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REGULATING MOBILE MONEY TO CREATE AN ENABLING BUSINESS ENVIRONMENT

Bronwen A. Kausch

A research report submitted to the Faculty of Management, University of the Witwatersrand, in partial fulfillment of the requirements for the degree of Master of Management (in the field of Public and Development Management).

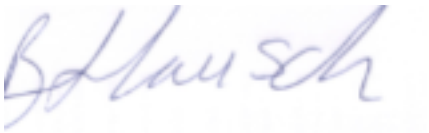
October 2012

Abstract

The technology to deliver mobile money services has been in place for over a decade, yet very few mobile money operations have reached scale. The purpose of the following research is to explore the possible reasons for this by analysing factors which impact the rollout and uptake of services. This is achieved through a case study of mobile money service offerings in the developing world in general and South Africa in particular. Findings of the research highlight the complexities of the challenge of reaching scale, particularly those relating to regulations, finding the appropriate business models and other socio-political factors. A further finding points to a possible lack of appropriate skills in the mobile money industry as a reason for services not reaching scale.

Declaration

I declare that this report is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree of Master of Management (in the field of Public and Development Management) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.



Bronwen A Kausch
19 October 2012

Dedication

For my children, Nicholas and Alexandra. Your love, patience and constant support have seen me through this journey. You have been gracious in your sacrifice and my completion is, in no small part, due to you both.

To my mother Gloria, your belief in me has never waivered – even when mine did.

To my father and brothers, you have all had a part to play and I am grateful for your long-distance support.

To my dear friends, Claire, Lise, Gavin, Paul, Jason, Alastair, and Joy, thank you for your good-natured tolerance.

To the late Professor Dirk Kunert, I remain forever indebted.

To Hendrik, thank you for the music.

"Everything we hear is an opinion, not a fact. Everything we see is a perspective, not the truth."

Marcus Aurelius

Acknowledgments

My deepest thanks go to my supervisor, Charley Lewis, who has patiently guided me through the research process. I am equally grateful to Luci Abrahams and the many lecturers at the LINK Centre who have inspired me to push past the boundaries of pedestrian thought. A special note of thanks to Will Hahn who, over the last six years, has shared his valuable insights and who remains endlessly positive about the future of South Africa.

"Technology is a word that describes something that doesn't work yet."
Douglas Adams

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CHAPTER 1 Introduction and Background: The context of mobile money

1.1. Introduction

The technology to deliver financial services, including banking and microfinance over a mobile device has been in place for over a decade, yet the uptake of these services to the financially disenfranchised remains comparatively low, and has certainly not met the bullish projections delivered by the industry ten years ago, as correctly noted by Boer and De Boer, (2010 p 10). A second wave of mobile money pilots have occasioned scholars within e-development generally, and ICT for Development more particularly, to look closely at regulations, (both technical and financial) and to assess whether these are assisting or hindering the uptake of mobile financial services.

The following research will outline how current regulations governing money transfer over mobile devices, and the business models which are used by companies providing the services, are affecting the rollout and uptake of financial services in the developing world, with particular reference to South Africa. In so doing, it will investigate how to speed up financial service delivery in developing countries in general, and in South Africa in particular.

1.2. Background

The terms m-banking, m-payments, m-transfers, and m-finance or m-commerce refer collectively to applications which enable users to use mobile devices to access and manipulate their bank accounts, store value in an account linked to their device, transfer funds, or even access credit or insurance products. (Donner and Tellez, 2008)

David Porteous (2006) explains that mobile banking (as a subset of the larger category of electronic banking) can either be additive or transformational. Additive mobile banking, he explains, functions as an additional channel to existing traditional

banking channels. Transformational, however, targets customers who do not have access to traditional banking services.

Mobile Money, or m-money, is a form of electronic money or a stored value which is used to execute payment over an electronic channel and using hardware (cellphones) or card-based mechanisms. (Alampay, 2010 p 3).

The GSM Association has described M-money as:

> *Services that connect consumers financially through mobile phones. Mobile Money allows for any mobile phone subscriber – whether banked or unbanked – to deposit value into their mobile account, send value via a simple handset to another mobile subscriber, and allow the recipient to turn that value back into cash easily and cheaply* (GSMA, 2009. p 7)

It is clear that no matter what the finer definition of Mobile Money, the ability to use a simple, ubiquitous device such as a cellphone to transact will bring with it distinct advantages to those who do not have access to formal banking services.

1.2.1 The m-payment landscape

More than half of the world's adult population remain unbanked and the majority of those reside in developing countries (McKinsey & Company, 2009). However, a large number of those people without access to formal banking and other financial services have access to a mobile phone. According to the Mobile Money Union, the number of people who are unbanked, but have access to mobile phones stands at 1 billion today and is expected to grow to 1.7 billion by the end of 2012 (GSMA 2009). In fact, the mobile phone sim card penetration in South Africa, for example, is now at 101.1 percent, and smart phones comprised more than half of mobile phones sold in in that country in 2009 (Gartner 2010). The ability to use these mobile devices to deliver services to communities outside the formal financial sector has also been repeatedly highlighted by the popular press.

In 2009, expectations around the growth in mobile payments were high. Research company, Arthur D Little, forecast global m-payments to reach $250 billion by 2012,

growing at 68 percent per annum from a base of $29 billion recorded in 2008. (April 2009). The company also suggests that cross-border mobile remittances are expected to grow by 146 percent per annum. The growth figures predicted in this field made it an attractive business to be in and many global financial and telecommunication companies were talking up the prospects as seen by the extensive coverage given to m-money by the popular press.

From a government point of view, remittances make up a significant portion of the money flowing in and out of a country. Official figures from the World Bank show that remittance flows to developing countries reached $316 billion in 2009 and researchers expect this to grow by 6.2 percent in 2010 and 7.1 percent in 2011. (as cited by Ratha, Mohapatra, Silwal, 2010)

The role of remittances in the economy is now being taken seriously, most especially since figures are showing that developing countries are receiving twice as much in-bound remittance than official development aid (Comninos, Esselaar, Ndiwalana, & Stork, 2008). In fact, remittance is now being viewed by economists as a key means to meet external financing gaps. (Ratha et al 2010)

However, the volume of remittances could be significantly more if the cost of sending money home by migrant workers was less, if the means to do it were simpler, and if the access to services were more available. (Comninos et al, 2008).

Making use of mobile phones to conduct remittances makes excellent sense as it answers many of the problems described above. A key problem though, is that the flow of money – especially across borders – is a primary risk concern to governments. (Merritt, 2010. p 25)

1.2.2 Regulating finance in a post sub-prime crisis environment

In the wake of the 9/11 attacks and the more recent sub-prime crisis a slew of financial regulations were issued which required financial institutions to be able to monitor the movement of money and who was moving it. Know Your Customer

(KYC) regulations became a requirement for countries which wished to adhere to global standards and which were serious about maintaining their trade relationships with the powerhouses of the West. (Johnston and Nedelescu 2005)

Monitoring and controlling money was also used as key means to cut down on anti-money laundering (AML) and together these Anti-money laundering / combating the finance of terrorism (AML/CFT) laws meant significant restrictions on who could handle money. The ensuing fallout of the sub-prime crisis saw the further tightening on how money changed hands. It also saw many countries enforcing stricter consumer protection laws.

Perhaps an unintended result of this was a more complex environment for m-payments. Harsher licensing requirements, stringent foreign currency laws, daily transfer limits and other requirements all made the rollout of m-payments more difficult as argued by Porteous (2006).

The nature of financial services delivered over a mobile device, across networks, across sovereign borders makes the regulation of m-payments and mobile money exceptionally tricky, and researchers have acknowledged this, including Porteous (2006).

> *The field of m-payments and m-banking is not only new and fast evolving but also sits at the overlap of several regulatory domains—those of banking, telco and payment system supervisors, and anti-money laundering agencies. The overlap substantially raises the risk of coordination failure, where legislation or regulatory approaches are inconsistent or contradictory* (Porteous, 2006)

Merritt argues that banking and technical regulators have been used to operate autonomously and that the cooperation to provide oversight of mobile money may well be a challenge, but will become increasingly necessary if we are to see a 'risk-based and proportionate oversight' (2010 p 18). Indeed, the need for proportionate or balanced regulations is a common theme when assessing regulations.

1.2.3 The business case for mobile money

Understanding the mobile money ecosystem first requires researchers to understand the players involved as well as their motivations.

The business benefits for delivering mobile money services may be different for banks than for Mobile Network Operators (MNOs). For MNOs, the ability to increase average revenue per user (ARPUs) is compelling. Dolan (2009) notes that ARPUs for mobile money customers are 74 percent higher than the non-mobile customers. He also notes that value added services such as these help combat customer churn.

Banks, on the other hand, are seeing the benefit of using mobile as the means to reach the large numbers of unbanked individuals, and thereby increase their customer base.

Today there are three commonly accepted broad business models used to deliver mobile money and simply described by Boer and de Boer (2010): The bank- centric; the mobile operator-led model; or initiatives in which banks and Mobile Network Operators (MNOs) team up and which are referred to as partnership-led models. Each of them has different technical and business challenges to overcome – not least of which are country specific regulations, as noted by Merritt (2010). More recently, there have been a number of pilots where mobile payment solutions partner with the major card networks to add an additional level of functionality. The commonly held business models as noted by Boer and de Boer (2010) have also changed to accommodate joint ventures between MNOs and Banks to create hybrid models. (Alampay 2010)

Whether led by a banking institution or a mobile network operator, mobile money services also rely on representatives within the community. The ecosystem should also include the agents who perform cash-in / cash-out services, manage account initiations including customer due diligence and, in some instances, even identify new applications.

Finally, as argued by Merritt (2010), ecosystem should also include Regulators, who create an enabling environment, protect the consumer as well as the financial system, complete the ecosystem along with the consumer or end-user of the services.

1.2.4 Did they break the mould with M-Pesa Kenya?

The M-Pesa product in Kenya has experienced rapid traction with the local community and in just four years reached 15 million users in a country with a population of a little over 40 million. (Tarrant, 2011)

In October of 2011, the International Monetary Fund (IMF) pointed out that M-Pesa Kenya processed more transactions within the Kenyan borders than its global rival, Western Union, did across all its operational regions combined. Since its inception in 2007 to March 2011, M-Pesa Kenya processed transactions worth Sh828 billion and Sh47 billion in 2010 alone. (Daily Nation, 2011)

The success led to a number of duplicate initiatives, not least of which came from M-Pesa parent company Safaricom which moved into Tanzania and Afghanistan. However, none of the impressive figures from its Kenyan counterpart where forthcoming and even the mainstream press began to question whether the company's impressive local performance would be achieved anywhere else. (Tarrant, 2011)

When examining the reason for M-Pesa Kenya's success, industry commentators would sometimes point to the bouquet of factors which facilitated the growth of the product. Issues from the existing distribution network to the social factors were pointed out. Amongst these factors was the regulatory environment which existed at the start of the initiative in 2007.

