, proportionate, and pro-mobile approach to remittances. Embracing the fact that mobile is the channel of the future – and the present – means regulators can focus on ways to leverage the strengths of mobile channels, rather than the ways in which mobile money is “less than” traditional banking services.

Since the launch of M-Pesa there has been significant regulatory concern about safeguarding customers’ funds. Dr Jonathan Greenacre (Hitachi Center for Technology and International Affairs, Tufts University) argues that the original M-Pesa model provides a range of protections to customers’ funds against the unlikely event of bankruptcy of the provider. Certain risks do remain, but these are more a function of the overall operation of Kenya’s

bankruptcy regime, rather than anything specific to the M-Pesa model. Thus regulation on count of systemic risk seems to be unwarranted. More so, regulators may be able to exploit existing mechanisms of the M-Pesa system to manage these systemic risks effectively.

Brendan Pierce (Finmark Trust) highlights the importance of legal identity, which is a prerequisite for accessing financial services. Therefore, it has attracted the attention of the development community, as formalised in the UN Sustainable Development Goals. He argues that this is a specific challenge in the SADC region, where more than 11 percent of those globally without a legal identity live. In order to advance financial inclusion, he advocates for a digital financial identity. Finding a way to implement such proposals would go some way towards deepening financial inclusion.

Anne-Rita Ssemboga (International Telecommunications Union) provides an overview of how effective collaboration at national, regional and global level can support the development of safe and enabling financial services ecosystems.

Technological advancement continues to drive innovation in financial services. Cloud based infrastructure and Blockchain technology both have the potential of transforming financial service delivery. Irshaan Ravind Raghunanan (Standard Bank) provides first insights into how the Blockchain technology could be utilised practically, presenting an in-house case study as an example. He encourages tests and experiments across the continent, with the goal of achieving consensus around how Blockchain technology could be most effectively deployed to drive financial inclusion through cheaper, faster and safer service delivery.

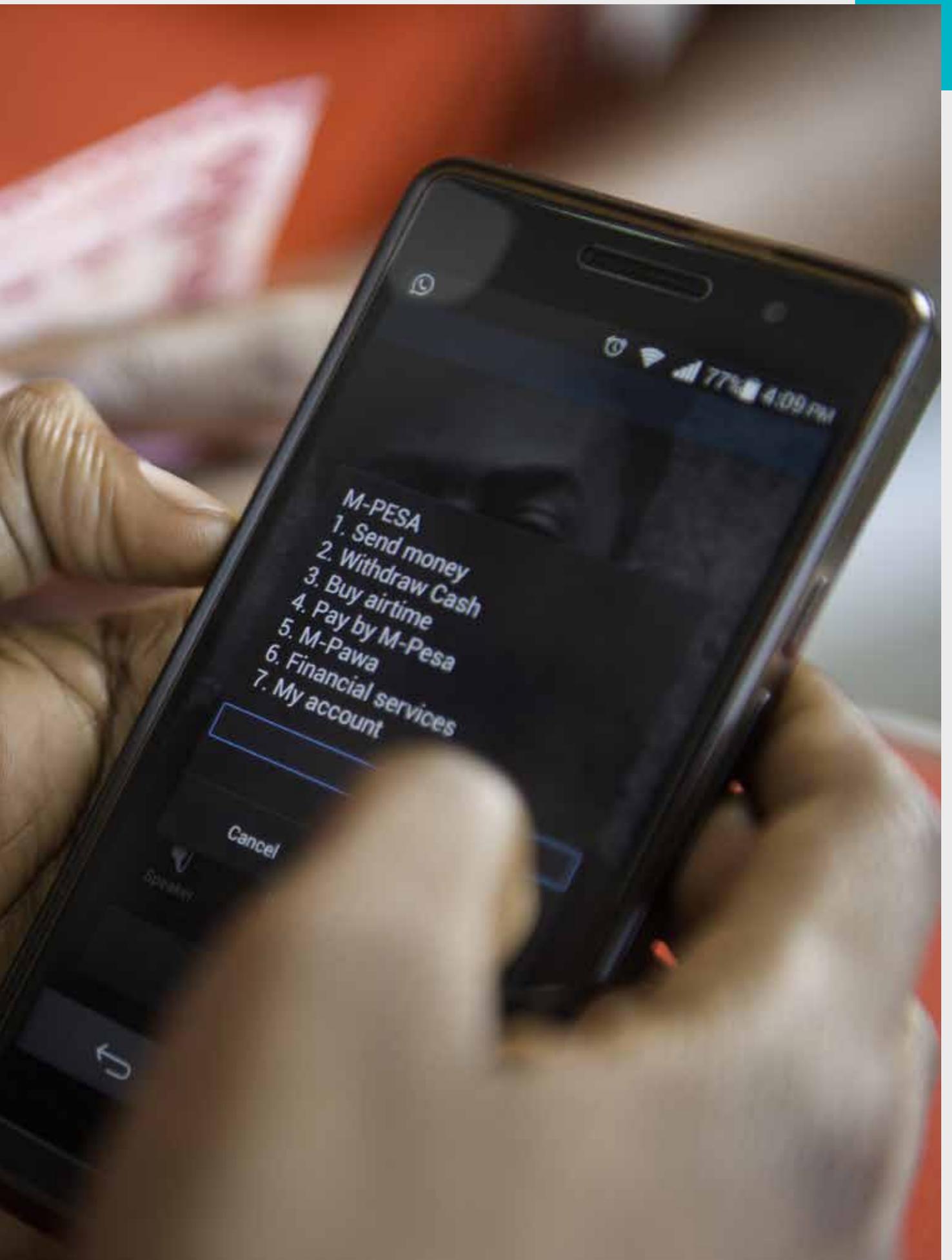
In order to reap the benefits of cloud computing and infrastructure, Richard Ketley (G:ENESIS ANALYTICS) argues that regulatory frameworks throughout Africa need to be modernised while addressing existing concerns on oversight, jurisdiction, data accessibility, data protection and security. Drawing on a study for the Bill & Melinda Gates Foundation, he expounds the series of data privacy and cybersecurity challenges that have to be addressed, in particular with a view to cross-border data transfer, in order to fully unveil the potential of cloud computing for mobile financial services.

This is a pivotal time for those shaping financial service regulation. Thank you for joining us in engaging in the debate on an enabling policy and regulatory framework, which will be essential for future proofing mobile financial services.



# Section

Keeping the Promise  
of Mobile Financial  
Services



# Future-proofing Mobile Money

## – Thoughts on Interoperability

Author: Ruan Swanepoel, GSMA

### Executive Summary

With **866 million registered accounts and live services across 90 markets**<sup>4</sup>, the mobile money industry is offering a financial future to millions of people around the world. Today, customers are using the service in their daily activities: paying for children's school fees, accessing loans to invest in their farming activities, saving for the financial future of their household, and mitigating financial risks and shocks. Interoperable payments systems will increase the utility of services, reduce friction in payments to unlock new product development, drive greater usage of digital funds, and generate more value for customers, businesses and governments. However, a right balance between private and public sectors' involvement in creating the correct solution must be struck. If led by governments, without careful design and consideration of the mobile money operational and commercial models, interoperability could undermine future investment, stifle innovation and increase operational complexity and risk, without advancing market growth. Indeed, this can in turn reverse financial inclusion gains achieved by the mobile money industry.



### Introduction: Mobile money in the context of the global payments landscape

As recently as 2011, more than **2.5 billion adults globally** did not have a formal financial account.

Since then, an astonishing

## 1.2 billion<sup>5</sup>

have gained access to financial services, representing great strides in escaping poverty and boosting prosperity.

This great achievement can be attributed in large part to the incredible growth of mobile money.

Progress has been most notable in Sub-Saharan Africa, where mobile money has emerged as the mainstay of financial inclusion. The share of adults with a mobile money account across Sub-Saharan Africa has **nearly doubled (from 12 percent to 21 percent)**<sup>6</sup> between 2014 and 2017, whilst the share of adults with a financial institution account in the region has risen by a modest four percentage points. Sub-Saharan Africa is also home to the **10 economies**<sup>7</sup> worldwide where **more adults now have mobile money accounts than have accounts at a financial institution. Consumers in the region are increasingly using mobile money in diverse ways, extending beyond basic use cases such as person-to-person (P2P) transfers and airtime top-ups.**<sup>8</sup>

With

## 866 million

registered accounts and live services across 90 markets, the mobile money industry is offering a financial future to millions of people around the world<sup>9</sup>

Today, customers are using the service in their daily activities: paying for children's school fees, accessing loans to invest in their farming activities, saving for the financial future of their household, and mitigating financial risks and shocks. For the world's most vulnerable, especially women, for the rural poor and for displaced persons, the benefits of mobile money are real and far-reaching. The 2018 State of the Industry Report revealed that **55 percent of surveyed mobile money providers have partnered with humanitarian organisations**, in many cases to deliver digital cash and voucher assistance.<sup>10</sup> The latest note from Findex also highlighted **the potential role of mobile money in driving financial inclusion amongst women** and showcased the economies where mobile money has helped narrowing the gender gap.<sup>11</sup>

4 <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/2018-State-of-the-Industry-Report-on-Mobile-Money.pdf>

5 <https://globalindex.worldbank.org/>

6 <https://globalindex.worldbank.org/>

7 <https://globalindex.worldbank.org/>

8 <https://www.gsma.com/mobilefordevelopment/africa/sub-saharan-africa-the-enduring-epicentre-of-mobile-money-part-1/>

9 <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/2018-State-of-the-Industry-Report-on-Mobile-Money.pdf>

10 <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/2018-State-of-the-Industry-Report-on-Mobile-Money.pdf>

11 [https://globalindex.worldbank.org/sites/globalindex/files/referpdf/FindexNote3\\_062419.pdf](https://globalindex.worldbank.org/sites/globalindex/files/referpdf/FindexNote3_062419.pdf)



## 2

### The evolution of interoperable mobile money systems

Similar to other payments infrastructure that often start as an innovative proprietary solution developed for internal processing of transactions and customer needs, rather than via a third party centralised platform, mobile money started initially as an isolated tool in many countries i.e. allowing people to send and receive money within the system, but remaining largely separate from other sources of digital funds. That has changed. Today, customers in an increased number of markets can transfer between accounts held with different mobile money providers and with those of other financial system players, evidence that interoperability continues to be a strategic priority for the mobile money industry and its future growth.

As of December 2018, **domestic account-to-account (A2A) interoperability was live in nineteen markets compared to only one in 2013.**<sup>12</sup> Interoperable P2P transfers (i.e. off-net transfers) volumes **more than doubled from 2017 to 2018**, without impacting existing on-net P2P transfers in these interoperable markets. Mobile money is also increasingly integral to the wider financial ecosystem. **Mobile money-to-bank account interoperability** has continued to grow significantly, increasing by **47 percent year on year in 2018**. On average, mobile money providers with bank integrations are connected to **10 banks**, which has dramatically increased volumes moving between mobile money and banking systems. Today we see balanced flows between traditional and non-traditional financial service providers, whilst enabling key use-cases such as disbursements for loans or repayments or enabling MSME's to pay suppliers. This suggests that mobile money is indeed complementing the formal banking sector while fulfilling the needs of customers.

Interoperable payments systems will increase the utility of services, reduce friction in payments to unlock new product development, drive greater usage of digital funds, and generate more value for customers, businesses and governments. However, a right balance between private and public sectors' involvement in creating the correct solution must be struck. If led by governments, without careful design and consideration of the mobile money operational and commercial models, interoperability could undermine future investment, stifle innovation and increase operational complexity and risk, without advancing market growth. Indeed, this can in turn reverse financial inclusion gains achieved by the mobile money industry.

## 3

### An enabling environment for success

Extraordinary success of mobile money of today is due to a multitude of conducive conditions and innovative approaches. Regulation calibrated to enable low-cost services for the financially excluded has been crucial. In fact, we have found a clear correlation between countries with high mobile money adoption rates and those with **more enabling regulatory environments.**<sup>13</sup> Even when no regulatory barriers exist, success is not guaranteed. Launching a successful mobile money service can be challenging for a number of reasons. Providers need significant time and resources to build a robust agent network and to acquire and educate customers – often **investing six to eight times the revenue units generated by mobile money during the early years.**<sup>14</sup> Mobile operators might even incur heavy losses initially and will need to invest in the system for roughly three years before breaking even. In essence, mobile money providers can break even once they manage to get sufficient value flowing through their systems. A study by McKinsey showed that this break-even point occurred at \$2 billion to \$3 billion in annual transaction value, which is in line with total system revenue of roughly \$20 million to \$30 million.<sup>15</sup>

<sup>12</sup> <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/2018-State-of-the-Industry-Report-on-Mobile-Money.pdf>

<sup>13</sup> <https://www.gsma.com/mobilefordevelopment/programme/mobile-money/introducing-the-mobile-money-regulatory-index-an-interactive-tool-to-measure-the-effectiveness-of-mobile-money-regulatory-frameworks/>

<sup>14</sup> [https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/11/2014\\_Mobile-money-profitability-A-digital-ecosystem-to-drive-healthy-margins.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/11/2014_Mobile-money-profitability-A-digital-ecosystem-to-drive-healthy-margins.pdf)

<sup>15</sup> [https://www.mckinsey.com/~/media/McKinsey/Industries/Financial\\_Services/Our\\_Insights/Mobile\\_money\\_in\\_emerging\\_markets/The\\_business\\_case\\_for\\_financial\\_inclusion/Mobile-money-in-emerging-markets.ashx](https://www.mckinsey.com/~/media/McKinsey/Industries/Financial_Services/Our_Insights/Mobile_money_in_emerging_markets/The_business_case_for_financial_inclusion/Mobile-money-in-emerging-markets.ashx)



## Moving to viable interoperable systems

Mobile money business model mostly differs from traditional banking. By definition, mobile money is a payments service and the actual deposits sit in a trust accounts. This not only helps safeguard customer funds but it also ensures that, at any point in time, there is a digital equivalent of the cash that leaves the ecosystem. Therefore, considering the current business model and regulatory framework, mobile money is first and foremost a transactional platform, with costs and revenues tied to the movement of value. **Transaction fees are still the dominant source of the revenue for the industry** as revealed in the 2018 State of the Industry Report. However, we are on the cusp of the most profound change in the mobile money business model since the service was launched over a decade ago. A growing number of providers are embracing a **'payments as a platform'** model and shifting their focus on expanding their value proposition to adjacent services, encouraging value to remain digital and diversifying their revenue models.<sup>16</sup> This will help the industry to transition away from a revenue model heavily reliant on customer fees to a diversified revenue model stemming from a digital ecosystem.

Against this backdrop, the key question is how will the economics of mobile money change in a centralised national payments infrastructure. And whether mobile network operators can continue to offer mobile financial service sustainably in such environments. Most legacy systems, business models and payment schemes are not suitable or conducive for mobile money use cases but rather optimised for high-value and electronic transfers typically seen in the banking sector. To ensure that the new systems are not going to reverse the mobile industry's achievements, establishing an appropriate governance structure, commercial model, and technical architecture to attract the participation of mobile money providers is critical. Before embarking on implementation of national payment infrastructure, sufficient time and resources should be allocated to defining governance, business and commercial rules, which are as critical to the success as the technical and infrastructure requirements.

Governance structure is key in creating a successful, open and equitable payments infrastructure, ensuring a fair playing field for all participants. The long-term success of any payments infrastructure that is mandated, and therefore introduced prematurely is not guaranteed. Establishing an open and continuous dialogue with all potential participants at the early stages of developing national payments infrastructure will help

shape governance models that offer tangible benefits to the wider industry and therefore incentivise participation and are inclusive. Governance should be equitable and to ensure the integrity of the governance structure, participants from different industries should have an equal voice.

Establishing business rules with clear roles and responsibilities of the participants are important for both the participants connecting to the payment infrastructure and the end users of these services to ensure a seamless experience. These business rules can be complex and time consuming to create as participants may have numerous internal processes and various capabilities. This was evident during the establishment of bilateral arrangements among mobile operators that took place in Tanzania in 2014. Therefore, creating a scheme or business rules for a larger number of diverse participants is expected to be significantly more complex. This will involve careful consideration of the service level agreements between participants and the payment infrastructure alongside developing dispute resolution processes that will ultimately ensure effective customer care support.

An area that can potentially pose a significant challenge when considering the diversity of the participants of national payments infrastructure and the existing operational structures in place is customer care. Mobile money providers including mobile operators have made significant investments in establishing effective customer care and support to large user bases of their respective services, in some markets to tens of millions of consumers. It is critical to understand how these service levels can be maintained within a national payments infrastructure and how the associated costs of resolving customers' issues will be managed between participants. The risk of decreasing service levels and subsequent trust in the systems could be detrimental to the uptake and continued usage of digital financial services. Tanzania would spring to mind again as an example of the complexity of these business relationships and how mobile operators had to make a concerted effort to build cross-network customer support relationships on a bilateral basis. This ensured timely resolution of customer queries and accountability between participants in supporting such requests.

When considering how to structure the commercial arrangements in a national payments infrastructure the easiest approach, which is typically pursued, is to propose a single flat fee for all transactions irrelevant of the proposed use cases. This, however, in turn could have serious impacts on the viability of mobile money services alongside the types of products and services that are being offered. Provisions should be made for commercials to be bilaterally agreed which will allow participants to remain competitive, encourage involvement and allow for continued product and service

<sup>16</sup> <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/Embracing-payments-as-a-platform-for-the-future-of-mobile-money.pdf>

innovation that may require more complex commercial arrangements. In the current interoperable mobile money environment in Tanzania for instance, we have seen how one P2P use case could successfully be introduced bilaterally without having discriminatory pricing for on-net or off-net transactions. This was achieved through careful consideration and discussions that went into establishing a model that could be easily implemented, ensuring that commercials were equitable to the participants with no incentive to manipulate cash flows to be either a net receiver or net sender. Ultimately, the model agreed in Tanzania between mobile operators was based on a cost recovery model, which required an analysis of each providers cost structure to digitise physical cash ensuring that providers are sufficiently incentivised to encourage interoperable transactions.

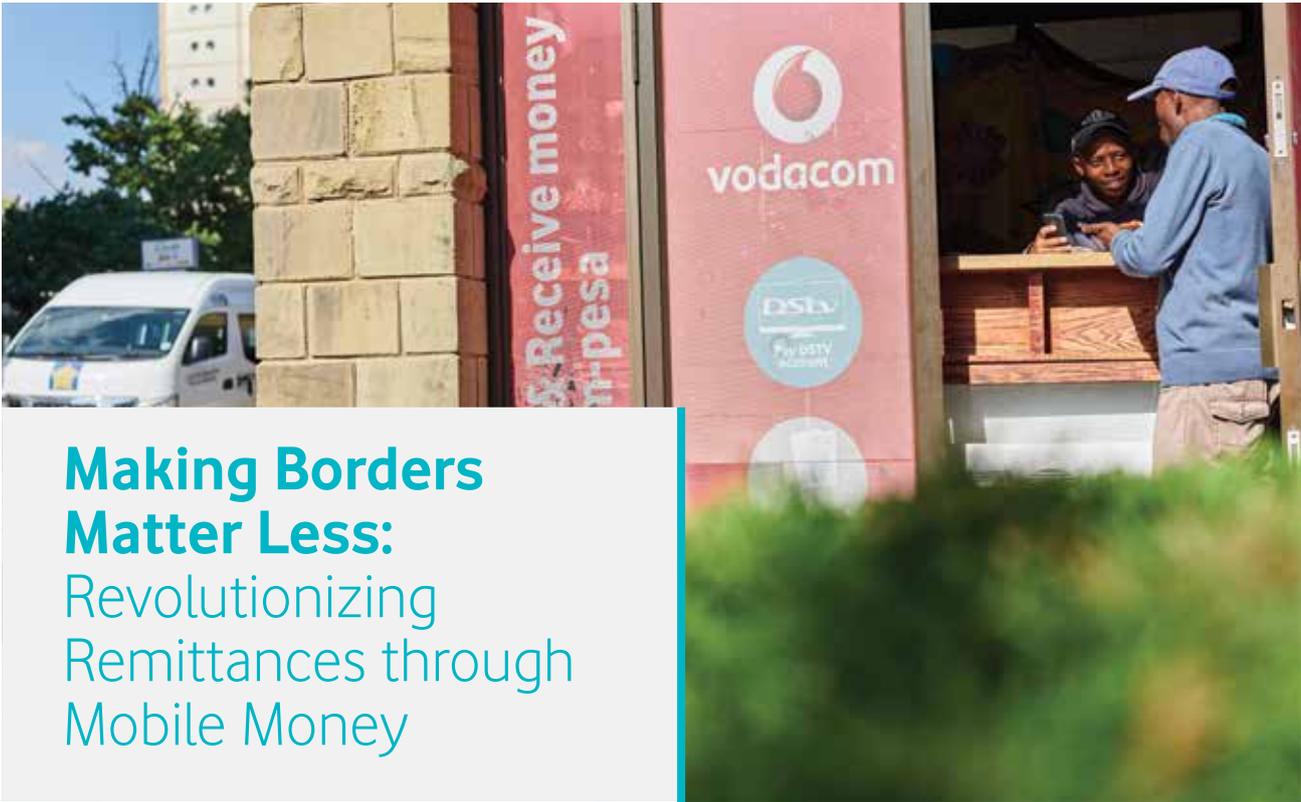
The success of interoperability in Tanzania also shows the extent to which industry participants should lead the process of determining governance and business rules. The progressive regulatory approach of the Bank of Tanzania to interoperability has also been key. The focus of the mobile money industry stakeholders during the initial phase of the negotiations was on governance and business rules thereafter technical requirements were considered. This has not been the case in other markets. In fact, the remarkable growth of interoperable (off-net) transactions across mobile money providers and banks indicate that the industry-led approach really works.



## Conclusion

Mobile money has become the ultimate lynchpin of innovation, enabling a breadth of partnerships across different sectors – in humanitarian, in agriculture, in energy, etc. – many of which were not imagined in the early days of mobile money. This enablement of course can only endure if the mobile money industry continues to thrive and remains commercially viable. Without careful design and consideration of the mobile money operational and commercial models, interoperability could undermine future investment, stifle innovation and increase operational complexity and risk, without advancing market growth. Therefore, I would encourage further investigation and study to chart the impact of centralised national payments infrastructure.





## Making Borders Matter Less: Revolutionizing Remittances through Mobile Money

Author: Rachel Balsham, MFS Africa

### Executive Summary

This article highlights the importance of cross-border remittances and the role regulators and policy makers can play to achieve the United Nations Sustainable Development Goal of reducing the cost to 3 percent. Regulators can support this transformation by adopting a progressive, proportionate, and pro-mobile approach to remittances. Embracing the fact that mobile is the channel of the future – and the present – means regulators can focus on ways to leverage the strengths of mobile channels, rather than the ways in which mobile money is “less than” traditional banking services.

### International Money Transfers – A critical lifeline to millions

Approximately one in nine people globally – around 800 million – are supported by funds sent home by migrant workers.

In 2018, remittances reached a record high, with

**\$529 billion**<sup>17</sup>

going to developing countries – nearly four times the estimated total official donor assistance of \$153 billion for the same year.<sup>18</sup>

Of that, \$41 billion was sent to Africa, where remittances are often a lifeline for individuals and families who need the funds for food, housing, school fees and medical expenses.

In Africa, this is particularly acute: Africa relies on remittances, and yet Africans abroad pay nearly three times more than the rest of the world to send money home. The costs to send money to Africa average 9 percent of the transfer amount, well beyond the United Nations Sustainable Development Goal of reducing the cost to 3 percent. Costs to send money between African countries are even higher – averaging 10 percent, but in some corridors, cost can exceed 15 percent.<sup>19</sup>

<sup>17</sup> Remittances matter: 8 facts you don't know about the money migrants send back home | UN DESA.

<sup>18</sup> Record High Remittances Sent Home in 2018 | World Bank.

<sup>19</sup> Economic Development in Africa Report 2018 | UNCTAD.