> *The overly-cautious, regulatory driven bank-led approach has all but killed off the possibility of producing an MPESA-like agile, cheap, customer-friendly mobile money application or solutions built around the requirements that sub-Saharan African customers so desperately need. This has had profound effects on the pace of mobile money adoption.* (Collins, 2011)

An argument put forward by Collins (2011) was that M-Pesa came into existence in a 'regulatory vacuum' and that the service started operations without the need for a banking license. This allowed Safaricom to aggressively grow the service through its existing network of agents.

It wasn't long, however, before the local banks grew nervous and a year later the Central Bank of Kenya was lobbied to investigate M-Pesa. While the banks' efforts to curb the mobile solution were not successful, it would set the scene for how banks initially viewed the mobile competition.

Kenyan resident and technology commentator, Erik Hersman, points out that the reason why banks are so reticent about mobile offerings, is that they are quite simply, not able to compete. (Hersman 2010)

At the time of publication, the costs of sending up to $500 on the M-Pesa platform was as little as 37 US cents. In addition, M-Pesa users could save up to $1000 on their account without incurring any additional bank fees. Hersman (2010) contends that banks simply cannot compete with this offering from Mobile Network Operator, Safaricom. He goes on to suggest that regulators are more effectively lobbied by the big banks and are naturally inclined to regulate in their favour.

1.2.5 Is South Africa immune to the sluggish uptake?

South Africa has been one of the early adopters when it comes to mobile technology – particularly in the m-payments field. (CGAP. b, 2011). It is also the home to a number of m-money development companies, not least of which is Fundamo, recently acquired by Visa for $110 million (ITWeb 2011).

According to CGAP (b. 2011), the country has over 100 000 point of sale devices and close to 10 000 ATMs. The South African government has been committed to improving access to financial services, particularly for those who have historically

been denied access to financial services and which is evidenced in the country's Financial Charter.

Through the Charter, financial services companies in South Africa and other participants commit to inter alia:

> *Actively promoting a transformed, vibrant, and globally competitive financial sector that reflects the demographics of South Africa, and contributes to the establishment of an equitable society by effectively providing accessible financial services to black people and by directing investment into targeted sectors of the economy.* Financial Charter (2004)

According to CGAP's review of the South African banking sector (CGAP.b, 2011), around 63 percent of the adult population has access to a bank account through the formal banking sector. The Mzanzi bank account – a co-operative account between the country's major banks and the South African Post Bank – was launched in 2004. While six million accounts were opened, CGAP reckons that many of these are now dormant.

The South African Treasury released a policy document in February 2011, which sought to give clarity to the complex regulatory regime in South Africa. (South African National Treasury, 2011)

While the national treasury acknowledged that proportionate regulation of financial access, (such as provided via mobile devices), was necessary, it went on to state that the risks of misuse of these payment services remained high and should remain tightly governed. Thus far, the only real concession made to better allow access to mobile money services by the poorer communities, has been the relaxation of the full KYC requirements for low-value transactions through a special dispensation under Exemption 17, under the Financial Intelligence Centre Act.

1.2.5.1 Mobile Money landscape in South Africa

MTN and Standard Bank were the first to market in South Africa, launching what was then also one of the first global m-payments solutions in 2005. This was quickly followed by other solutions including Wizzit, which offered a mobile enabled bank account through its local banking partner, the South African Bank of Athens.

Following the much referenced success of M-Pesa in Kenya, Vodacom launched its South African version of the service in 2010. This was achieved by using the banking license of local partner Nedbank.

However, the uptake of mobile money services in the country has been less than stellar.

MTN and Standard Bank invested around $80 million (CGAP. b, 2011) in their joint venture, but after struggling with KYC issues, the low uptake of the service saw the partners suspend the service in 2010.

Subsequent to this, Standard Bank bought the MTN banking business from MTN and folded the MTN Mobilemoney account holders into the Standard Bank MobileMoney platform. MTN, meanwhile went on to launch PayD which is an e-commerce solution allowing online transactions using a pin-based debit card over the MTN Wireless Internet Gateway (WIG).

In June 2011, Vodacom announced that it would be adjusting its marketing model when CEO, Pieter Uys, admitted that the South African M-Pesa service had "…failed to reach expectations and perform as well as it had in other countries, namely Tanzania and Kenya." MyBroadband (2011). By June 2011, there were only 140 000 registered users in South Africa. (Financial Sector Forum, 2011)

The service, which was launched as a joint venture between Nedbank and local mobile network operator, Vodacom in 2010, had focused its marketing attention on the low-income market, particularly black women in rural areas.

The announcement came after Uys and his team had repeatedly avoided answering questions about the performance of the product after the release of Vodacom's annual results in May 2011 leading to speculation that service was a "sinking ship" (MyBroadband, 2011).

Research analyst, Arthur Goldstuck, commented that there were a number of reasons that M-Pesa South Africa would not attain the same level of success as its Kenyan counterpart. (Financial Sector Reform, 2011) These included:

- The fact that Kenya had a high proportion of unbanked citizens compared to a largely banked population in South Africa
- Safaricom was the only dominant MNO offering a mobile payment solution in Kenya, while there were a number of additive mobile banking services in South Africa
- There is a culture of remittance usage in Kenya which is not experienced similarly in South Africa
- There is a lenient regulatory framework in Kenya allowing Safaricom to easily and quickly sign up new members
- Safaricom offered the service at a low cost making it more attractive

It seems that not only are m-money projects in South Africa and other developing countries not reaching the user numbers originally forecast, but the intended profile of the user is not proving mobile payments the solution to financial disenfranchisement it was originally held up to be.

The question on why this is the case becomes more important than ever. Is it the regulatory regime which is holding up user uptake – as suggested by those who argue for proportional regulation such as Porteous,(2009) Merritt (2010) and Alampay

(2010)? Or is it the business models which are unsuitable as pointed out by Mas and Radcliffe (2010)? Or, is it a combination of both?

1.3. The problem of mobile money

The business benefits for Mobile Network Operators, banks and third-party agents to increase their engagement within communities appear to be compelling. Boer and de Boer (2010) list 150 mobile payment initiatives and pilots in their market analysis, adding that more are being added every week. However, in the last two years, players in the mobile money space have begun questioning why the uptake and use of mobile money services have not been as successful as originally thought. Research houses such as Gartner (Moyer, 2010) and academics such as Mas and Radcliffe (2010), Porteous (2009) and others are pointing out that, even though the benefits of mobile money services for the previously financially disenfranchised are clear, there are very few of the many projects around the globe which are capturing the market they were designed to serve. Indeed, of the more than 150 payment initiatives referenced by Boer and de Boer (2010), only five have more than a million registered users. (Moyer 2010)

Given the apparent failure to reach scale of so many mobile money projects, attention is now being placed on how to reach the critical mass required to make mobile money services self sustaining.

> *Despite progress over the last year, there is an acknowledgement that there are still too few successes at scale. Much remains to be done to reach critical mass, the point at which an industry has gained sufficient penetration for momentum to be self-sustaining. In the mobile money space, this will require both more customers and more transactions per customer.* (Dolan 2009, pg10)

Focus is now being placed on how mobile ecosystems can become more dynamic and productive. Issues of competition and interoperability of services are now a key requirement on the regulatory agenda (Dermish et al 2011). Proportionate regulatory approaches are being strongly advocated and debated (Lyman et al 2008).

Authors such as Mas and Radcliffe (2010) are investigating business challenges standing in the way of mobile money services reaching scale.

Given the low uptake of services in countries such as South Africa, it becomes imperative to better understand the reasons behind the sluggish performance. This is of particular importance to policy makers and regulators, which are looking for ways to create an enabling environment and encourage financial inclusion in developing countries.

1.4. The purpose of this research

The purpose of this research is to critically examine existing mobile money implementations in developing countries, with a particular focus on South Africa.

This will allow us to determine what business models are being used to deliver mobile money. I will examine how the models differ to those in other developing countries, particularly those in countries which are regarded as being successful, such as M-Pesa in Kenya, and how these have performed in relation to the South African initiatives.

I will examine the business strategies of mobile money offerings which have been designed to overcome the 'sub-scale trap' as referred to by Mas and Radcliffe (2010) and assess their efficacy based on performance.

In addition I will examine what regulatory environments are governing the delivery of mobile money. I will examine how these are impacting the rollout and delivery of mobile money services and how they are affecting the business models being used by service providers.

Finally, I will examine other factors which may be hindering user uptake such as financial literacy, technical literacy and consumer awareness to ensure I have an holistic view of the mobile money ecosystem and all issues affecting it.

By conducting thorough research on the mobile money ecosystem in developing countries in general, and South Africa in particular, I will have a clear oversight of all aspects which may impact end-user uptake of services. Through this, and by identifying challenges and shortfalls in the regulatory environments, I will determine if current regulations are helping or hindering the rollout and uptake of mobile money services. It is only through an holistic oversight of the mobile money ecosystem and its drivers that I will be able to assess the extent of the effect of current regulations and if it is really these which are impacting the rollout and uptake of m-money services.

The research is divided into the following parts:

1. An introduction and background, mapping the mobile money landscape and outlining the issues affecting scale including a problem and purpose statement
2. An in-depth view of what has been written on the topic through a literature review
3. A research question to be applied to the research and the methodology used to investigate the question
4. Findings of the research conducted
5. A critical analysis of the research findings
6. Concluding remarks including areas for further research and recommendations

In accordance with the above structure, it is appropriate to begin the research with a thorough understanding of what has been written on the topic of mobile money and to assess which issues affecting scale have already been addressed.

CHAPTER 2 Literature review

2.1 Setting the scene

As more mobile money projects are rolled out across the globe, analysis of their performance is calling into question their sustainability. Bullish projections in 2008 and 2009 are being revised down (Gartner Dataquest, 2011), even for the developing world, once thought to be the region with the largest growth potential.

The body of work on mobile money has shifted from focusing on the developmental and social benefits of mobile money (Pralahad 2006), to investigating what is required to increase user uptake, how policy makers and regulators can create an enabling environment, and how banks and mobile network operators should be addressing low user uptake as is seen in the writings of Mas and Radcliffe (2010), Heyer and Mas (2010) and others.

When critically examining what factors impact the delivery and uptake of mobile money services, it is important to cover four areas: what constitutes scale and sustainability; how regulations impact user uptake; how business models are designed to encourage user uptake; and finally, what social issues may impact user uptake.

This will allow us to better examine the challenges outlined in the problem statement and will facilitate a clearer understanding of what can be changed to encourage user uptake of mobile money services in the developing world in general, and in South Africa in particular. It will also highlight any research gaps in the current literature.