## Mobile money, a game changer

Traditionally, formal remittances could only be sent by two main channels: banks and money transfer operators (MTOs). Outside of these options, many consumers turn to risky and opaque informal, cash-based channels. The remittance industry has evolved in recent years, with mobile operators and fintech companies providing attractive alternatives. Mobile money is more affordable, secure, traceable, and transparent, and is transforming formal remittance markets and advancing financial inclusion.

### Greater access

Mobile networks across the continent have achieved revolutionary change in providing widespread access to telecommunication services. From urban taxi ranks to the most remote rural villages, wherever you can reach a mobile network's signal, you can be sure that you are never too far away from an airtime sales agent. And where there are airtime sales agents, you can find mobile money agents. The cost of training and supporting a mobile money agent is a tiny fraction of the cost of setting up a brick-and-mortar money transfer bureau, let alone an ATM or a bank branch.

Mobile money agents meet customers where they are, from marketplaces to rural shops to roadside vendors. Compared to ATMs, bank branches, post offices, and money transfer agencies, mobile money agents are dramatically more accessible, with over 10 times greater reach than these traditional services in Sub-Saharan Africa.<sup>20</sup>

Mobile money, through broad and accessible agent networks, provide millions of underserved and unbanked people access to mobile money services as well as a range of affordable financial services that empower them to manage their financial lives better, save safely<sup>21</sup>, seize economic opportunities, and reduce their vulnerability.

### Reduced cost

Mobile money is faster, flexible and more convenient than the services of most remittance service providers – and most important for end users, it's cheaper. The average cost of sending \$200 through mobile money platforms stands at 1.7 percent of the transaction, a 40 percent reduction in the cost as compared to 2017.<sup>22</sup> These figures clearly indicate that low-cost mobile money-enabled remittances are a sustainable trend rather than the result of short-term promotional efforts.

### Increased security

Using traditional channels, senders and receivers have to bear the risk of carrying cash to or from an MTO agent or bank branch, making them vulnerable to theft. Sending and receiving remittances via mobile money minimises these cash-handling risks.

## Connected and compliant: How MFS Africa powers mobile- based cross-border remittances

At MFS Africa, we connect nearly 200 million mobile money users across all major networks. To provide an easy way to send money and collect payments to and from mobile wallets in Africa, we created the most interconnected payments platform for the African continent; cross-border, cross-currency, cross-network.

A key component of enabling remittance and other payment services via mobile money is compliance. As a hub connecting mobile money systems to each other, as well as to money transfer companies, banks, and merchants, MFS Africa plays a critical role in ensuring that each member of the network is compliant with relevant regulation. Each partner that connects to the MFS Africa network must be licensed to provide mobile money services or money transfer services, maintain a strong AML/CFT program, and adhere to the appropriate standards of KYC data collection, verification, and storage.

Today, MFS Africa connect mobile money users across over 30 African countries, as well as money transfer operators in Europe, the Middle East, Asia, and North America. More than ever before, mobile money users are able to send and receive money digitally, and in real time, to and from friends and loved ones across the world. But there's still work to be done.

Of the hundreds of mobile money systems on the continent, only a fraction of them are able to connect to one another today. This is not due to technical challenges or lack of demand. The principal constraint to cross-border mobile payment interoperability is restrictive and outdated regulation.



<sup>20</sup> State of the Industry Report 2015 | GSMA.

<sup>21</sup> Guidelines on International Remittances via Mobile Money | GSMA.

<sup>22</sup> Mobile money: Competing with informal channels to accelerate the digitisation of remittances | GSMA.

## How regulation can enable mobile money as a remittance channel

Across the continent, there is a high level of variation in regulatory approaches to mobile money and remittances. Approval of cross-border mobile payment corridors can be slow, inconsistent, and opaque. Often, this is due to regulations that were conceived with banks in mind.

Regulators should adopt a progressive, proportionate, and pro-mobile approach to remittances.

### Progressive

What is best for the most marginalised consumers? What is best for the poor? Which channels best serve consumers in rural areas, or consumers with low levels of literacy? Which channels are most cost-effective for those for whom each money transfer is truly a lifeline? These questions should guide regulators and policymakers in their consideration of any remittance service. By a large margin, mobile channels are demonstrably better for poor and marginalised consumers, with lower costs and greater rural and urban reach.

### Proportionate

Also referred to as a risk-based approach, proportionality as a principle means acknowledging that a transaction of \$20 does not carry the same risk as a transaction of \$20,000. This proportionality is already applied to many mobile payment schemes for domestic payments, yet is not yet the norm for cross-border payments. While this is driven in part by policies set by American and European regulators and banks, regulators in African countries also have leverage to make more proportionate rules when it comes to small-value cross-border payments. World Bank economist Dilip Ratha, speaking on the value of risk-based approaches to remittances, says, "The main change that has to occur is to recognize that small remittances are not money laundering. And they're not systemically important."<sup>23</sup>



### Pro-Mobile

The trend towards mobile centricity appears irreversible – more consumers are interacting with more financial services via mobile today than ever before. In 2015, the GSMA reported that at least 19 markets had more registered mobile money accounts than bank accounts, and 37 markets had 10 times more mobile money agents than bank branches.<sup>24</sup> Embracing the fact that mobile is the channel of the future – and the present – means regulators can focus on ways to leverage the strengths of mobile channels, rather than the ways in which mobile money is "less than" traditional banking services. Among the most important of these strengths is the digital traceability and transparency that mobile money brings to transactions that would have otherwise occurred in informal, cash-based channels. While there have always been informal financial services, there is no informal telecommunications sector – as long as a transaction originates from or terminates to a mobile number, that transaction is traceable. Regulators have much to gain by bringing informal cash transactions into digital, formal channels.

<sup>23</sup> Crosman, Penny. The American Banker. "Why Remittances Cost So Much — and How to Make Them a Lot Cheaper" 19 February 2016.

<sup>24</sup> State of the Industry Report 2015, GSMA.



## Intra-African Remittances: An enormous opportunity to be unlocked

Many people tend to think about remittances in terms of the “global north,” or northern industrialised countries, sending to the “global south,” or formerly colonised countries. In reality, almost as much is sent in remittances between developing countries in the so-called global south as is sent to those countries from the north.<sup>25</sup>

70 percent of African migration occurs within the continent – and this migration is overwhelmingly driven by pursuit of economic opportunity.<sup>26</sup> This means that remittances – and other types of cross-border payments – can play an important role in accelerating regional integration.

Remittances aren’t the only use case in the cross-border payments space. 80 percent of cross-border revenues are based on B2B transactions, and this segment is expected to increase as more SMEs participate in the global economy.<sup>27</sup>

The overwhelming majority of African borders are relics of colonial empires. The reality of people’s lives is not constrained by these lines on a map. Visit any border crossing in Africa and you’ll see thriving market activity, shared languages, and individuals whose lives are intertwined with communities on both sides of the line. These national borders do not restrict their communications, relationships, entertainment, or business activities. Why should they restrict payments?

Over five years ago, MFS Africa enabled its first mobile-to-mobile cross-border remittance corridor, between Cote d’Ivoire and Benin. Within a few months, more than 15 percent of the World Bank’s estimated total flows between the two countries was coming through this mobile-to-mobile channel. After a year or two, over 50 percent of estimated total flows were passing through the MFS Africa-powered mobile channel.

What was happening? People found mobile money to be an intuitive, convenient, and affordable way to send money to another country, just as they were used to sending money domestically. Remittance-senders were switching from costly and slow bank-led services, or from risky informal channels, to a safe and convenient digital alternative with mobile money. But something else was happening, too – a sizeable subset of senders were sending more frequently, with higher amounts, and to more people than the typical remittance pattern. Focus groups revealed that these senders were actually doing business – a banker in Abidjan paying the staff of a small side business he had back in Cotonou, a seamstress paying for fabric supplies, a driver being paid for delivering goods.

Consumers across Africa and the world want to do business in the same way they want to communicate, consume knowledge and entertainment, and travel – unimpeded by borders. Progressive, proportionate, and pro-mobile approaches in regulation can help bring about a world in which people can transact freely, safely, and securely with whomever they choose. Whether for family remittances or microenterprise, mobile money is the ideal channel to enable low-cost, accessible, and transparent cross-border payments.

<sup>25</sup> 34 percent of remittances are sent between two countries in the “global south,” compared to 37 percent of remittances sent from the global north to countries in the global south. Remittances Factbook 2016 | World Bank.

<sup>26</sup> African migrations: opportunity not crisis, 2019 | Mo Ibrahim Foundation.

<sup>27</sup> Global Payments 2018: A dynamic industry continues to break new ground | McKinsey & Company.



**Section**  
Sharing Best  
Practices and  
Advancing  
Regulation



## Safeguarding Customers' Funds: Kenya as a Case Study

**Author: Dr Jonathan Greenacre, Hitachi Center for Technology and International Affairs**

### Executive Summary

Since the launch of M-Pesa there has been significant regulatory concern about the risks to customers' funds, particular in relation to bankruptcy of the provider and collapse of the bank or banks in which funds are stored. This paper argues that the original M-Pesa model provides a range of protections to customers' funds against the unlikely event of bankruptcy of Safaricom. Certain risks do remain, but these are more a function of the overall operation of Kenya's bankruptcy regime, rather than anything specific to the M-Pesa model. Better understanding of the risks and the extent to which the M-Pesa model addresses them can help inform a range of policy issues, including those that revolve around interest payments used for further insurances of customer funds.

This paper has four parts. The first explains the risks to customers' funds from bankruptcy of a mobile money provider such as Safaricom. The second explains that the original M-Pesa governance structure responds to those risks in much more extensive ways than we might assume. The third argues that remaining risks are due to wide limitations in Kenya's bankruptcy regime. The fourth concludes by exploring how insights from the paper can inform policy debates.

### 1

## Risks to Customers' Funds

Most policymakers and members of the public would agree that bankruptcy of a mobile network operator (MNO) providing mobile money is a confronting thought. It is easy to picture the social unrest that could arise if customers of mobile money funds lose access to their money. Some people might even picture scenes similar to those that arise when a bank collapses with mobile money customers rushing to the doors of the MNO to obtain their money.

However, there is comparatively limited literature outlining exactly how customers' funds might be lost or otherwise made temporarily or permanently unavailable in bankruptcy of an MNO which then makes policymakers confused about how to address the problem. This section aims to provide clarity on this first point.

The risks to customers' funds emerge from the operation of a country's bankruptcy regime. Most bankruptcy regimes contain two types of provisions, both of which apply in Kenya and so, in theory, apply to customers of M-Pesa and other mobile money schemes.

One key potential risk to customers' funds is loss of value: some or all of users' funds are lost in the course of the MNO's corporate bankruptcy proceedings. In other words, users' funds may be classified as assets of the MNO and so are used to repay debts that the firm owes to third party creditors. This arises because Kenya's bankruptcy regime contains a priority ranking rule in which unsecured creditors (users of mobile money) are paid whatever is left after claims of secured creditors have been paid.<sup>28</sup> Should M-Pesa customers be legally classified as unsecured creditors of Safaricom, in theory their funds may be exposed to loss of value risk in the event of bankruptcy of this firm.

A second risk to users' funds that can arise through bankruptcy of a Kenyan MNO is illiquidity, meaning users face a delay in accessing their funds during corporate bankruptcy proceedings. This risk arises in Kenya because unsecured creditors cannot obtain funds from a bankrupt firm until bankruptcy proceedings are complete.<sup>29</sup> During that time, customers cannot withdraw their funds from Safaricom or another bankrupt MNO moving through bankruptcy proceedings.

Empirical material suggests that, in theory, M-Pesa customers are exposed to both risks. For example, in relation to loss of value risk, data suggests that, as unsecured creditors, are likely to recover a very small portion of their funds. This is because secured creditors in Kenya only obtain 31.2 cents on every dollar, meaning unsecured creditors are likely to receive very little of their funds.<sup>30</sup>

A delay in returning user' funds can also emerge because Kenya's bankruptcy regime takes a significant amount of time to conclude. Estimates suggest that the average corporate bankruptcy in Kenya takes 4.5 years to resolve.<sup>31</sup> This means users may face a significant delay in waiting for their funds to be returned to them, which could in turn disrupt a significant amount of economic activity in Kenya.