2.2 What is scale?

Some scholars, such as Mas and Radcliffe (2010), are examining why so few m-money projects are reaching the scale required (such as the case with M-Pesa Kenya) to operate sustainably. In their paper, Scaling Mobile Money, (2010) these two authors argue that there are three business challenges which stand in the way of m-money projects reaching scale:

The network effect – this states that the value of joining a network is directly proportional to those already on the network. In other words, it only becomes attractive to be on a payment network when your family, friends and business associates are themselves on the network.

The chicken-and-egg trap – this is the challenge of growing network agents and customers in tandem. It is only an attractive business for a potential agent when there are customers to generate revenue. Similarly, it is only attractive to become a customer when you have convenient access to agents.

Trust – like many new technologies, people will only sign on in numbers once they have heard from their peers that the service is trustworthy. Again, something which can only be attained through a sizeable user-base.

Mas and Radcliffe (2010) refer to organisations which can't overcome these challenges as being victim of the 'sub-scale trap'.

The risk of falling into this 'sub-scale trap' seems to be a very real one for some m-money projects. In fact, global research house, Gartner, has revised its forecast for worldwide mobile payments through 2014 (Gartner, 2011) by 17 percent for both users and the number of transactions. The decline in growth came from the developing world, which had long been the focus of projected growth.

Added to this decline in expected growth for the region is the conundrum of whether or not mobile money is actually achieving the developmental agenda of bringing the previously unbanked into the formal banking fold. Even the largest and frequently referenced success story, Kenya's M-Pesa initiative, may not actually be contributing to the aim of bringing the previously underserviced into the financial fold. For instance, by the end of 2009, 70 percent of registered M-Pesa users had already been part of the formal banking institution (Pickens 2009).

2.3 Finding the right metrics

The definition of what constitutes success in an m-payment initiative may be different for different players. If one is speaking of users constituting scale then one can view the numbers quite simply.

A Gartner report (Moyer, 2010) points out that only five m-payment solutions have achieved more than 1 million users in countries with a high percentage of unbanked citizens. It warns banks that they should not assume they can replicate the success of rollouts in Kenya and the Philippines (which form part of the 'successful' five).

> *In theory, mobile sounds like the ideal technology to reach the unbanked. Mobile, through telco- initiated offerings, has been successful in reaching the unbanked in countries like Kenya and the Philippines. However, our analysis shows that few countries possess a similar set of quantitative metrics for successful rollouts of mobile payment initiatives targeted at the unbanked.*
> Moyer (2010, p 3)

Moyer applies four quantitative metrics which, if exhibited, will point to a higher chance of success for a mobile payment rollout.

These are:

1. A high mobile phone penetration
2. A low banked population
3. A high mobile phone penetration amongst the unbanked population and
4. A high level of remittance activity (as a percentage of GDP) both within the country and across borders

In each instance of success in the five countries, Moyer says remittance was the catalyst for mobile payment uptake – particularly amongst the large migrant worker force. These payments are made by urban workers, to their families in the rural areas, or across borders.

The report goes on to warn that while many countries may have some of the threshold metrics exhibited in the successful rollouts, few have all four. Moyer also warns that even if all four metrics exist, future mobile payment rollouts should not expect to reach these levels of success for some years after launch. In fact, the reports predict that: “Through 2012, 70% of mobile payment rollouts targeted at the unbanked will attain less than 1 million accounts.” Moyer (2010 p 3)

Mas and Radcliffe (2010) argue that identifying the point of sustainability and critical mass is tricky.

They believe scale and sustainability have been reached when two criteria are met.

First, they suggest there should be at least ten times the number of outlets where cash-in and cash-out services can be conducted than there are of traditional bank branches. They argue that this would offer compelling value for customers and would effectively overcome the challenges of physical proximity and access to services for the users.

Secondly, they believe the scheme should generate at least 50 transactions per day, per outlet. In their view, this would sufficiently motivate the merchants to promote the service and, therefore, encourage organic growth.

2.4 How do regulations impact uptake?

Delivering banking to the world’s poor has been on the developmental agenda for many years. The financial difficulties of the poor have been described in depth by Collins, Morduch, Rutherford and Ruthven (2009), where the small, irregular and seasonal payments make financial security a lifetime challenge. For many years, banks argued that delivery to the under-serviced was too costly and not a mass-market proposition.

However, Mas (2011) challenges the proposition that the poor are too costly to service based on the low frequency and small value of their transactions. If this were the case, argues Mas, why do we see flourishing trade in small villages, where one can easily find products such as Coca Cola, cooking oil and even mobile pre-paid cards – all of which have a relatively low value? Surely there must be a business benefit for the store owners and product manufactures to find a way to overcome physical and infrastructural challenges? Mas believes the problem lies with the operating model banks employ and their challenge of taking money from the physical and turning it into the electronic. This 'last mile' or infrastructure gap of reaching the end user in a profitable manner is being exacerbated by the regulatory requirements which govern how banks have to engage with the customers. (Mas, 2011)

2.4.1 Regulating against risk

The benefits of delivering financial services over a mobile device are far better understood than they were a decade ago as evidenced by the wealth of literature from authors such as Porteous, Mas, Merritt and others. Yet the economic environment has shifted since the launch of the first proof of concept pilots in 1999. We live in a world where governments are ever mindful that terrorism can best be controlled by limiting their access to finance. The US Department of State (INCSR 2008) commented that while mobile payments had a potential for good, there remained a serious risk that criminal and terrorist organisations would co-opt these services for their own means. The report bemoaned the lack of transparency in mobile money services and acknowledged that regulators where having a hard time responding to the rapid development in the m-payment field.

> *There are already indications that money launderers and those that finance terrorism will avail themselves of the new m-payment systems. Responsible jurisdictions must find a balance between the expediency of m-payments, particularly in the developing world, and the need to guard against abuse*
> (INCSR 2008 p 20)

The stringent Know Your Customer regulations as well as the AML/ CFT regulations in response to the sub-prime crisis and post-9/11 terrorism scares have placed a significant burden on organisations looking to deliver mobile money services to the developing world (Leyva 2008). A simple lack of infrastructure and basic utilities make customer registration and user validation tricky. Authors such as Porteous (2009), Comninos et al, (2008) and Lyman, Pickens, and Porteous, (2008) have warned that a proportionate regulatory approach must be adopted in order to ensure innovation is not sacrificed at the expense of regulating for risk. Alampay (2010) sums this up when he states:

> *The challenge is striking the right balance where regulation does not hinder useful innovation and experimentation and permit branchless banking to expand and thrive, in other words introduce 'proportionate' regulatory policies.* Alampay (2010 pg 3)

2.4.1.2 Regulating against Risk in South Africa

The South African regulatory landscape has generally been held up to be reflective of that of the developed world.

In its country update, CGAP (a, 2011) notes that South Africa had some of the first mobile payment solutions in Wizzit and MTN Banking. The subsequent launch of the Nedbank and Vodacom joint venture, M-Pesa South Africa, has come at a 'challenging' time, according to the report.

Authors of the CGAP report believe the current regulatory environment to be marked by uncertainty. Know Your Customer regulations are strict, as are the exchange control money tracking requirements set up by the South African Reserve Bank. (CGAP, a 2011)

CGAP (a, 2011) highlights that the South African government has tried to encourage banks to look more closely at financial inclusion as seen by the Financial Sector Charter (2004).

While the government itself has made use of branchless banking to reach the unbanked for the payments of social grants, the CGAP report questions the policy the government has created to enable more of these payment types. The report suggests the South African government has not provided total clarity for mobile money operators in the areas of AML/CFT standards and has restricted financial services exclusively to banks, discouraging new services.

> *Several providers also report that it has taken them longer to launch new initiatives than they expected and that growth in number of customers is constrained by having to take a cautious interpretation of unclear regulations.* CGAP (a, 2011 pg 5)

Reaching the previously un- or under-banked population remains important for the government. Around a quarter of the adult population receive social grants, amounting to R88 billion per annum and going out to more than 14 million people. The government also pays around R2 billion purely in administrative fees to service providers which are involved in the grant payments, making it a lucrative business proposition for businesses in the space. (CGAP. a, 2011). The South African Social Security Administration (SASSA), which is responsible for the grant payments, has recognised that there is room for improvement, and has called for a strategic review in the payment solutions system.

Until now, the South African government has relied on a stringent banking license regime to minimise risk.

Primacy is given to banks and only banks registered under the Banking Act are allowed to function in the business of banking which includes taking deposits. Nonbanks, such as mobile network operators and other companies in the mobile money space can only offer branchless banking in partnership with registered banks. However, authors of the CGAP country review (a, 2011) believe the regulator has recognised the limits this places on nonbanks and have given credence to this in its new vision document (SARB, September 2011)

Under the National Payment Systems Act, nonbanks can only access the national payment and settlement system through joint ventures with banks. In theory, this gives the main banks in South Africa effective control of the national payment system, and is not good for competition. The Competition Commission in South Africa has already raised this issue and has recommended opening up payment schemes to nonbanks "in appropriate low-value or retail payment schemes" (Competition Commission 2008)

Mobile money is also regulated in an additional three areas in order to minimise risk. These are the KYC standards, which govern documentation required when signing up for an account, the use of an agent outside of the banks' branches and existing ATM infrastructure, and foreign exchange controls governing how money flows across borders.

Know your customer

South African regulators have made some attempts to ease the strict requirements of KYC standards. In 2004, the Ministry of Finance issued Exemption 17, which reduced the documents required to open account. For many South Africans, proving their permanent residence is particularly difficult and Exemption 17 aimed to allow those who could not find evidence of their residence, such as utility bill, to register for mobile money services. Exemption 17 also set the account balances and transaction limits in an effort to lower risk of criminal activity. However, this did not address the problem of moving money across borders for the large migrant worker force. CGAP (a, 2011) notes that the Reserve Bank and the Financial Intelligence Centre are looking at ways to free up the flow of money across borders with an exemption similar to that of Exemption 17.

Building on Exemption 17, the South African Reserve Bank issued Circular 6 (South African Reserve Bank, July 2006). This allowed accounts to be opened without a physical verification, as required by Exemption 17. However, the relief given by Circular 6 was counteracted with even lower transaction limits. The South African government then went on to issue a further exemption to KYC requirements for prepaid offerings. The requirements are still fairly stringent though and monthly turnover cannot exceed R3000, the balance on the account cannot exceed R1500 and

no individual transaction can exceed R200. Moreover, no remittance of funds or receipts of cash or withdrawal of funds can take place. Effectively making the pre-paid offering a purely cashless transaction medium.

Agents

Introducing third parties who handle money into the regulated environment adds an additional layer of complexity when it comes to risk.

While there appears to be a fair amount of discretion for banks to use agents in the mobile money networks, the CGAP report of South Africa (a, 2011) suggests that there is not much in the way of regulatory guidance on how to apply flexibility. The report suggests that regulators are waiting for the service providers to give it suggestions on how regulations could be best applied to the use of third parties for the cash-in / cash-out services. The report references complaints by M-Pesa South Africa parent, Vodacom, which says the onerous requirements involved in registering a retail outlet has significantly impeded its roll out of services.