<sup>28</sup> Substantive rule: Insolvency Acts 247, 471.

## 2

## The M-Pesa Model



Given the ease with which we can picture loss of funds and its potential operation in Kenya, it seems a simple step to design a range of regulatory tools to prevent its occurrence. A range of tools could be used, including capital requirements, extensive monitoring requirements, and even publicly-funded insurance regimes.

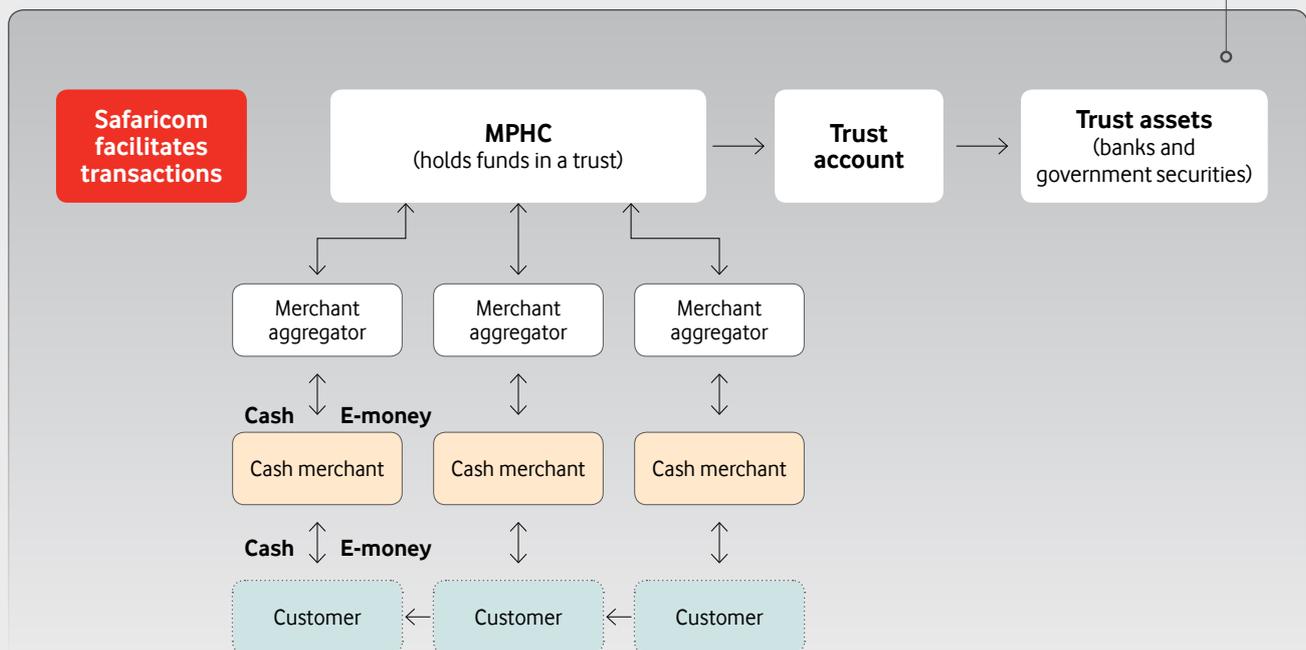
However, what most analyses fail to appreciate is that the original M-Pesa – namely the contractual arrangements agreed between Safaricom and the Central Bank of Kenya in 2007, already provide significant protection of customers' funds. Such arrangements were specifically designed to protect against loss of funds in the event of bankruptcy of Safaricom.

In the M-Pesa model that is now widely replicated in mobile money operations worldwide, Safaricom never receives users' funds. Instead, they are paid directly to another firm, called the 'M-Pesa Holding Company' (MPHC).<sup>32</sup> This

approach creates the following distinction. Safaricom performs mobile money services and facilitates mobile money transactions. The MPHC actually performs payment function because this firm, not Safaricom accepts, stores, transfers, and pays out funds.

The MPHC stores the funds in a trust account.<sup>33</sup> Funds cannot be loaned – instead they are stored on customer's behalf in trust.<sup>34</sup> This means the MPHC cannot make use of users' funds, which are trust assets, in the course of its regular business.<sup>35</sup> The MPHC also commits to store funds in liquid assets, namely Government of Kenya bonds or deposits in a commercial bank.<sup>36</sup> Originally, the trust account was stored with one bank, the Commercial Bank of Africa. Since 2007, Safaricom has gradually diversified holding of trust accounts. At the time of writing, seventy percent of trust funds are stored with seven 'Tier 1' banks in Kenya and the remainder with Kenyan government securities.<sup>37</sup>

The diagram below outlines the operation of Safaricom's M-Pesa model.



<sup>29</sup> Procedural rule: Insolvency Act s 558.

<sup>30</sup> World Bank (2018) < <https://www.doingbusiness.org/en/data/exploretopics/resolving-insolvency>>.

<sup>31</sup> World Bank (2018) < <https://www.doingbusiness.org/en/data/exploretopics/resolving-insolvency>>. Note that the precise figure will depend upon, amongst other factors, whether a private or court-organized bankruptcy proceeding is used and, if so, the legislation that governs the bankruptcy.

<sup>32</sup> M-Pesa Amendment Deed, Clause (E); M-Pesa Trust Deed, Clause 2(i). Note that Safaricom has various contractual methods to control actions of the MPHC which could also lead to co-mingling. This is because Safaricom operates as an 'agent' of the MPHC. M-Pesa Amendment Deed, cl 7.1. As a result, Safaricom gains the contractual right to operate the commercial bank accounts in which users' funds are stored. Safaricom can also effect payments from the trust fund back to users who wish to redeem their funds. Authorized Safaricom personnel are signatories of the bank account under the name of the MPHC. M-Pesa Amendment Deed, cl 7.1(a).

<sup>33</sup> M-Pesa Amendment Deed, Clause (E); M-Pesa Trust Deed, Clause 2(i). Later models of M-Pesa diversified trust holdings across other banks, which this paper will later explore.

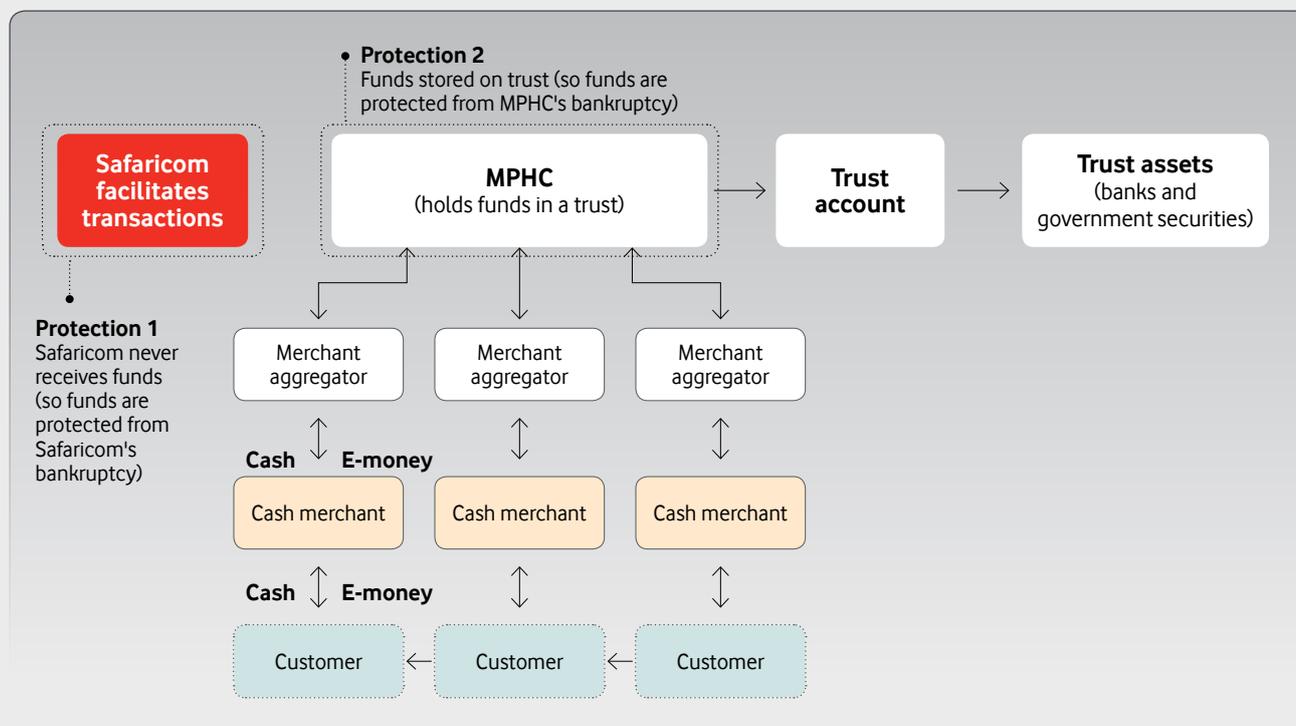
<sup>34</sup> Terms and conditions, cl 2.9.

<sup>35</sup> Doing so would be a breach of trust and mobile money customers could assert a proprietary claim to funds in the hands of the MPHC in priority to the MPHC's general creditors.

<sup>36</sup> Amendment Deed, clause 6.1.

<sup>37</sup> Discussion with Safaricom, May 2019.

By storing funds in a separate firm, which then stores funds on trust, customers' funds receive a double layer of protection from loss of value risk. Funds are protected from loss of value risk at the level of Safaricom (because the firm never receives customers' funds) and at the MPHC (because by storing funds on trust, this entity never 'owns' the funds, and so funds are available to customers in the event of this firm's bankruptcy).



### 3 Remaining Risks

Like any contractual or regulatory arrangement, the double level protection of customers' funds (storing funds with the MPHC which stores funds on trust) does not remove all risks from M-Pesa, one of which is illiquidity. Put alternatively, the double level arrangements can help protect funds against loss of value risk (by protecting customers against bankruptcy of Safaricom and the MPHC). However, in themselves, the double level arrangement cannot protect funds against liquidity risk, namely a delay in returning customers' funds while bankruptcy proceedings are in place.

However, the key point to emphasize is that the remaining illiquidity risk is not due to M-Pesa's arrangements; instead, it is due to the operation of Kenya's bankruptcy regime. This is because, as discussed above, the estimated average corporate bankruptcy regime is 4.5 years, which applies irrespective of the type of firm involved.<sup>38</sup>

<sup>38</sup> World Bank (2018) < <https://www.doingbusiness.org/en/data/exploretopics/resolving-insolvency>>.

### 4 Policy Implications

A better understanding of the source of risks to users' funds can help inform whether and if so what policy interventions can better protect such funds. In this case, as discussed above, the M-Pesa arrangements are comprehensive and a key remaining risk emerges from the operation of Kenya's bankruptcy regime. Moving forward then, policymakers may wish to focus on amending and improving Kenya's bankruptcy regime, rather than designing a range of other regulatory frameworks for M-Pesa, which may not necessarily improve the protection of customers' funds.

### 5 Conclusion

Policymakers and members of the public have a legitimate reason to make sure their funds are protected from bankruptcy of a mobile network operator providing mobile money. However, there is no need to rush to regulate, particularly in relation to M-Pesa. This is because the original contractual arrangements provide a double level of protection. This protection applies against Safaricom (which never receives funds from the public) and the firm that does store the funds (because this firm stores such funds on trust).

# Does the SADC Have an Identity Crisis? Solving the Legal Identity Problem

Author: Brendan Pearce,  
Finmark Trust

## Executive Summary

This contribution highlights the importance of legal identity, which is a prerequisite for accessing financial services. Therefore, the legal identity challenge has attracted the attention of the development community, as formalised in the UN Sustainable Development Goals. The issue is particularly acute in the SADC region, where more than 11 percent of those globally without a legal identity live. In order to advance financial inclusion, a digital financial identity is critical.

1

## The issue

Providing legal identity for all by 2030 has been identified as one of the goal targets of UN Sustainable Development Goal (SDG) 16. In line with this, there is increasing focus on the importance of legal identity within the global development community, with significant projects across the world currently running to work towards the achievement of this goal. Why has so much emphasis been placed on identity?