> *Vodacom clearly feels the process of understanding what constitutes a permissible approach to the use of agents has slowed down the launch of M-PESA considerably. Discussions with some banks revealed that, apart from the uncertainty around the broad regulatory space for agents, the accreditation requirements being set for agents under the Financial Advisory and Intermediary Services (FAIS) Act also pose a problem.* CGAP (a, 2011 pg10)

Cross border exchange controls

South Africa has a robust exchange control and only a few organisations are allowed to deal in foreign currency. These institutions are required to adhere to a complex reporting system where each transaction is traceable and individually reported. This increases the cost of remittances and dissuades users from making use of the formal remittance methods, as pointed out in the CGAP report. (CGAP. a, 2011)

KYC regulations can be restrictive and limit the uptake of financial services for the un- or under-banked as correctly noted by Alexandre, Mas and Radcliffe (2010).

In their 2010 paper, Alexandre, Mas and Radcliffe point out that regulators need to perform a balancing act when applying KYC regulations. Supplying the necessary documentation can be difficult, especially for those who do not have formal housing, may not have national ID documents or other means to verify their identity. The authors point out that these requirements may also add an additional layer of costs to mobile money services, making the service unattractive for banks chasing profit margins.

> *For low value account and small transaction, the incremental costs of KYC procedures may be disproportionate to both the money laundering risks they purport to address and the value of these services to poor people. Consequently, they may entice customers to revert to informal money transfer and store of valuable solutions which operate outside of any regulatory constraints.* Alexandre, Mas and Radcliffe (2010, pg 8)

The 'regulatory balancing act' lies in getting as many people onto an electronic money platform. Tracking money on an e-platform is, in theory, much more possible. Using some form of KYC in m-money systems also allows governments to know who is shifting money and to whom. The authors argue that by making KYC requirements too onerous, fewer people will join the formal money exchange mechanisms and governments will in fact push people into the informal financial sectors. It is the informal systems which cloak the nefarious activities of the criminal element. "Making transactions electronic increases the surveillance power of law enforcement, and enhances the ability of poor people to avail of financial services at lower cost," they argue. (Alexandre, Mas and Radcliffe 2010, pg 9)

The strict regulations governing South Africa have not gone unchallenged. In a column based on a presentation he had just given at Tech4Africa on mobile banking, Ivo Vegter (Vegter, 2011) argues the real reason why South Africa endures such strict regulations is to afford the central bank greater control over the currency, and in so doing exercise it's macro-economic policies.

> *The government wants control over monetary policy. It pays for overspending by devaluing the currency, using an ingenious trick known as "quantitative easing". You might recognise it as "printing money". If citizens are free to switch to a currency that keeps its value, government would not have this power…The result of all this over-regulation is a powerful banking cartel that doesn't even need to collude to skim the cream off the economy.* (Vegter, 2011)

2.4.2 Regulating to protect the consumer

Branchless banking through mobile phones relies on a distribution model where third-parties, or agents serve as the point of contact for the end-user or consumer. Regulators are keenly aware that this adds a layer of complexity to ensuring the protection of the consumer. Coupled with this is the fact that many of the under- or un-banked are less literate and therefore need to be protected. Dias and McKee (2010), warn that a balance needs to be struck. Regulators need to ensure the rights of the consumer are not compromised, that consumers are protected against unscrupulous agent activity, and that consumers are assisted to know their rights through educational campaigns. However, these requirements also need to be balanced with the need to create a business environment that still remains attractive to new entrants. Regulation, they argue, should obey two principles: proportionality and effectiveness. The ability to deliver new services through technological developments should not be impeded by over zealous consumer protection regulations.

Porteous (2009) discusses the need to balance the protection of the consumer, with the ability to encourage the uptake of new financial services. He refers to this as the 'regulator's dilemma', which he highlighted first in his 2006 work (Porteous 2006).

The case for consumer protection is plagued with the need to balance the lack of access to credit with the potential for consumer exploitation which may affect a much smaller portion of the population.
Porteous highlights this by quoting a South African policy paper put out by the Department of Trade and Industry in 2005:

> *The credit market is not a risk free arena. There is considerable imbalance of power between consumers and credit providers, consumer education levels are frequently low, consumers are mostly badly informed about their rights and unable to enforce such rights through negotiation or legal action…Over-indebtedness further has an impact upon the workforce, can lead to de-motivation, absenteeism and even a propensity to commit theft.* DTI Making Credit Markets Work, 2005 and referenced in Porteous July 2009 pg 4

In an effort to protect the South African consumer from over-indebtedness, the South African government issued the National Credit Act with the formation of the National Credit Regulator to oversee the Act in 2005. The Act prohibits credit providers from creating reckless lending agreements and requires the service provider to conduct an affordability assessment of the customer. It is, however, left up to the courts to establish and enforce the definitions of reckless lending.

The sub-prime crisis of 2008 was, according to Porteous, partly because of a failure to regulate. Policy makers and regulators are now forced to turn their minds to how to regulate to protect borrowers. However, inappropriate regulations stifle access to finance and can prejudice the poor.

Porteous (2009), points out that the ability to legislate can exceed the ability of regulators to enforce the laws. When looking to create an enabling environment, which does not prejudice the access to credit, Porteous recommends that regulators look at a variety of options including self regulation, state regulation and as well as hybrids of these two. He believes a clear need exists for evidence-based decisions to be made before changes to policy and regulations are made and calls for a proportionate regulatory environment. He cautions developing countries against a rush to regulate based on "inappropriate norms from developed countries." (Porteous July 2010, pg 2)

When it comes to mobile money services, Alexandre, Mas and Radcliffe (2010) point out that all existing mobile money deployments have some kind of bank interface since the electronic value of a customer's money must be issued or backed by deposits in prudentially regulated banking institution. They highlight the importance

of banking transparency as it pertains to a bank's assets (made up of illiquid loans) and the need for regulation around this. The issue of reckless lending – as highlighted by Porteous (2009) – arises when customer's deposits are backed by risky loans. They put forward that there is no reckless lending, only reckless investment of the funds deposited.

When outsourcing the function of cash-in / cash-out functionality to a third party, banks should retain the supervisory jurisdiction. By implementing a special licensing agreement for non-banks, which would only issue e-money or pre-paid cards in exchange for traceable cash, Alexandre, Mas and Radcliffe argue the costs of creating these 'narrow banks' would be sufficiently low to be attractive to formal banks and other service providers. Since there would be no risky lending of the aforesaid money collected, there would be no inherent risk to the consumer and would serve as sufficient protection.

In a focus note for CGAP on nonbank e-money issuers, Tarazin and Breloff (2010), examine the risks of nonbanks handling money, paying particular attention to developing world initiatives.

Kenya's M-Pesa highlighted the shift in the economic value chain when MNO, Safaricom became responsible for shifting sizeable portions of the country's internal revenue over its networks.

Tarazin and Breloff (2010) believe most regulators have addressed the issues of fund security by requiring nonbank service providers to maintain liquid assets equivalent to the total funds collected – this is know as an e-float. Safaricom places collected cash into a number of prudentially regulated banks in agreement with requirement of the Central Bank of Kenya.

The funds which are collected are also regulated. The Malaysian regulator requires that funds are used for no other purpose than cashing out. Similarly, Tarazin and Breloff (2010) point out that the Philippines denies any extension of credit by nonbanks, removing the risk of intermediation by service provider that is not prudentially regulated.

Spreading the e-float amongst multiple institutions also helps mitigate risk. The Afghan regulator requires not more than 25 percent of the e-float can reside with a single institution.

Tarazin and Breloff (2010) point out a regulator also has to guard against possible claims against nonbank service providers. Should the operator face legal claims against it, customers may be at risk from claimants against the operator. To overcome this, M-Pesa Kenya has moved to protect customers by ring fencing its e-floats through a trust account managed by third-party trustees.

Finally, Tarazin and Breloff (2010) argue that having significantly different regulations for nonbanks may disadvantage banks, but go on to point out that policy makers and regulators need to create rules which mitigate risks for customers, but do not stifle "the dynamism, creativity and potential of these new actors," (2010 pg 5).

2.4.3 Regulatory overlap

Mobile Money straddles several regulatory domains and therefore there is an increased risk of co-ordinated failure (Porteous 2009). For example, in South Africa, customers are required to register for both SIM cards and cellphones (Regulation of Interception of Communications and Provision of Communication-Related Information Act, RICA) and when opening a banking account (Financial Intelligence Centre Act, FICA). The information required for both are exactly the same and authors are questioning whether this could not be facilitated through better data-base interoperability (Alampay 2010). In fact the more recent trend in regulation is to find commonality to between regulations and look for ways to streamline these for better efficiencies. Alampay (2010) argues that by increased focus on overlapping issues concerning banking and telecommunication regulators, such as system interoperability, universal access and consumer protection, we stand a better chance of avoiding co-ordination failure and stimulating technical innovation and, ultimately, encourage uptake.

2.4.4 Regulating for competition

Interoperability is not limited to technical systems being able to work together. It is also an important aspect in user behaviour and can refer to networks being able to link together to allow users to switch between MNO service providers or banks. (Dolan 2009). Interoperability is currently fairly limited with user lock-in to service providers and products the norm. Interoperability is increasingly being recognised as a key driver of user uptake and, Dolan and others believe it could assist in mobile money services reaching critical mass. MNOs and banks have tried to hold onto their first-to-market advantage by denying access to their networks to new entrants. Balancing competition and interoperability is therefore another regulatory conundrum which should be critically assessed for future researchers – as noted by Dolan (2010), Lyman et al (2008) and others.

In South Africa, the South African Reserve Bank is beginning to analyse the influence of interoperability. A positioning paper published in January 2011 states that interoperability is a principle which should be sought and maintained wherever feasible in the local payment system. (CGAP. a 2011)

The Reserve Bank is looking to benchmark local regulations to those internationally and has called for a move away from proprietary to open standards and to actively discourage the development of closed-loop payment systems. The challenge ahead of the Reserve Bank is not a small one. SARB is aware of 120 bill payment providers and is responsible for their supervision under Directive 2/2007 to the National Payment System Act of 1998. (CGAP. a, 2011)

2.5 How do business models impact uptake?

Mobile phones have been the focus of volumes of literature in the ICT for development field. The ubiquitous, reasonably affordable, mobile device has been looked at to help improve the lives of the most vulnerable communities. The advent of the simple, fast, payment methods and the ability to store value in an account

associated with a mobile device occasioned many works on how mobile money services would bring the previously un- or under-banked population into the financial fold.

Heyer and Mas (2010) believe this potential of mobile phones to 'revolutionise' access to finance has been brought to the fore by the success of M-Pesa Kenya. However, they point out that the apparent difficulty of other markets to show the same success suggests that some markets and social environment may be more receptive to this kind of innovation than others.

Heyer and Mas correctly point out that M-Pesa Kenya was certainly not the first sustainable mobile money operation. Smart Money in the Philippines, launched in 2001, holds that honour. M-Pesa Kenya, however, has set precedent when it comes to the speed of user uptake.