It's easy to forget how reliant we are on our IDs, but in fact, this document gives you the ability to effectively participate in society. Without a legally recognised identity - one cannot vote, qualify for social services and importantly, one cannot access financial services. The World Bank estimates that 1.1 billion people globally do not have access to a legal identity and of this total, 138 million people are living within the South African Development Community (SADC) region.<sup>39</sup>

2

## SADC: What is at play?

A deeper look at the SADC region indicates that not only are there a significant number of people without a legal identity, but there exists a great degree of variance across the region in terms of the quality of national identification systems.<sup>40</sup> In other words, for individuals that do hold a legal identity document, this may not be recognised in other member countries. This identity crisis within the SADC region is highly problematic given the prevalence of migration within the region and the resultant reliance on financial services.

In South Africa, there are approximately 3.3 million migrants of which at least half regularly send money back home.<sup>41</sup> FinMark Trust data on remittance market monitoring studies indicates that SADC migrants in South Africa remit approximately \$16.6 billion home annually. These remittances constitute the financial lifeline of many families. However, without access to sufficient, or any legal identity, financial institutions are unable to provide migrants with access to these important financial services. This reality drives individuals to use informal channels, evident in our findings that the informal market comprises approximately \$12.55 billion of total remittances sent, which means that informal remittances constitute an alarming 75.6 percent of the total market.<sup>42</sup>

Although the newly introduced 'risk-based approach' under the Financial Intelligence Centre Amendment Act has introduced a more inclusive approach of simplified due diligence for low-value remittances and low-value banking services, a lack of identity remains a key risk for exclusion. Establishing identity from a government-authorized source remains a minimum requirement in South Africa and anonymous transactions are prohibited.

Thus, FinMark Trust recognises the significant link between legal identity and financial inclusion. In line with this, we strongly believe that the development of a digital financial identity, in other words a digital identity specifically for use within the financial sector, can address the identity crisis within the financial sector across SADC.

3

## Conclusion

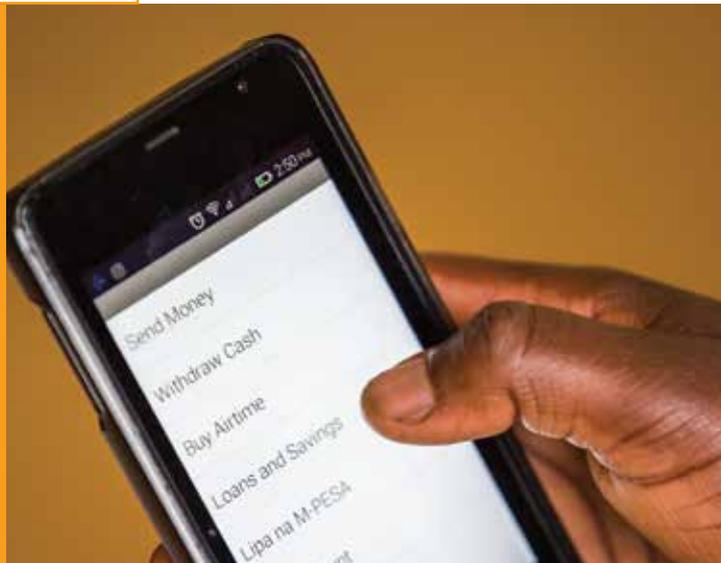
Providing legal identity for all by 2030 has been identified as one of the UN Sustainable Development Goals. In order to effectively bridge the gap across SADC national identity systems must be strengthened and a digital financial identity specifically for use within the financial sector is required to bridge the existing gap and drive financial inclusion.

39 World Bank, ID4D <http://www.worldbank.org/en/programs/id4d>

40 World Bank, ID4D Dataset <http://data.worldbank.org/data-catalog/id4d-dataset>

41 FinMark Trust Updating the South Africa – SADC Remittance Channel Estimates, 2017.

42 FinMark Trust Remittance Factsheet, 2017.



## Collaboration in the Digital Financial Services Ecosystem

**Author: Anne-Rita Ssemboga,  
International Telecommunications  
Union**

### Executive Summary

The ITU-T Focus Group on Digital Financial Services was established in 2014 as a multiparty consultative body for fostering the development of safe and enabling ecosystems. Effective collaboration has emerged through clear delineation of roles and responsibility with the Financial Regulator – in most cases the Central Bank – taking the lead as coordinator of salient policy issues. The establishment of National Payments Councils, regional collaboration projects and public-private stakeholder dialogue have supported the rise of mobile financial services and remain critical to future-proof digital financial services ecosystem.

## 1 Background

In 2014, the ITU-T Focus Group on Digital Financial Services (hereinafter, “ITU FG-DFS” or “Focus Group”) was established as a multiparty consultative body for fostering the development of safe, enabling Digital Financial Services (DFS) ecosystems in line with UN SGD GOAL (10) “to foster partnership”.

The overall objectives of the Focus Group are amongst others:

- ❖ Increase and formalize the collaboration between financial and telecommunications regulators with respect to digital financial services
- ❖ Identify key issues limiting the development of safe, enabling DFS ecosystems
- ❖ Analyse how these issues have been addressed in practice and exchange information on best practices
- ❖ Develop policy recommendations for regulators and other stakeholders on how to approach these issues in their countries.

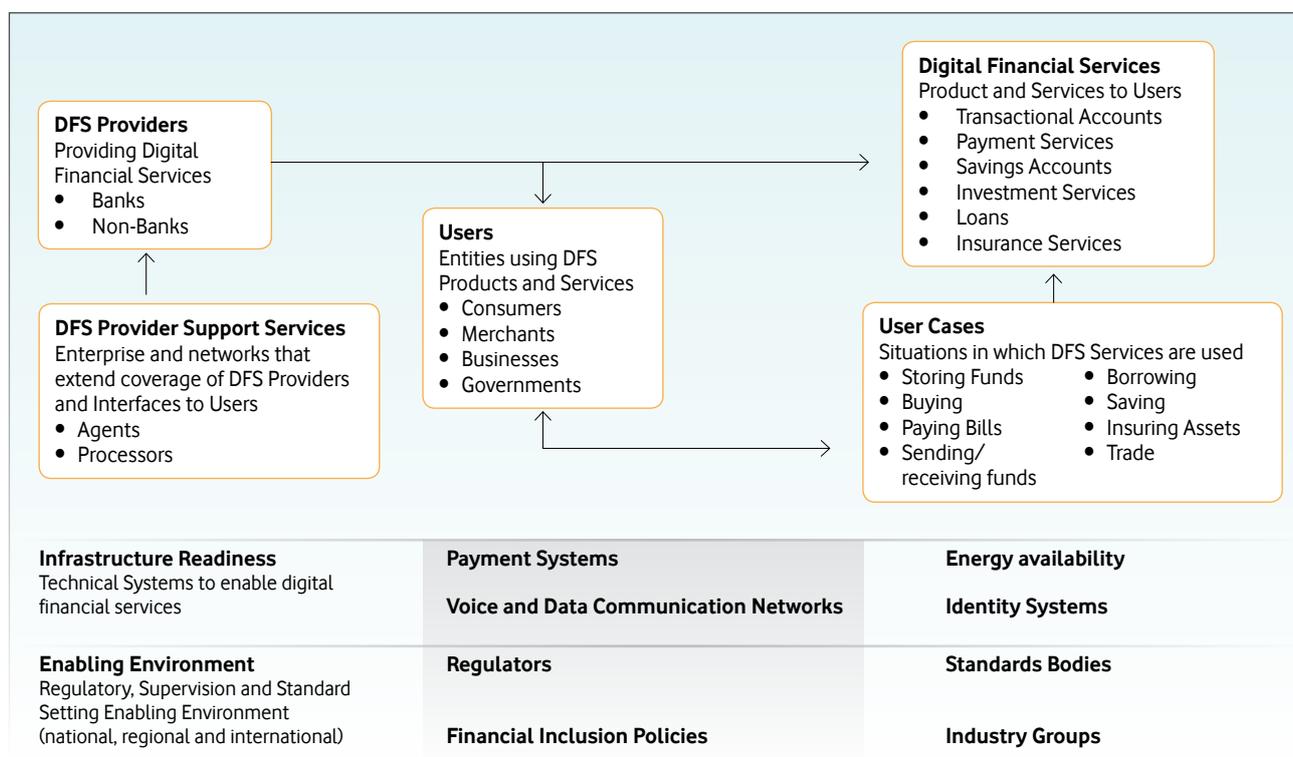
The cross-cutting nature of DFS regulation and supervision can create uncertainty. In particular, many financial and telecommunications regulators highlight the challenges of delineating responsibilities with respect to DFS regulation and supervision. Further, in striking the right balance that fosters the development of a safe and enabling DFS ecosystem authorities need to enable innovation and promote competition. At the same time, they need to mitigate risk, protect consumers, and maintain financial sector stability and integrity. The Focus Group brings together financial regulators, telecommunications regulators, private-sector stakeholders, consumer advocates, DFS technical experts, development partners, and other key DFS stakeholders to collaboratively explore these issues and develop consensus recommendations.

## 2 Actors responsible for DFS Policy, Regulation, and Supervision

**As digital financial services ecosystem grows, it attracts more stakeholders, which can potentially lead to more complexities and over-regulation**

In most countries, the Central Bank is primarily responsible for regulation and supervision, though some countries have established a separate entity for financial supervision. Financial regulators also typically assume primary responsibility for developing financial inclusion policies and strategies in coordination with other public- and private-sector stakeholders.

## DFS ecosystem



Other relevant regulatory actors include competition, data privacy, consumer protection, and tax authorities who at times have an overlapping mandate.

### 3 How collaboration is strengthening financial inclusion in Africa

Effective collaboration has emerged through clear delineation of roles and responsibility with the Financial Regulator – in most cases the Central Bank – taking the lead as coordinator of salient policy issues. Financial regulators should regularly engage with other public-sector actors (e.g., authorities responsible for telecommunications, competition, data protection, and taxation), DFS providers, consumer advocates, DFS technical experts, development partners, and other DFS stakeholders. Whether the topic of concern is interoperability, 3G coverage, service quality, fraud mitigation, data privacy, or digital credit, effective collaboration can help to ensure that policy and regulatory decisions contribute to healthy DFS ecosystem development.

Mechanisms such as a National Payments Council can facilitate a collaborative approach to DFS regulation. Financial and telecommunications regulators should also consider signing a Memorandum of Understanding (MoU) or similar agreement to guide their collaboration to foster the development of a safe and enabling DFS ecosystem.<sup>43</sup>

Further, integration efforts to work towards more harmonisation across the African continent, will be an important area of future regional collaboration. Some initiatives are noteworthy in the area of cross-border payments, which will allow citizen in a region to send and receive remittances from a neighbouring state.

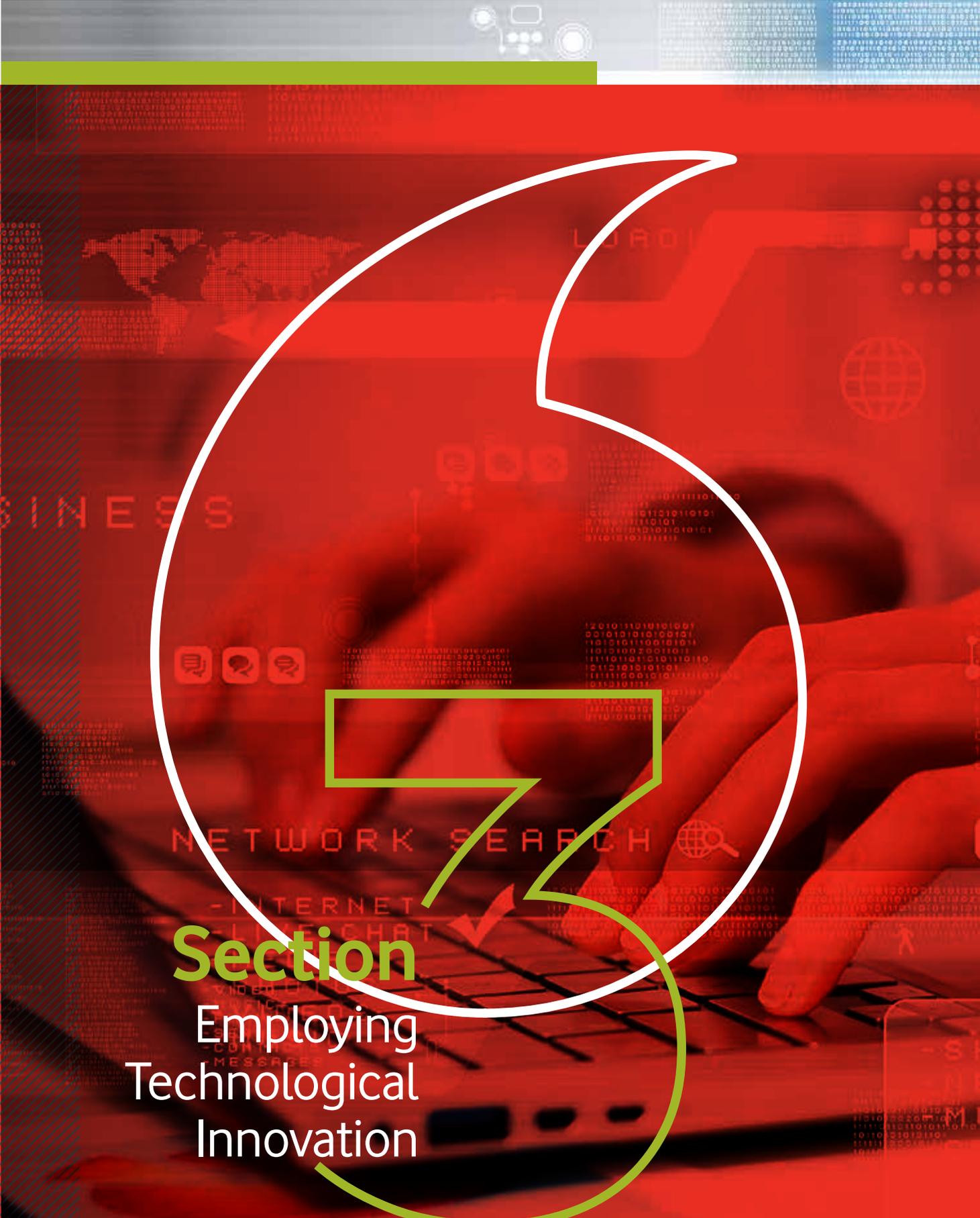
The East African Countries (“EAC”) has declared intention to set up a regional payment switch for its member states, which is aimed at providing a foundation for financial sector integration within the region, and to assist in broadening financial sector through the establishment of a single market for financial services.

In the South African Development Community (“SADC”), member states have built a regional payment with the aim to reduce cross-border payment risk and lower transaction costs. The project is in its testing phase and expected to be completed soon.

In the Central African Economic and Monetary Community (“CEMAC”) region, the project is transitioning from deployment to usage.

These initiatives pave the way for more integration and harmonisation of payment infrastructures on the continent. Regional exchange will be critical in realising potential benefits and sharing learnings on important considerations such as governance, participation, use cases and commercial use-cases.

<sup>43</sup> See ITU (2016), Regulation in the Digital Financial Services Ecosystem for an MoU template.



# Section

## Employing Technological Innovation



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- SHOW BUSINESS  
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NETWORK SEARCH

## BLOCKCHAIN: An African Trade and Cross-border Payment Use Case

**Author: Irshaan Ravind Raghunanan,  
Standard Bank: Global Markets,  
Flow Sales Innovation**

### Executive Summary

This article provides first insights into how the Blockchain technology could be utilised practically, presenting a Standard Bank in-house project as a case study. This successful example encourages further tests and experiments across the continent, with the goal of achieving consensus around how Blockchain technology could be most effectively deployed to drive financial inclusion through cheaper, faster and safer service delivery.

### Introduction

When we glance at the future, the language for Financial organisations consistently includes the same terms. Open banking, building API economies, blockchain based digital networks, cloud-based infrastructure, big data and artificial intelligence, and so the list continues.

As a business focused on Africa's global participation from both a trade and investment perspective, our Global Markets division set out to build a blockchain network on a cloud infrastructure that would facilitate a fundamentally important bank offering across the continent: Cross-border payments/movement of funds.

This document will seek to set-out some thoughts on why and how we built this system as well as outline other financial problems this system could solve for in the future and in the context of financial inclusivity as well mobile money.

## 1

### Macro-Overview (GDP and Trade)

It is important to consider the significance of trade and investment in Africa and the relevance of building a blockchain network that could facilitate this flow of funds in the future.

Despite global economic sentiment looking seemingly depressed and western consensus targeting decreased globalisation, one continent seems to buck the trend.

There are many significant factors across the African continent that are expected to grow our economy, despite depressed commodity prices, slowdown and even recession in major GDP contributing nations.<sup>44</sup> Abundant mineral resources, some of the most uncultivated arable land in the world, resilient people and a blank canvas on which there are endless opportunities to invest and grow economies.

Importantly, trade between Africa and its largest trade partner China, continues its growth trend. China-Africa trade expanded by 20 percent in 2018. Last year, China-Africa trade posted the fastest rate of growth since 2011, expanding by 20 percent, from USD170 billion in 2017 to USD205 billion in 2018.

Sub-Saharan Africa (SSA) which boasts a \$1.7 trillion a year GDP, continues to grow at an expected 3.4 percent<sup>45</sup> in 2019, despite global economic slow-down.

<sup>44</sup> African Markets Revealed, September 2019: Standard Bank Research.

<sup>45</sup> IMF World Economic Outlook forecast.

## 2

# Entering the Standard Bank Blockchain

### A Rationale

In its existing form facilitating cross-border payments and trade finance transactions on the continent is an incredibly manual process. It all starts with manual agreements, forms and signatures followed by operational tasks that require human execution across a multitude of internal banking systems. It's no secret that banks, globally, have inherently old systems which are difficult to change because they house and underpin strong and necessary institutional requirements. However, the rapid increase in financial technology in recent years continues to push existing banks to accelerate their efforts in digitizing processes and procedures to achieve more seamless internal interaction.

An interesting example of digital progression from the perspective of trade and payments, is the SWIFT Global Payment Initiative (GPI). With this advancement, SWIFT introduced a payment tracker for international payments. This initiative has introduced a mind-set shift around moving money cross-border and has kicked off a race between banks and non-traditional participants to achieve 'real time' international payments and settlements.

Using 'Big Data' analytics, we were able to display the lag or disruption in the banks 'first mile' payment process. In addition, we were able to articulate the links in the payment chain from inception to the moment it entered the SWIFT network – giving us a blueprint on which to build our blockchain.

### B Building a private permissioned blockchain network

Blockchain technology is a global phenomenon, with a multitude of organisations testing its capability to assess practical application. It is important to understand the initial blockchain and its design, which is synonymous with Bitcoin, in order to understand how corporates and banks are adopting the technology.

The Blockchain network that facilitated Bitcoin was built as a peer-to-peer, decentralised, immutable distributed ledger, built on cryptography. The network comprised of various independent participants or nodes who contributed to the network to facilitate transactions in Bitcoins between global participants. There was no single owner and no central authority to manage transactions. At its peak, this network consisted of up to 6 million users with over 6 000 nodes in the network capable of completing over 400 000 transactions a day.

Standard Banks Blockchain Network, RAVN (raven), was built by Standard Bank blockchain developers as a private permissioned immutable distributed ledger. It is built on IBM Hyperledger fabric



and deployed to a Microsoft Azure cloud. As a start, we built a blockchain around the previously mentioned manual processes, operational tasks and internal bank systems that make up a cross-border payments. The blockchain links the tasks and uses optical character recognition and artificial intelligence to complete repetitive manual work, digitally connecting the dots and allowing clients to create payments on the network via web interface.

A key purpose and benefit of the blockchain, is end-to-end visibility of a cross-border payment from inception until it reaches the beneficiary. Because the links are symbiotic within the blockchain, the client can track the banks internal processes, foreign exchange details, regulatory processes as well as the new SWIFT GPI offering to follow the payment and its costs all the way to the recipient.

The future state and key outcome should allow a cross-border payment capability where the Bank, Central Bank, relevant tax authorities and client can view, monitor and audit transactions transparently, fast and cost effectively. Profoundly, removing payment delays and creating a mutual network can contribute to progressive nation-building by providing a robust infrastructure on which businesses can transact, invest, generate profit and grow into continuous economic contributors.

### C Key challenges

Even though many enterprise blockchains (private permissioned blockchains built for use by companies) are interoperable and can technically share information across the different instances such as Hyperledger fabric, Ethereum, Ripple and so forth, a key requirement for the success of blockchain is consensus.

Consensus is important, not just between corporations, but between central authorities that will look to monitor, view, report and regulate transactions that occur on the blockchain. Key participants or nodes to an African Blockchain network will be Central Banks, Tax authorities and other regional regulatory authorities that will require oversight of transactions.

These authorities will need to assess fiscal and monetary policy objectives before partnering with participants in their networks and agreeing for what purpose the blockchain will be used; what digital reporting will be required and accepted; how this digital reporting will be distributed and consumed; and to what extent new participants will be allowed to participate on the blockchain.

## 3

## Using the Blockchain to accelerate financial inclusion



As the world is rapidly moving toward ubiquitous and digital solutions, African markets, present a unique opportunity. For innovators, there is ample room to assist in developing solutions that allow for financial inclusion using mobile services. According to the World Bank<sup>46</sup>, “The power of financial technology to expand access to and use of accounts is demonstrated most persuasively in Sub-Saharan Africa, where 21 percent of adults now have a mobile money account – nearly twice the share in 2014 and easily the highest of any region in the world.”

Standard Bank, together with Vodacom, have assessed three key financial inclusivity elements on the African continent, namely, remittances and cross-border payments; distribution of funds from NGOs; and short-term lending solutions.

Given the importance of these elements of African financial inclusion, it is quite clear that the primary advantages of the blockchain: transparency, fast, trackable and cost efficient, are imperative components of delivering these services to the continent. More specifically, and with the true African phenomenon of mobile money, Blockchain and its connection to a network of Banks as well as Central authorities coupled with digital audits and consensus has the power to propel financial inclusivity into the future.

From a Global Markets perspective, a keystone to accelerating financial inclusivity is global participation which is the ability to utilise the most efficient funding, foreign exchange and settlement networks. Standard Bank is a leading foreign exchange provider on the continent, a service we offer via application interface and in the future, via our private permission blockchain.

With a focus on Remittances, a \$46 billion value for Sub Saharan Africa (SSA), it is interesting to note a while the global average cost for remittances is 7 percent, SSA remains high at 9 percent.

<sup>46</sup> World Bank, Global Findex Report 2017.

<sup>47</sup> Remittance prices worldwide (Sep 2019), The World Bank.

From a G20 perspective, South Africa remittances remain the highest at 15.96 percent.<sup>47</sup> Using blockchain to create a transparent link between the eco-systems such as mobile money, money transfer operators and foreign exchange market makers as well as clients and external counterparties can deliver a frictionless payment experience that can achieve the United Nations Sustainable Development Goal reducing global average transaction cost down to the targeted 3 percent.

## 4

## Conclusion

Standard Bank has begun its Blockchain journey by starting small and testing practical implications of the use of the technology. Our blockchain is still in its infancy and undergoing regulatory approval and testing in South Africa.

Similar tests and experiments should be conducted across the continent, with the goal of achieving consensus around how we will jointly use the technology as Banks, central authorities, mobile money operators and innovators.

Private permissioned Blockchains, its nimble cloud-based technology and immutable distributed ledger technology has the power to change the world of finance dependent on how we choose to use it. Relatively cheap costs are also a major consideration when one looks at African financial inclusivity.

# Cloud Banking in Africa: The Regulatory Opportunity

We want to thank the Bill & Melinda Gates Foundation for their support for this research.