While Heyer and Mas (2010) acknowledge it is particularly difficult to fully understand why no other m-money project has reached the scale of M-Pesa Kenya, they put forward a framework to assess the business models by analysing various business characteristics.

The authors believe business models require three key characteristics:

'Volume' – m-money transactions are generally low-value. For this reason, a business operating an m-money service will need to capture a large number of transactions to make their business sustainable.

'Speed' – operators need to ensure they reach as many possible customers as quickly as possible in order to sign them onto the service and get money flowing through the systems.

'Coverage' – a key selling point for mobile money is its ubiquitous nature. Being able to send money anywhere, anytime is more than just a marketing ploy. Operators have to support their claims and this means a coordinated roll-out across an entire country.

These three aspects can be seen in relation to Mas and Radcliffe's work (2010) when they examined the challenges of reaching scale.

To add to the operators conundrum, Heyer and Mas (2010) point out that the need for volume, speed and coverage depends on the business model being scalable. As more users sign up, the service must be able to support them.

Heyer and Mas (2010) go on to determine the potential for scale by analysing a market's environment according to five, logical factors: the regulatory environment, the existing retail landscape, the mobile phone landscape, the competitive landscape, and the latent demand for the services.

The regulatory environment of a potential market would take into account the ease of setting up a mobile money business, the need and degree with which operators would need to partner with banks, foreign exchange laws, KYC and AML/CFT requirements, security and consumer protection laws. This is well documented by authors such as Porteous(2009), Merritt(2010) and Alampay(2010).

The retail landscape has a direct impact on the operator's ability to set up its cash-in / cash-out network. Making use of a government's existing network through post offices may be an option, but tapping into the formal and informal trading network is essential to ensure distribution. Heyer and Mas (2010) point out that in many instances, an existing airtime reseller network is used as the starting point for more successful m-money initiatives.

Mobile phone penetration is an obvious prerequisite. In countries where there is a poor mobile phone penetration, the benefits of transacting over a cellular phone is moot. Similarly, decent cellular network coverage is essential. The pricing models of the cellular operators is also important. Heyer and Mas (2010) point out that the success of the Smart Money initiative had a lot to do with the fact that the population used SMS all the time and at a very low cost. The jump to using text for an additional and beneficial service would not be a large one and would be obvious to potential customers. This point of view is strongly supported by Moyer (2010) who place high

mobile penetration as the number one requirement on the scale of metrics for success of mobile money payments.

When looking at scalability in the mobile markets, Heyer and Mas (2010) believe that mobile network operators which have a dominant market share are in a prime position to quickly grow their m-money offering. Issues like market penetration, brand loyalty and trust are often already addressed in instances of market dominance.

Issues around existing alternatives or competition are a real conundrum for operators. Heyer and Mas (2010) point out that demand-side indicators should be reviewed in context with what already exists in the market under review. If there are already m-money operators in the market, it may be difficult to convince consumers to switch. If the operator is first to market, however, they face the challenges of convincing consumers to try out an unknown service. In this instance, we can see the challenges highlighted by Mas and Radcliffe (2010) where they describe the chicken-and-egg scenario – ie, customers will only join an m-money initiative when their family and friends are on board.

The final factor Heyer and Mas (2010) examine is latent demand. When M-Pesa launched in 2008, Safaricom used the simple 'send money home' proposition. This was a key motivator for the large migrant workforce sending money from the urban areas back to their families in the rural areas.

Remittances have been a key driver in the uptake of mobile money services. Moyer (2010) refers to the importance of remittances and how they have been the catalyst for user uptake in the five successful mobile money projects which have reached scale.

2.5.1 What does success look like?

The case for remittances driving m-money uptake is highlighted perfectly by the Vodafone Qatar case study produced by implementation partner, Fundamo.

According to the case study (Fundamo 2012), more than 80 percent of people living in Qatar are migrant workers. Allowing this vast group of users to send money home to the Philippines, India, Nepal and Pakistan, where the majority come from, was a clear win for Vodafone.

Another key attribute for success, as referred to by Heyer and Mas (2010) and Moyer (2010), is the high mobile penetration in Qatar. In 2011, mobile penetration was estimated to be at 322.52 percent – more than three sim cards per person in the country.

The Qatar success for Vodafone did, however, step outside the framework outlined by Heyer and Mas (2010) in that Vodafone was competing against a national incumbent which had a dominant market share. The answer lay simply in delivering an effective and cost efficient international remittance offering with all the major home countries of the migrant workers.

This did not mean that there weren't challenges. The case study (Fundamo 2012) shows that issue around interoperability had to be addressed in order to integrate with the multiple payment clearing houses in multiple countries. Strict KYC requirements came down the regulatory line in 2010, in the middle of the technology build and Vodafone's instance that they had a single sign-on (SSO) added to the technical challenges. Multiple language options and a simple user interface were required to make the experience a simple and successful one for potential customers.

All this was exacerbated by the need for a rapid, country-wide rollout of services – a requirement fitting into all three characteristics of success outlined by Heyer and Mas (2010) volume, speed and coverage.

At the time of the launch, Vodafone Mobile Transfer claimed to be the first international mobile remittance service. Within eighteen months the service had signed up 38 percent of the Qatar cellular owners as customers, despite the continued competition of the long-time incumbent.

The most often referenced success story and the benchmark for what a sustainable m-money project looks like, has to be M-Pesa Kenya.

In their analysis of the M-Pesa Kenya initiative, Mas and Morawczynski (2009) point out that M-Pesa Kenya parent company, Safaricom's market dominance has played a key part in its success. It's market share dominance (around 77 percent in 2009) and its strong brand presence helped in the user uptake.

Safaricom went to market with a simple message which clearly defined the value proposition of the service. The marketing was aggressive and the Safaricom team focussed almost entirely on the remittance service as the 'killer app' for the service. Again, this fits into the success pre-requisites highlighted in latter writings by Heyer and Mas (2010) as well as Moyer (2010).

The service offering was simple to use and Mas and Morawczynski highlight the simple user interface, the fact that the applications sits on the mobile device and launches from the phone, as well as the step-by-step transactional process. This simplicity was necessary to allow even the most unsophisticated technology user to engage successfully with the product.

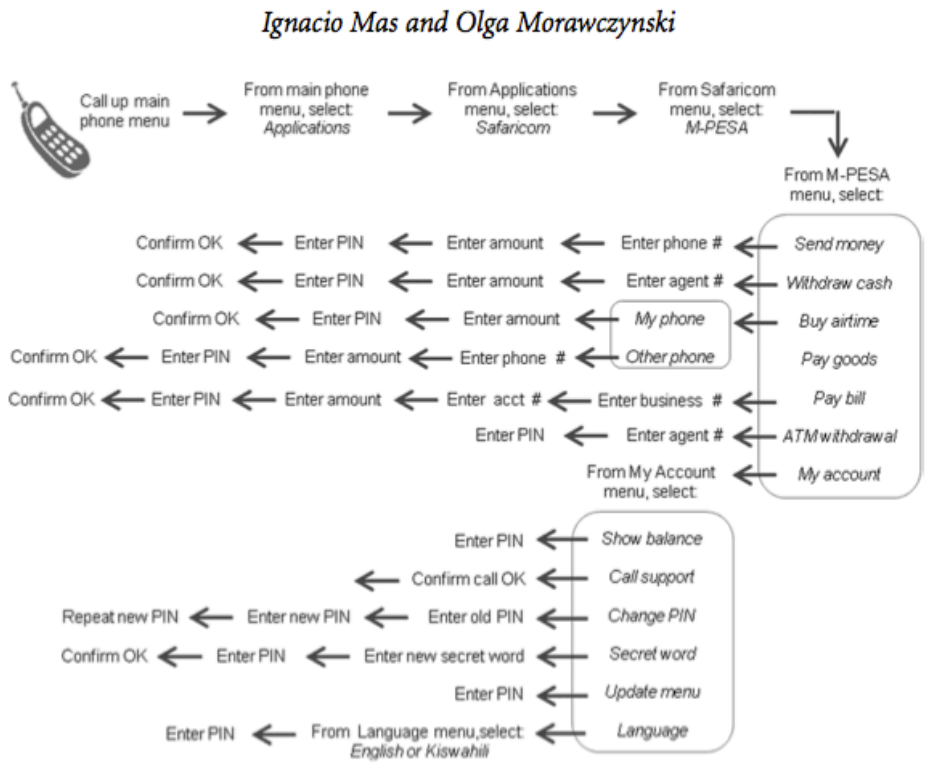


Figure 1. M-Pesa Kenya Menu structure to initiative a transaction

Agents make up a key part of the m-money ecosystem. Mas and Morawczynski (2009) maintain Safaricom exercised tight control of its agent network. The MNO signs exclusive agreements with its agents and demands prominent branding on their premises. Safaricom has ensured there is consistency in user experience no matter which agent is used across the country.

A simple sign-up process has been structured to encourage uptake, with the agent doing most of the paper work. KYC requirements are nothing more than an ID number which is verified by the agent against the original.

Agent incentive fees were fairly high at the beginning of the project to encourage quick adoption. This was done to overcome the 'chicken-and-egg' challenge as outlined by Mas and Radcliffe (2010).

M-Pesa Kenya kept fees low and there was no increase in fees for the first two years of operation – also in an effort to reach scale as quickly as possible.

Other incentive to encourage uptake was the fee structure between users and non-users. Customers pay almost triple the fee to send money to a non-customer, but the recipient can cash out the money at an agent for free. This put pressure on signed up customers to encourage their friends and family to join the service. It also ensured that the first-time experience for non-users was a good one.

The South African M-Pesa offering in contrast is not nearly as compelling. Ivo Vegter (Vegter, 2011) contends the financial offering laid out by the banks in South Africa, including M-Pesa South Africa, is simply not compelling. As of September 2011, MTN Banking was charging Transfers costs of R3, withdrawals cost of R5, and deposits cost customers 1 percent of the monies deposited with a minimum of R3. Similarly the costs of M-Pesa South Africa are not cheap, according to Vegter. Users are charged R2.45 for a transfer to another M-Pesa customer, and R10 for sending money to a non-customer. Vegter contends that the pricing models used are not geared to the target market, arguing that a more attractive option would be to use as sliding scale, and for lower transaction values to attract a similarly lower fee. (Vegter, 2011)

Mas and Morawczynski (2010) contend that it was Safaricom's control of the entire ecosystem, from start to finish, which allowed it to reach scale so quickly. When analysing the business model outlined by Mas and Morawczynski, it is clear that the challenges of the 'sub-scale trap' referred to by Mas and Radcliffe (2010) were overcome.