Author: Richard Ketley,  
Genesis Analytics

## Executive Summary

In order to reap the benefits of cloud computing and infrastructure, this article based on a study funded by the Bill and Melinda Gates Foundation, argues that regulatory frameworks throughout Africa need to be modernised while addressing existing concerns on oversight, jurisdiction, data accessibility, data protection and security. The contribution expounds the series of data privacy and cybersecurity challenges that have to be addressed, in particular with a view to cross-border data transfer, in order to fully unveil the potential of cloud computing for mobile financial services.

## Introduction

Africa's development challenges remain formidable and poverty remains a critical issue in most countries. Addressing the challenges and improving livelihoods is linked to getting more Africans economically active. **Access to financial services plays a key enabling role in supporting economic activity.** Despite several decades of interventions to promote financial inclusion the average rate of financial inclusion in Africa is just above 41 percent and there are approximately 717 million adults<sup>48</sup> in Africa who are financially unserved or underserved.

Part of the reason for this is the high cost of providing financial services, which forces many providers to remain focused on serving the wealthiest consumers who can generate the required revenues to cover these costs.

New technologies are, however, allowing for more agile, connected and cost-effective ways in which to provide financial services. **Cloud computing, in particular, has significant potential to unlock value for users and providers alike.**



Cloud-based solutions allow financial services providers (FSPs) to deliver business applications through shared virtual infrastructure, which reduces the cost of data storage and delivers capacity as needed. Internationally, cloud banking is therefore becoming an important component of ICT strategy in banking. Outsourcing ICT to independent vendors or providers not only saves on costs, but allows to better analyse customer data, partner with third party providers to deliver more innovative products. It has reduced a barrier to entry of the financial sector and allowed new entities to compete with incumbent providers.

The providers of financial services are however not as free to optimise their technology infrastructure as they would like. Many of the decisions governing ICT infrastructure and its physical location are the subject of financial and national regulations. Well applied, such regulation ensures the safety and stability of the sector, protects the interests of consumers and ensures appropriate levels of business continuity and "system uptime". Poorly applied, the same regulations can burden the sector with legacy systems and uncompetitive cost structures that prevent the low cost provision of financial services that are required for their widespread adoption – to the detriment of financial inclusion, economic development and poverty alleviation.

This brief argues that **regulatory frameworks throughout Africa need to be modernised in order to keep pace with developments in cloud computing**, while acknowledging that many regulators have legitimate concerns about key issues such as oversight, the management of data, the ability to protect data generated within their jurisdictions, the security of data accessible over the internet, and the ability of FSPs to guarantee continuity of service.

A framework to assist regulators in navigating the modernisation journey is proposed, and the many immediate and tangible benefits of cloud banking explored.

<sup>48</sup> The Little Data Book on Financial Inclusion 2018, World Bank, 2018.

## A large continent with many small banks and large TELCO's

There are 774 banks on the continent, which serve approximately 245 million consumers. Only 6 percent of these are classified as tier one banks and have an asset base of USD10 billion or more (See figure 1). And even these large banks are very small by international standards.

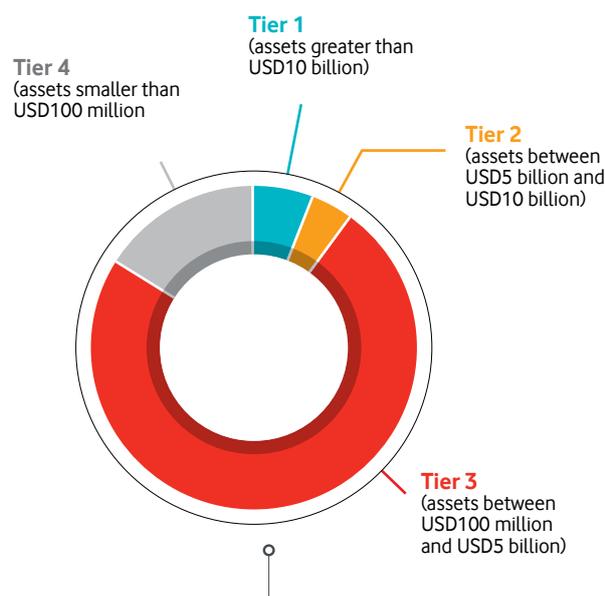
**In contrast, six mobile money operators (MNOs) serve approximately 75 percent of all customers with active mobile money accounts.**

The small size of most African banks result in low levels of efficiency, with banks in Africa reporting much higher cost-to-income ratios than international peers, despite the fact that the continent has the lowest density of branches in the world, with just five branches per 100 000 of the population. Branches nevertheless remain the primary channel for banking and, with their continued reliance on manual processes and outdated legacy systems, contribute significantly to operating costs.

Despite these costs, profitability has been maintained by **pushing high costs back to consumers**, making African banking services much more expensive for consumers when compared to other regions. The net interest margin spread in Africa is higher than in many other regions<sup>49</sup> and consumers in Africa often face high monthly account fees and high minimum balance requirements which is why so few African consumers have bank accounts.

**This has put African banks at a competitive disadvantage with respect to new entrants such as MNOs**, which have the

African banks by tier percent of total banks in each tier



advantage of operating under different regulatory regimes and of being able to make use of both their telecommunications technology and their extensive networks of agents. Greater levels of ease and trust amongst consumers have also resulted in significantly higher market penetration, especially in the lower end of the market; across Sub-Saharan Africa mobile money transactions accounted for 1.7 billion transactions, with a value of USD26.8 billion in 2018, reaching over 395 million customers<sup>50</sup>.

**MNOs have extended their product offerings to include savings accounts and microcredit, which has been a major disruptor** in markets such as Kenya and Tanzania. MNOs are starting to look similar to banks as their product lines have become more sophisticated and focus on financial well-being. However, their business models are not without issues; thus far it has been in the interests of MNOs to build closed platforms.<sup>51</sup> But in more open markets the MNO's would also need to reduce their infrastructure costs.

### The cost of ICT

All financial service providers acknowledge that, in order to remain competitive in a digital world, they need to **upgrade their technological infrastructure and capabilities**. Given the asset size of African banks, expenditure on ICT is, however, relatively high, with the enormous cost of managing and integrating legacy systems often being prohibitive and limiting the banks' ability to innovate and reduce costs. The average ICT cost-to-assets ratio across a sample of international banks is approximately 0.04 percent whereas the average ICT cost-to-assets ratio across a sample of African banks at 0.46 percent.

### The need for change

African financial service providers are not as efficient as their international counterparts, to date they have been able to pass on the cost of this to consumers through higher fees and margins. To reach more consumers, financial service providers will need to evolve and to develop much lower-cost operating models that are acceptable to their regulators. Regulators will also need to accept and encourage the use of new digital technologies, and cloud banking, in particular.

<sup>49</sup> World Bank, 2017.

<sup>50</sup> State of the Industry Report on Mobile Money, GSMA, 2018.

<sup>51</sup> Concept Note, Africa Fintech Summit, 2018.

# Cloud banking



## Introducing cloud banking

Cloud banking involves making use of internet technologies to deliver a full range of financial products and services using virtual and scalable ICT infrastructure. As it reduces the need to invest in hardware and software assets, **cloud computing is changing the way FSPs consume technology.**

Many FSPs are already using cloud-based services for non-core and non-critical purposes, such as human resources, e-mail, CRM and some document storage. The transition to cloud banking services, including payments, transfers, account management and treasury has, however, been slower due to the nature of the risks and regulations in banking.

## Cloud service and deployment models

Cloud computing offers a choice of three basic service models, namely Software as a Service (SaaS), Infrastructure as a Service (IaaS) and Platform as a Service (PaaS).

The SaaS model offers users access to application software from a device with an internet connection and a web browser. The product is developed, packaged, run and managed by the provider, with users only having the capability to configure certain settings. Applications are either free or available by subscription. In most cases, SaaS functionality refers to end-user applications such as Gmail, but it is also widely used by banks for such functions as customer relationship and productivity management.

The IaaS model allows users to access computer infrastructure resources, such as processing power, storage, servers and networks, and enables businesses to run their own operating system and applications on this virtual infrastructure. Of all the services models, IaaS offers the highest level of management control and enables many users to make use of a single server.

The PaaS model offers a computing platform that enables users to develop their own applications by making use of various libraries, languages, databases, tools, and other providers' resources. In other words, it is a software development platform that is delivered online.

In addition to the choice of models, FSPs need to decide on deployment options. These include public cloud, private cloud and hybrid cloud, all of which offer different features and benefits. The main difference between the deployment models relates to where the infrastructure resides and who has control of the infrastructure<sup>52</sup>. Public cloud is openly available for use by multiple users and has unlimited scalability. On the other end of the spectrum, a private cloud model is available for the exclusive use of a single organization and offers increased flexibility as it can be customised to the organisations requirements.

Most FSPs are already using or are considering using the hybrid option, which combines the cost savings offered by public infrastructure with the enhanced security of the private option.

<sup>52</sup> FSI Insights on policy implementation No 13 – Regulating and supervising the clouds: emerging prudential approaches.

## The case for cloud banking

Cloud banking offers FSPs the opportunity to significantly reduce ICT costs, improve flexibility and reach new markets. The added flexibility, especially, allows FSP to reduce the time needed to develop and launch new products and services, which enables them to be more responsive to the changing needs of their customers.

Cloud functionality also enables FSPs to collaborate better with third parties, to make use of sophisticated analytics capabilities that are unavailable or more expensive to access locally. Further, cloud computing improves business continuity, with the cloud service provider (CSP) being responsible for managing all risks of cloud-based operational systems. As such, cloud functionality is enabling FSPs to move away from a product-focused approach and to adopt a customer-centric approach.

An important consideration to adopting this functionality is the infrastructure available to support cloud computing as it requires extensive and affordable broadband access. The cost of data for consumers is also an important constraint. Underdeveloped fixed connectivity and the high cost of data unfortunately continue to be an obstacle to FSPs in some countries, preventing them from being able to benefit from introducing cloud functionality.

Another major barrier to adoption are concerns about security and compliance. Cloud-based networks, by their nature, are vulnerable to attack via the internet, but this is offset by the capability of large CSPs to manage this risk as well as by a reduction in the risk associated with managing on-site ICT systems.

Some African banks are already realising the value of cloud banking. TymeBank, a new digital entrant to the South African banking sector, has made a 56 percent cost saving by using cloud services from Amazon Web Services (AWS) rather than adopting traditional database technology<sup>53</sup>. Cloud has also allowed the bank to securely scale to support over 5,000 new customers a day since February 2019.

By having its back office in the cloud, the bank has a cost advantage over competitors and has been able to pass cost savings onto customers by providing cheaper banking services, allowing them to reach more of the under-served and unbanked market. TymeBank's use of APIs through its cloud banking platform allows it to connect with third-party partner systems and offer a richer customer value proposition, such as a partnership with a large supermarket chain in South Africa<sup>54</sup> which allows customers to utilise till points across the country to conduct their everyday banking transactions.

## Regulation

**Regulatory issues are a concern for FSPs that wish to adopt cloud banking, as cloud computing requires that regulators have well-defined positions in a number of policy areas, including data privacy and data security, cybercrime, intellectual property, ICT readiness, migration complexity and operational risk.**

**Different national regulators have adopted a range of different approaches to the regulation of cloud banking**, ranging from a passive or reactive approach to proactively developing appropriate regulations. The latter requires a close working relationship between FSPs and regulators in order to develop a supportive ecosystem and encourage innovation in the market.

The EU has been at the forefront of defining an enabling regulatory environment for cloud banking services. This has involved both the regulation on the use of data and privacy as well as regulations to govern access to the payment system and financial sector specific guidelines.

The European Banking Authority (EBA) released its final guidance for the use of cloud service providers by financial institutions at the end of 2017 that set out the regulators expectations if financial institutions intend to adopt cloud computing services<sup>55</sup>. The Recommendations address five key areas: security of data systems; access and audit rights; location of data and data processing; chain outsourcing; and contingency plans and exit strategies.

African financial sector regulators approach to cloud banking varies considerably. The Central Bank of Nigeria (CBN) prohibits the use of innovative technologies until the Central Bank has a clear understanding of the risks and benefits associated with the technology and has implemented formal legislation. The South African Reserve Bank (SARB) takes a proactive regulatory approach and has issued a directive regarding cloud computing and the offshoring of data in 2018. Under this directive banks are required to follow a risk-based approach when adopting cloud solutions<sup>56</sup>. The Central Bank of Kenya (CBK) requires that Kenyan banks have outsourcing policies, that encompass the procedures for determining which activities can be outsourced; the structuring of the outsourcing agreement, ownership and confidentiality of data; managing and monitoring the risks; and the establishment of an effective control environment at the bank and service provider<sup>57</sup>.