2.6 Social factors impacting uptake

According to the most recent reports from FinMark Trust (2011) the level of adult South Africans who were financially excluded actually increased from 2010 to 2011. In 2010, 23.4 percent of adults were financially excluded, compared with 27 percent in 2011. The survey suggests that South Africans are concerned the costs of banking and financial literacy and awareness of alternate products was lacking. The survey

went on to confirm that attitudes and perceptions towards financial institutions could be the barrier to user uptake.

Founder of Emerging Futures Lab, Niti Bhan, has written extensively about delivering services to the economically disenfranchised in the developing world. The Bottom of the Pyramid, as this demographic is know, have particular needs which should be taken into account when delivering new products. In a blog (Bhan, 2009), Bhan puts forward five key issues companies should take heed of when entering developing markets and trying to reach the Bottom of the Pyramid (BoP) markets.

Bhan argues that companies need to meet an unfulfilled need in the BoP markets if the potential customer is to part with their hard-earned cash. She puts forward a framework of five 'Ds' which define the needs of the user:

- The product should contribute to the '**development** 'of the economy and society if it is to fulfil a meaningful need.
- The product should be well '**designed'** and contextually relevant – and of course, affordable.
- The product should be easily accessible and therefore will rely on solid '**distribution'**
- There should be an existing '**demand'** for the product, or the ability to create the demand
- The poor are not looking for handouts, but opportunities and therefore the product should be mindful of the potential consumers' '**dignity'**.

Bhan's propositions in her blog (2009) are not dissimilar to the findings of the FinMark Trust Survey (2011). The report calls into light three interventions required to correct the lack of uptake of financial products in South Africa.

The need to build capacity through financial literacy campaigns. This can be aligned with Bhan's call for demand which could be created through the literacy campaigns, as well as her call for dignity as the poor seek to uplift themselves.

Providing financial products that meet specific needs. This can be aligned to Bhan's (2009) call for appropriate design of products.

The FinMark Trust survey finally calls for the removal of barriers to access of products, in particularly regulatory barriers. This would align with Bhan's (2009) call for development since appropriate regulations would ultimately have social and economic goals as their objective.

2.7 Conclusions and finding the research gap

In conclusion, as the body of literature around mobile money grows, a more thorough understanding of the drivers is emerging. However, despite the works being produced for, and read by, regulators and industry players, the continued lack of m-money projects reaching scale suggests that there is still much to learn.

Indeed Dermish, Kneiding, Leishman, and Mas, (2011), acknowledge in their mobile banking literature review, that there is a gap in literature focusing on the incentives which drive the various players in the mobile money ecosystem, and that while there is not likely to be a unique model that balances these interests from country to country, only by understanding their commercial interests and competitive advantages, will we be able to find a 'ubiquitous' retail option that delivers to scale.

Based on this research gap, the following section outlines the appropriate questions to be applied to better understand the problems of m-money services and to fulfil the requirements set out in the purpose statement.

CHAPTER 3 Research question and methodology

3.1 Research question

In response the literature review and the research problem, this study focuses on what it takes to increase the end-user uptake of mobile money services in the developing countries with particular focus on South Africa. It also questions the business models being used to roll out services and question if these are the most effective in order to reach the scale required to make them sustainable and, if not, how regulation can be better applied to encourage a robust and competitive ecosystem.

This is achieved by asking a key question:

What factors impact the delivery and uptake of mobile money services in developing countries, particularly in South Africa?

To fully answer this question, three sub-questions are addressed:

1. Are current regulations helping or hindering the uptake of mobile money services in developing countries and South Africa in particular?
2. Are the business models currently being used appropriate to deliver services at scale?
3. Which other factors impact the user uptake of mobile money services?

By answering these questions we have a better understanding if it is regulation which is impeding rollout and uptake of mobile money services, or, if it is the business models being used which are not geared properly to deliver. Through an analysis of the business models we can better understand the commercial interests and competitive advantages of the initiatives and thereby address the research gap highlighted in the literary review. This in turn may assist regulators develop an appropriate regulatory toolkit which answers Dias and McKee's (2010) call for a balance between regulation proportionality and efficacy.

3.2 Methodology applied in order to answer the research question

In this section I establish the steps required to fully answer the question outlined in research question and sub-questions. This will look at the body of work governing methodology to ensure the most appropriate method has been used. It will also include a detailed account of which candidates were chosen to be interviewed with reasoning as well as documenting the interview process. Finally, it will examine the challenges and limitations of the research instrument.

3.2.1 The argument for qualitative research

In order to appropriately investigate the complex issues of regulation and business models used to deliver mobile money services in developing countries I have made use of qualitative research. As Marshall and Rossman (1999, pg.22) point out, research can be likened to the detective work of Sherlock Holmes or investigative reporting. The authors suggest that through qualitative research, curious or anomalous behaviour or phenomenon are examined and attempts are made to explain these. In this instance, I attempt to explain why mobile money initiatives in developing countries have not reached scale. The process of investigation will also rely on supporting data, such as the figures pertaining to service uptake, the number of bank accounts and mobile phones per capita etcetera. This quantitative data will be used to add context and to support assumptions relating to the greater challenges outlined in the problem statement and the research question.

3.2.2 The argument for a case study

According to Yin (1984) case studies are used when trying to answer the "how" or "why" questions in research. In this instance, the research is investigating how regulation is impacting business models of mobile money, as well as why existing implementations are struggling to reach scale. The case study is also considered appropriate when an holistic and in-depth investigation is desirable (Tellis, 1997

unpaginated). In the same work, Tellis also argued that case studies are "multi-perspectival analyses".

In keeping with what Tellis suggests, and in order to fully understand why mobile money initiatives are not reaching scale, I have investigated a number of role players in the mobile money ecosystem. Some are in the business of delivering mobile money services and have a keen sense of the challenges facing the industry. Others are analysts who critically examine the mobile money industry and therefore have a broad, top-level view of the industry, but from the outside. Others are involved in the creation of the regulations which govern the industry and will be able to shed light on the challenges facing regulators. A cross section of interviewees will ensure a broad understanding of the challenges and opportunities are facilitate a more holistic view of the ecosystem and therefore a more comprehensive assessment.

3.2.3 Research design

I have conducted a case study of the mobile payment ecosystems in developing countries, paying particular attention to South Africa. I have compared the South African environment to that of the Kenyan and other developing countries' ecosystems. This gives granular insight into the various business models being used and how they have been set up to deliver within the current regulatory regime in South Africa.

As Yin (1984) and Tellis (1997) point out, a case study requires the collection and analysis of secondary data. This will give context to the case study and help formulate the questions when gathering information for the primary data.

Semi-structured qualitative interviews, using open-ended questions were used to gather primary information.

The case study is based on document analysis including financial results, annual reports, published news articles, existing case studies conducted by other researchers and other work made available by companies working in the field of m-payment.

With this as the baseline context, I conducted semi-structured open interviews with the following individuals:

Mark Taylor: After the success of its namesake in Kenya, many expected the M-Pesa South Africa to achieve a similar status. However the project has yet to reach scale MyBroadband (June 19, 2011). I secured an interview with Mark Taylor Executive Manager of Vodacom M-Pesa. This has allowed me access to the highest level of insight at the company. Taylor was able to speak freely about both the challenges faced up until now as well as the company's plans to address these issues going forward. He has first-hand knowledge of the regulatory challenges and business drivers and limitations.

Hannes Van Rensburg: Established in 1999, Fundamo has developed the back-end solutions which have been used in 50 deployments across 20 countries. The company has also been involved in the implementation with strategic partners and therefore staff at the company have key insights into the regulatory environments across the 20 developing countries.

I secured an interview with Fundamo founder and CEO, Hannes Van Rensburg. This allowed me question Van Rensburg on a range of issues including his experience with companies which have overcome regulatory and business challenges to implement successful projects. Van Rensburg has also seen how projects can fail and has an insight into the negative aspects facing mobile money as well as the insight of mistakes that have been made. Over a decade working in the mobile money industry qualifies Van Rensburg as an industry expert.

Gavin Krugel: During the interview with Van Resnburg, the Fundamo CEO suggested that recent appointee, Gavin Krugel would be in a position to give particular insight into the regulatory environment. Krugel is the Chief Customer Strategy Officer at Fundamo. Previously he worked as a Senior Director at the GSM Association. This experience has afforded Krugel a deep insight into the global mobile money market and allows him to comment on the South African market from this international context.

Dave Mitchell: The South African Reserve Bank is responsible for the oversight of key financial regulations affecting mobile money in South Africa. As the head of the National Payment System Department, Dave Mitchell has been personally involved in much of discussion and creation of the regulations pertaining to mobile money. Mitchell works closely with companies involved in mobile money industry, consulting with them and hearing their frustration, suggestions and concerns. Mitchell also works closely with the banks and therefore has an excellent perspective of all the industry players.

Ernst Janse Van Rensburg: Ernst Van Rensburg is the Forex Managing Director, Africa and Asia at the Sable Group. Ernst Van Rensburg has a good understanding of how money moves across borders, and the regulations which govern the flow. Remittances have been isolated as key driver for mobile money uptake and the impacting this service is of interest when assessing the mobile money space.

Rob Burrell: Ernst Van Rensburg suggested I interview Burrell based on his intimate knowledge of the mobile money space as it pertains to remittances. Burrell is Managing Director of Mukuru.com which specialises in moving money across borders over mobile devices and the Internet. Burrell has been involved in the company since inception six years ago. In that time he has worked with central banks and regulators across the globe to ensure the company meets the compliance requirements in each region. This gives Burrell insight into the regulatory challenges and how they have impacted businesses.

Gary Collins: Consulting to mobile network operators in the Sub Saharan region has given Collins excellent insight into the business models of the operators. He is has helped design mobile money strategies for MNOs and, based on his published works, I knew he had strong views on regulations and how they impact the uptake of mobile money services.

Ewan Sutherland: An independent telecommunications policy analyst and adjunct professor at the University of Witwatersrand, Sutherland is ideally positioned to comment on the mobile money ecosystem. He has published multiple works on the

mobile telephone industry and has access to a wide range of information from the entire telecommunications space. Sutherland has lectured at the LINK Centre and I was certain of his knowledge and interest in the field of research.

Steve Esselaar: The principle telecommunications consultant at Intelecom in New Zealand, Esselaar is a South African expat with a deep understanding of the South African policy and regulatory environment. Esselaar has conducted research into the mobile money space in developing world and authored and co-authored reports on the topic. Esselaar has lectured at the LINK Centre and I was aware of his interest and knowledge in the topic of research.

Will Hahn: A recognised international commentator on the global telecommunications sector, Hahn is Principle Research Analyst Communications Service Provider Business Strategy at global research house, Garter. Hahn has a particular interest in the South African telecommunications industry and has visited South African many times to engage with local companies, conduct country research and present his findings at symposia. Hahn has engaged with many companies in the mobile payments industry and has a deep understanding of the global challenges and opportunities in the space.

Arthur Goldstuck: Well known in the South African ICT industry, Goldstuck has written extensively on the telecommunications sector including the mobile money industry. His company, World Wide Worx conducts regular research on the mobile industry, including the strategies and performance of the mobile money initiatives. While Goldstuck kindly supplied some background material, his time allowed only a short response to the research question which was shared with him.

Niti Bhan: is the founder and principle at Emerging Futures Lab. Bhan focuses on emerging market strategy and has novel ideas on the importance of social issues in the uptake of mobile money, evidenced in her many blogs and presentations on the topic.

Ivo Vegter: Long time IT and news journalist, Vegter has written a number of articles on mobile money. He has extensively interviewed many executives in companies involved in the mobile money space and has presented papers on the topic at South

African technology conferences. Vegter is known for his strong views on the regulatory impact in South Africa as evidenced by his published works.

Organisations which were approached but were not able to participate in the research included the Centre for Financial Regulation and Inclusion (Cenfri) and MTN Mobile Money.

3.2.4 Research instrument

By using the qualitative research methodology and a case study in particular, I intend to understand underlying meaning and patterns in the environment I am studying as suggested by Babbie (2004) and by contrasting and comparing the various business models and regulatory environments, I fulfilled the qualitative research objectives as highlighted by Cresswell (2003).

3.2.4.1 Designing the interview questions

Since a semi-structured interview technique was chosen, using open-ended questions, there could not be a set list of questions for each interviewee. To ensure I had some level of comparable data, however, I constructed a base set of questions which would ensure some commonality and would assist in compiling data that would adequately answer the main and sub research questions. This is included in Appendix A.

I ensured I included appropriate questions, I asked three people who had a good understanding of the technology industry, but not necessarily the mobile money space, to read my baseline questions and then read my research question. I asked if the questions were understandable, would give enough data to answer the research question and if they thought there were any glaring omissions. Feedback from the pilots were taken into account, although very few changes were made.

3.2.4.2 Interview technique

The purpose of this research is to achieve a clear oversight of all aspects which may impact end-user uptake of mobile money services. In the purpose statement I outlined the necessity for an holistic oversight of the mobile money ecosystem. To achieve this I first selected appropriate interviewees, who had a good understanding of the mobile money ecosystem. When approaching them to secure an interview, I gave them context of what we would be talking about by sending them my research question, but not the baseline question (Appendix A).

During the interview I first established if the interviewee had any firm thoughts about the question and allowed the interview to move on from there. This open-ended and informal approach allowed me to explore additional angles which may not have been considered in the literature review. I made sure that additional questions based on the specific knowledge and experience of the interview were added. The aim of this method of questioning allowed for lateral thought on the part of the interviewee and better equipped me to fully explore themes and issues not included in the literature review.

Toward the end of the interview I referred back to the baseline questions to ensure I had covered as many of them as possible. I made it clear that interviewees did not have to answer questions which they felt ill-equipped to handle or which they felt they did not have an opinion on.

The informal, conversation-like interview technique put the interviewees at ease and allowed them to open up and share thoughts in a less rigid fashion.

Face-to-face interviews were recorded for accuracy. The recordings were referred back to when drafting the findings of the interviews. The interview with Sutherland, however, happened at short notice and no recording was made. To avoid inaccurately quoting Sutherland, no direct quotations were used in the write-up of the analysis.

All interviewees were informed that information they shared would be part of a public document and that if they felt any information should not be made public, they should alert the interviewer. In some instances where information was considered sensitive by the interviewer, the interviewer alerted the interviewee and again ensured that the interviewee was comfortable with sharing the information.

Interviewees were asked if they had supporting documentation or literature which would be appropriate for the research and if so, if they could share that secondary data.

Follow-up questions were sent to some of the interviewees where clarity was required.

The objective of the above research methodology was to add to the body of research around finding ways to accelerate mobile money uptake in particular and the creation of financial inclusion in general.

3.2.5 Challenges and limitations

The scope of the research is vast and necessitated a number of interviews. I believe it would have been beneficial to include at least one more mobile money player in South Africa. The opinions of the interviewees are subjective and can be tainted by their own personal experience – particularly interviewees who had negative experiences getting mobile money services operational or who were trying to justify their company's strategy. For this reason I was sure to include interviewees who were not directly involved in the mobile money space and whose opinions were not coloured by company strategy.

In the next chapter I examine the results of these interviews, referring to additional secondary data where necessary and to give context to the opinions of the interviewees.

CHAPTER 4 Research findings

In this chapter I detail the outcomes of the interviews conducted. Highlighting the issues as they pertain to the research question in Chapter four based on the specific areas of knowledge for each interviewee. This is augmented by relevant secondary data where appropriate.

4.1 Getting to grips with the real motivators

(Sutherland. Interview. 15 November 2011)

Ewan Sutherland is an independent telecommunication policy analyst and a visiting adjunct professor at the University of the Witwatersrand.

Sutherland was approached to give insight into the mobile space, based on his interest in the telecommunications and mobile phone penetration.

When looking at the South African environment and asking whether banks or mobile network operators are best placed to deliver mobile money services, Sutherland argues that banks are still best positioned to deliver products to the markets.

According to Sutherland one needs to question the core competencies of mobile network operators in South Africa. While Sutherland acknowledges the need for mobile network operators to find additional revenue streams, he questions whether MNOs understand the complexities and products of banking.

Sutherland says one should analyse the gap in the market and ask what product it is that people actually need. Then, one should ask if this gap fits into the competencies of the MNOs. In South Africa, Sutherland believes the banks can adequately fill the needs gap and this makes product offerings by the MNOs less compelling.

When asked why the M-Pesa Kenya product was such a runaway success, given that is owned and operated by a MNO, Sutherland defended his position, saying Vodafone

had a distinct advantage because of its distribution model and market dominance at the time of its launch.

Sutherland goes so far as to suggest that the reasons for M-Pesa's success was a culmination of social, economic and political factors which happened at the right time and in the right environment, that it was perhaps something as simple as a perfect storm of all the right ingredients and that this may not ever be replicable.

In contrast to the Kenyan situation at the launch of M-Pesa in the country, the South African banks are much sophisticated and Sutherland doubts whether the banks will allow the mobile operators to own the mobile money space, as it happened in Kenya.

Looking at the possible motivators to encourage user uptake, Sutherland believes that remittances will be the big driver – particularly cross border mobile remittances.

Finally, Sutherland suggests it is important to look at behavioural issues when analysing the reasons for user uptake of m-money services.

4.2 Getting money home still a big drawcard

(Ernst Van Rensburg. Interview. January 16 2012)

Ernst Janse van Rensburg is Forex Managing Director – Africa, Asia for Sable Group

Sable group started 20 years ago as an accounting firm. Remittances to countries from migrant workers in the UK is one of the services performed by the company.

Van Rensburg explains many of his clients are Antipodeans working in the UK but who still need to get money home to service bonds or pay off student loans.

The company remits to about 20 countries. For this reason Sable has to contend with compliance and licensing in each country and therefore has an excellent understanding of the complexities of cross border remittances.

The company does not work deal in cash-to-cash deals as van Rensburg says this plagued by money laundering, but rather focuses on integrating with existing networks and using their distribution models.

Sable white labels many of its services for operators providing mobile wallets, where it handles all the back-ends solutions.

Van Rensburg says it is important for governments to understand how money flows, and that governments tend to view mobile wallets in the same way as a bank.

"Mobile wallets are governed by banking licenses which makes it easier. Governments are interested in how money moves, from whom, to whom and not into what," (Ernst Van Rensburg. Interview. January 16 2012)

Van Rensburg says his company has not experienced much difficulty when dealing with the regulators and securing licenses and advice form various government has been fairly easy.

The company holds a Financial Services Board license as well as a Financial Services Authority license in South African and the UK respectively. Van Rensburg says the FSB has much stricter regulations including layers of cost, which he believes slows down the process and which impacts competitiveness in the region.

"The FSB regulations reduces the number of entrants to the markets and the competitors. Those that do compete are doing in a more costly way which makes it more expensive for the consumer and reduces the number offerings rolled out." (Ernst Van Rensburg. Interview. January 16 2012)

Despite his criticism, Van Rensburg believes regulations are there for a good reason.

He describes the remittances space in South Africa falling into three categories which may be considered to be obstructive:

Anti Money Laundering (AML) – Van Rensburg admits that the UK has suffered from external fraud and says he would like to see this regulation remain as it affords his company a measure of protection.

Secondly, Van Rensburg points to the regulations around which companies can give advice and, again, says this should remain as it ensures companies playing in the remittance space are reputable.

The third are regulation including Balance of Payments and thresholds, which Van Rensburg admits can be onerous.

South Africa, like other countries which have high volumes such as China and India, make use of these kinds of regulations. Balance of Payments and threshold regulations require documentation of all transactions between countries and allow countries to establish inflows and outflows of money and is used as economic indicator.

Van Rensburg points out that many other countries rather make use of consultants to keep track of money flowing in and out of their borders and says it is a cheaper way of determining what constitutes remittance and what is foreign direct investment.

Van Rensburg says the additional cost layer involved in reporting on Balance of Payments is passed on to consumers, through the added costs involved for companies who are required to comply to the administrative burden. Using consultants, however, would be passed on ubiquitously to the taxpayer as a cost of the Central Banks.

An additional cost for South African financial institutions is the administration around the Financial Intelligence Centre Act (FICA) which forms part of the country's KYC regulations.

"The regulations in South Africa actually makes the revenue pie smaller. The only reason I can see for the third type or regulation is to protect our currency. In fact, this actually limits the amount of currency coming in to South Africa. No one wants to bring in money when they are limited to getting it out again. This hurts the banks

again as the revenues over the networks are smaller." (Ernst Van Rensburg. Interview. January 16 2012)

Despite the tight regulations, Van Rensburg says this does not presuppose a standardised way of doing business and licensing and KYC requirements are interpreted differently.

> *Some banks are more flexible, are willing to walk into grey space – typically the newer banks. The big four (FNB, Standard, Nedbank and ABSA) are stricter. Investec, Sasfin, Mercantile bank etc, will work with the customer. They won't compromise on compliance, but they are actively seeking to make the pie bigger. The big four are risk adverse. I think this is because the legislation is not perfectly clear and I don't think it needs to be.* (Ernst Van Rensburg. Interview. January 16 2012)

Van Rensburg says he believes the KYC regulations should have a degree of flexibility, but wants overall integrity to be retained. According to Van Rensburg the CFT regulations are getting stricter and says the company has an ever-increasing list of political campaign managers and suspected terrorists which have to checked against as both the receiver and the sender.

Looking at the mobile money uptake in South Africa, Van Rensburg says there is a much bigger need for the services in Africa. The services are more additive in South Africa and there is not the same need for the services. He also says the lower need as well as the harsh regulations affects remittance volume which, in turn, impacts the profitability of the services.

Looking at the corporate view of the South African environment, Van Rensburg says the private sector views the regulations as bringing inefficiencies and says the Central Bank needs to ask itself it is really protecting the currency with the current laws.