In order for financial institutions to use cloud banking technologies the regulator needs to ensure that there are appropriate data protection rules in the country or to develop rules under the banking regulations. Only 29 percent of African countries have data privacy legislation in place<sup>58</sup> and this means that financial regulators will need to compensate for weak general data protection laws with strong sectoral laws. Furthermore, there needs to be a balance between data protection and safeguarding the right of access to information. Rather than a blanket restriction on moving data offshore, which may drive up the cost of banking solutions, regulators need to define strong cross-border data rules that link any cross-border data movement to the quality protection in the receiving country.

<sup>53</sup> Amazon data centre chief lifts lid on SA plans, A. Goldstuck, 2019.

<sup>54</sup> Year of the digital bank, Brainstorm: the Business Technology Magazine, 2019.

<sup>55</sup> EBA issues guidance for the use of cloud service providers by financial institutions, European Banking Authority, 2017.

<sup>56</sup> Directive on cloud computing, the South African Reserve Bank, 2018.

<sup>57</sup> Risk Management Guidelines, Central Bank of Kenya, 2013.

<sup>58</sup> Privacy is Paramount – Personal Data Protection in Africa, Deloitte, 2017.



## A new model of regulation

African regulators need to develop clear policy positions and on all issues relating to the use of cloud computing, including data privacy, cybercrime and operational risk. Regulators and government ministries will need to work together to facilitate the development of regional standards and a harmonisation of rules, which will ensure the optimal portability of data for cloud services and allow CSPs to operate free from trade barriers. In addition, they will need to ensure that ICT infrastructure, broadband deployment and connectivity are robust and data charges are affordable before financial institutions are allowed to adopt cloud banking.

Further, effective data privacy legislation is essential in order to **protect the confidentiality of consumer and corporate data in the cloud**. Some of the key requirements include requiring the consent of subjects for data processing, anonymising collected data to protect privacy, providing data breach notifications, and safely handling the transfer of data across borders. Legislation should also allow FSPs to evaluate the ability of the CSP to restore and access personal data as well as to implement appropriate controls such as **disaster recovery procedures**, in the event of any disruption in cloud services. They must be able to ensure continuity of service to customers by being able to transition back to their own databases in the event of operational failures of CSPs or if the services deteriorate to an unacceptable degree.

In terms of data sovereignty, regulators need to implement regulation that ensures there are few or no restrictions placed on cross-border transfers of data so that CSPs can move data through the cloud in the most efficient way.

When it comes to cybercrime, the degree of protection varies widely from country to country. With only 15 African countries having adopted the AU Convention on Cybersecurity and Data Protection in varying degrees, regulators should work to improve on **security issues**. They will also need to ensure that there are strong intellectual property laws in place to protect cloud solutions from misappropriation and the infringement of technology.

From an operational perspective, regulators will need to **monitor the resilience of FSPs**.

Finally, financial regulators will need to adopt a supervisory approach that identifies where operational failures could have a significant impact on the economy and will need to consider the levels of resilience they expect financial institutions to demonstrate.

## Conclusion

Cloud-based solutions can significantly reduce costs for FSPs and provide the flexibility needed to implement shorter product development cycles. Adopting cloud banking solutions is an opportunity for FSPs to achieve efficiencies that allow them to deliver low cost financial services and expand their reach to the financially underserved and excluded. The technology can also enable smaller institutions to hold their own against larger institutions.

However, before FSPs can fully realise the benefits of migrating to the cloud they need to receive the support of regulators. Financial regulators will need to define clear policy positions on all issues related to cloud computing, while telecommunications regulators will need to ensure that the telecommunications infrastructure is fit for purpose and invest in developing broadband network infrastructure.

A clear and joined up regulatory response is necessary to respond to the risk that the infusion of technology and finance creates while encouraging the significant opportunities for improved efficiency and costs, and better coverage of underserved consumers. It is incumbent upon regulators to take a balanced view and craft regulation and supervision in a way that ensures risks are appropriately mitigated while not creating barriers to responsible innovation that improves access to financial services, customer experience and efficiencies within the financial system.



# Contributors' biographies



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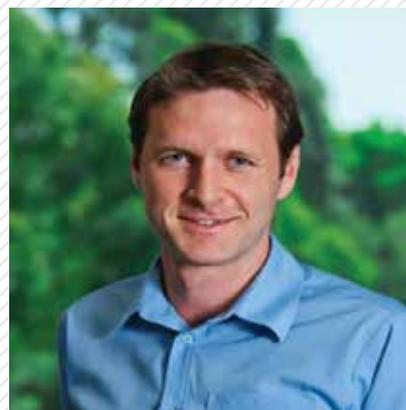
Ruan Swanepoel is the Head of the GSMA's Mobile Money programme, where he oversees the strategic direction of the programme, engaging with a broad range of external stakeholders. Prior to joining the GSMA, he worked in Southeast Asia for Wing Cambodia as the Chief Commercial Officer.

Ruan has qualifications from the University of Technology in Cape Town and has over 18 years experience in the telecommunications and financial services industry. Previously based in Tanzania, Ruan worked across a number of African countries on both digital and traditional financial services strategies with a core focus in developing and managing sustainable financial services. Ruan is passionate about the development of consumer products and digital innovation, having overseen many projects, involving a number of world firsts; cross border remittances on mobile wallets, interest distribution to mobile customers on their digital wallets, and enabling interoperable wallets with all mobile operators in Tanzania.



**Rachel Balsham**  
Deputy CEO, MFS Africa

Rachel manages investor relations, strategic partnerships, and talent. Prior to joining MFS Africa, she was a consultant with Bain & Co, where she worked on strategy and operations projects for telecom and financial services clients. She began her career at the Millennium Challenge Corporation, working on large-scale development grants in West Africa. She holds an MBA from the Wharton School and an AB from Smith College.



**Jonathan Greenacre**  
Hitachi Center Faculty Fellow, Tufts University

Jonathan Greenacre is a university researcher and lawyer. He focuses on the regulation of banking, payments, mobile money, and digital financial services (DFS).

Jonathan's research focuses on developing a "regulatory roadmap" for DFS. This work has been supported through research funding from Oxford University, Harvard University, and the Winston Churchill Research Trust. He has delivered lectures on his research in Africa, Asia, and Europe.

A lawyer by background, Jonathan has advised the United Nations and Asian Development Bank on how to regulate DFS. He has also advised the central banks of Fiji, Papua New Guinea, Malawi, and Timor-Leste. He is a member of the United Nations' Pacific Roster of Experts. Jonathan has degrees in politics and law from studies in Australia. He also read law at Oxford University (Masters in Law and Finance).



**Brendan Pearce**  
CEO, Finmark Trust

Brendan Pearce is the Chief Executive Officer (CEO) of FinMark Trust. Prior to his current position, he has held various positions such as the Advisor to the Managing Director of the Land and Agricultural Bank of South Africa, Chief Executive Officer at the Manufacturing and Engineering and Local Government and Water Sector Education and Training Authorities. He was also CEO at Umhlaba Development Services, a development consultancy he established and ran for eleven years. More recently, he worked at Vodacom as the Executive Head in the International legal and regulatory team.

Brendan holds a BA and LLB degree from Wits University and is an admitted advocate of the High Court in South Africa. In addition to his law degree, he has attained a master's degree in Banking Law at the University of South Africa, a certificate in Payment Systems from the University of Stellenbosch and a certificate in Digital Payments from Tufts University.



**Anne-Rita Ssemboga**  
Programme Officer, International Telecommunications Union

Anne-Rita has been monitoring and analysing new technologies and their impact on ICT policy, regulation, economics and market structure for some 20 years. She began her career in the industry at the Uganda Communications Commission (UCC), the regulatory agency in Uganda and was the Head of the Competition and Economic Regulation before joining the ITU in 2013. At ITU, Anne is working with the Regional Office for Africa based in the Southern Africa Office, Harare Zimbabwe as a Program Officer. She is a focal person for a range of issues ranging from Economics and Finance, policy and regulation, ICT statistics and measurements, ICT & climate change among others. She has contributed to a number of technical papers and discussions at national, regional and international levels in areas such as universal access, broadband infrastructure investment & pricing, international internet connectivity (ICC), International Roaming, Mobile Finance, eWaste and Climate change, QoS among others. Anne holds a Master's Degree in Economic Policy Management, Makerere University; a Post Graduate DIP in Economics for Competition Law, Kings College, London (UK) and BA (Hons) in Economics.



**Irshaan Raghunanan**  
Innovations Lead and Global Markets, Standard Bank Group

Irshaan Raghunanan holds a BCom Law and Economics degree from the University of Johannesburg, as well as a multitude of South African financial markets qualifications (Registered persons and FAIS).

His banking career spans 10 years, starting his career as a small entrepreneur focused South African bank, Mercantile Bank, working in the strategic projects team that built and managed the Banks strategy under the CEO.

In 2012, he joined the Corporate and Investment division at Standard Bank in Global Markets with a focus on African Financial markets (foreign exchange and money markets in particular). In addition, he spent a year in our Transactional products and services business, which manages Cash Management and Trade.

In 2017, Irshaan and his team started the eFlow Desk in Global Markets focused on building, rolling out and managing digital solutions for clients. They were also tasked with solving for the future state of Treasury Risk Management in South Africa.

Irshaan was given the opportunity to become head of Global Markets Flow Sales Innovation in 2019, with the specific focus on building out solutions using new and existing technology.



**Richard Ketley**  
Director: Genesis Analytics

Richard Ketley is a director of Genesis Analytics, and has been head of the banking and access to financial services practices, since 2001. Richard is widely recognised and consulted as a leading expert on banking in Africa. He has worked extensively with banking and financial sector clients throughout Africa and the Middle East.

Richard has lead assignments with banks and financial institutions for over 7 years. These assignments cover the full range of specialist areas covered by Genesis Analytics from working with Boards and management on addressing strategic challenges and bank acquisitions, to advising clients on treasury strategy, to the development of effective retail value propositions and effective pricing strategies. Richard has a particular interest and focus on payments and money transfers, solving the challenges of providing banking services to small businesses, and pricing strategies. Richard has advised many of the top banks in our geographic area. Richard is an accomplished speaker, and lectures widely on topics in retail banking.

Before joining Genesis, Richard was the Head of Strategy: Africa for Standard Bank, where his responsibility extended to 17 countries, and was focused on mergers and acquisitions, retail and card strategies. He has also worked in Debt Management, Global markets and Macro-economic policy. When not consulting Richard is producing art works.

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Ms Victoria Mojuto is an Economist by training. On 01 April 2015, she was appointed by Vodacom Group as Executive Head primarily responsible for, Mobile Financial Services regulation and Tax regulation across the five African markets, DRC, Tanzania, Mozambique, Lesotho and Ghana.

She holds a BSc from University of Pretoria and MBA from the University of Athens (ALBA, Athens, Greece).

Ms Mojuto started her career at the Johannesburg Stock Exchange (JSE) in 2008 as an equity analyst and held various positions within the organisation. She proceeded to work for the National Energy Regulator of South Africa (NERSA) in 2010 as an Economist with specialisation in competition economics and tariff setting. She has received various training in regulation and public policy from the University of Michigan (USA) and IP3 in Washington DC (USA) and University College of London (UK).



**Judith Obholzer**  
Managing Executive: International Legal & Regulatory, Vodacom

Judith Obholzer is the Managing Executive for Legal and Regulatory Affairs responsible for Vodacom's operations in Tanzania, the Democratic Republic of Congo, Mozambique and Lesotho. An economist by training, she worked at the Department of Economic and Social Affairs of the United Nations before joining Vodafone. She started her career with the company holding commercial roles in Germany before moving on to the head office in London, where she provided economic and regulatory advice to all 26 Vodafone markets. She is a seasoned expert in telecoms regulation, new digital business and mobile payments.