Van Rensburg believes lower banks charges would attract more South African customers, that these fees are the biggest concerns for potential customers and that an interest-bearing product would have minimal appeal to the South African market.

4.3 Remittance continues to drive growth

(Burrell. Interview. 7 March 2012)

Rob Burrell is managing director of Mukuru.com, a service which focuses on international remittances. Mukuru.com is registered in the UK and remits to countries across the globe. Mukuru.com has strong ties with Zimbabwe and facilitates payments of migrant workers in South Africa wishing to send money home. It makes use of online and mobile functionality and has been operating for six years.

Burrell explains obtaining a license to remit was arduous and took the company eighteen months. This is in stark relief compared to the early days of operating in the UK when there were over 6000 licenses and, for 60 UK Pounds, a company could be up and running and handling money.

Burrell is supportive of the tighter regulations and believes this gives the remittance industry credibility and a better chance at sustainability. Indeed he points to South Africa's strict financial regulations as what saved the country during the sub-prime crisis and ensuing global meltdown.

Burrell believes the current tightening of regulations in the UK will have some impact on companies registered and operating in the country. A little over two months ago Mukuru.com was asked to ensure additional layers of banking compliance and Burrell says this now puts the company on similar compliance levels as the big players such as HSBC and others.

While this is onerous, Burrell says he remains open to the stricter regulations and will only be in a position to judge the value of the work to comply once the exercise is over and he can accurately judge its efficacy in hindsight.

Commenting on the success of M-Pesa Kenya, Burrell points to the excellent branding of the product as well as the trust that was so quickly established in the

product in such a short period of time. However, Burrell raises an important factor, which he believes is often overlooked when researchers analyse the success of M-Pesa Kenya.

A CGAP report (August 2009) references the reliance of Kenyan nationals on the M-Pesa service to transfer money and airtime from rural populations to urban recipients – a reversal in the normal flows of money. This was due to the banks and transport facilities shutting down during the post election riots in late 2007 and early 2008.

Burrell believes the importance of this one-time socio-political event had a significant impact on the uptake of the services, circumventing the usual long adoption curve of m-money services. Quite simply, Burrell believes the population had no choice but to trust the service, as it was the only means they could operate during the period.

Analysing the South African market, Burrell believes interoperability will have a significant impact on the uptake of m-money services. He also believes the trust threshold in South Africa has yet to be crossed, but says of all the services currently on offer in the country, the FNB service is the one to watch.

The use of Near Field Communications (NFC) may also hold a key to m-money services reaching scale in South Africa and Burrell says this will have a significant impact on the 'send side' of the m-money ecosystem.

4.4 Over regulation stifling innovation

(Collins. Interview. 6 March 2012)

Gary Collins is a strategy consultant focusing on telecommunications, media and technology. He has consulted to many sub Saharan mobile network operators, some of whom are looking to implement mobile money projects.

Collins believes the South African regulatory environment is lacking clear legislation on mobile money. Collins is also of the opinion the South African Reserve Bank is

naturally focused on protecting the interests of the big four banks (ABSA, FNB, Standard Bank and Nedbank) and the lack of clear legislation may be playing into their hands by keeping the regulatory space unclear and, thereby limiting competition in the mobile money space.

In his article, "How over regulation has stifled the pace of mobile money adoption in Africa" (Collins September 2011) Collins boldly states:

> *The overly-cautious, regulatory driven bank-led approach has all but killed off the possibility of producing an MPESA-like agile, cheap, customer-friendly mobile money application or solutions built around the requirements that sub-Saharan African customers so desperately need. This has had profound effects on the pace of mobile money adoption.* Collins (September 2011)

Collins believes the M-Pesa Kenya example highlights what is possible in a light-touch regulatory environment. The Central Banks of Kenya also worked with the creators of M-Pesa and took a somewhat relaxed view on the startup company, regulating after the fact. Something which never happened in South Africa according to Collins

"The Reserve Bank's role is not to be an innovator. It is a partner of the established banks," (Collins. Interview. 6 March 2012)

Collins acknowledges the importance of the mobile network operators in the m-money ecosystem, pointing to their lower cost of distribution. He believes, however, that the MNOs are happy to leave the business of mobile money to the banks through joint ventures saying the gains of the data travelling over the MNO networks is enough of a motivator for the network operators.
According to Collins, the catalyst for change in the South African space will only come through a government-led push to change legislation. National legislation on how South African companies deal with risk will determine which new players can enter the m-money space.

Collins is sceptical about the future of M-Pesa South Africa. He believes the simple money-in, money-out functionality and low fees in Kenyan model will not be replicable in South Africa due to the prohibitive legislation.

4.5 M-Pesa South Africa: playing for the endgame

(Taylor. Interview. 9 March 2012)

Mark Taylor is Executive Manager of Vodacom M-Pesa. The service launched late in 2010 and is currently looking at ways to increase the number of users after a difficult couple of years.

Taylor believes that banks in South Africa all interpret the regulations governing m-money differently. Both Circular 6 and Exemption 17, and how they are currently interpreted, are impeding the uptake of users. He says the Vodacom M-Pesa banking partner, Nedbank, has recently informed the regulator that it is interpreting both Circular 6 and Exemption 17 in ways which will allow it to lower the burden of KYC proof when signing up as well as the transaction limits such as the R1000.00 daily limits for clients who have opened their accounts using non face-to-face ways.

Taylor believes this has move has been a long time coming and expects it to have a positive impact on the user experience and the number of users signing up for the product.

Taylor expresses a level of frustration with both the banks and the regulations. Taylor says, M-Pesa is simply trying to increase the liquidity levels and the movement of money within the economy. It is not trying to perform complex asset finance and should therefore qualify for a much simpler regulatory regime.

Banks should also be encouraged to open up their infrastructure to allow greater interoperability. Taylor believes this will help m-money products become more attractive and meaningful to all South Africans. However, Taylor says there still exists a level of wariness of mobile money from the banks. Taylor also believes the

banks in South Africa don't interpret legislation in the spirit they are intended which is holding up change.

Despite this frustration, Taylor believes the regulator is trying to encourage a more enabling environment, saying the regulator has often met with M-Pesa South Africa and asked the company to explain what is needed and expressed a willingness to address hurdles to uptake.

According to Taylor, the one of the biggest challenges is getting money from the formal into the informal sectors. This has been evidenced by the slow start from M-Pesa South Africa, signing up only 140 000 users by June 2011. (Financial Sector Forum, June 2011)

The turnaround referred to by Vodacom CEO, Pieter Uys, in June 2011 (MyBroadband June 2011) has been much anticipated by the South African market.

Taylor confirmed exclusively in the interview that M-Pesa will be publically announcing a pre-paid Visa debit card linked to all M-Pesa wallets in July 2012. The product will be available to everyone who has a Vodacom cellphone, placing the pre-paid cards into hundreds of thousands of South African's hands.

This card would be competing with the product announced by Visa and MTN in 2011 which will allow users to transfer money from a Visa debit of credit card to any international Visa card via the MTN service. (Tech Central November 2011)

M-Pesa South Africa has also linked its products to a number of competitions with big local brands. A 2012 Coca Cola competition has made use of M-Pesa to payout the prize money. Over 60 000 prizes have required winners to register for the account to collect their winnings. Similar below the line competition marketing has been done with the likes of South African Breweries and with bread maker, Sasko.

M-Pesa South Africa will also hook into the national distribution channels so users can by pre-paid electricity, airtime and even lottery tickets.

Taylor believes the future of mobile-money will be linked to the big card companies. He references the South African social grant system which is now working as a card-based system. This 10.8 million-strong user base will certainly increase the awareness of the average user.

Taylor confirms M-Pesa will not be applying for its own banking license any time soon as for now, will continue working with the banks rather than alone.

Looking at the challenges facing South African mobile money products, Taylor admits education is still a big stumbling block and points out that marketing a fairly complex product has its drawbacks.

Distribution has also proved a challenge and Taylor bemoans the currently anti money laundering (AML) legislation which he says has made signing up spaza shop owners as agents particularly difficult. These are key factors in the distribution network, taking services into the more remote areas. Many of the shop owners are foreign nationals and current AML legislation requires agents have a South African identity document if they want to participate in the M-Pesa scheme.

Taylor believes this could be overcome with proper AML legislation. In a similar line of argument, Taylor says the Know Your Customer (KYC) regulations should be streamlined. The current regulatory overlap with RICA and FICA have made it very difficult for users to register for new services and Taylor suggest one agency overseeing the KYC regulations for financial and mobile registration.

4.6 South Africa – a complex regulatory environment

(Esselaar. Personal Correspondence. 11 March 2012)

Steve Esselaar is the principle telecommunications consultant at Intelecom. Esselaar specialises in policy and regulatory issues in developing countries.

Esselaar believes the mobile money regulatory environment in South Africa is a complex one. The country has a significant amount of existing financial infrastructure

in comparison to nearly all other African countries. Esselaar believes the Reserve Bank sees more overlap between the existing infrastructure and the potential of m-money. Esselaar points out the Mzanzi account shares some of the basic characteristics of m-money such lower banking fees, lower reporting requirements (AML & KYC).

"Mzanzi has been quite successful in adding increasing banking penetration. Given the existing financial infrastructure, I don't think that regulation has really held the South African m-money situation back" (Esselaar. Personal Correspondence 11 March 2012)

However, Esselaar acknowledges the lighter-touch regulatory environment in other African countries have facilitated the uptake of services.

"The lighter-touch regulatory environment was the single most important factor in Kenya. Unfortunately, the Kenyan example has generally not been followed. For example, in Nigeria, the mobile money regulations do not allow a mobile network operator (MNO) to be the lead in a mobile money operation."(Esselaar. Personal Correspondence 11 March 2012)

Esselaar explains that the public reason (i.e. those given in speeches or via interviews) was that the Nigerian government didn't want to "distract" MNOs from their core competency, particularly since, in Nigeria, quality of mobile service is poor.

> *This is clearly rubbish and the more likely reasons are that the Nigerian government is extremely concerned that foreign owned companies (such as MTN) might control a significant portion of the Nigerian economy if mobile money takes off. The problem with this approach is simply that the companies with the resources, agents etc. are the mobile operators (as well as the experience in other countries to run m-money).* (Esselaar. Personal Correspondence 11 March 2012)

Esselaar acknowledges that the business model also affects the uptake of mobile money services. He puts forward the notion that if a country has a low amount of

alternative financial infrastructure (ATMs, POS, bank branches) as is the case in Nigeria, then a simple business model (usually MNO led) that looks as person-to-person first, and then builds on top of that as the service takes off, is appropriate. He contends this the situation is far more complex the more existing financial infrastructure there is – such as the case in South Africa.

Issues such as marketing, user education, literacy and cultural mistrust of formal financial services can be critical. Esselaar points to the Nigerian market, where several banks had to be rescued by the state in 2008, leading to an investor run on these banks. In addition, in Nigeria, ATMs were very poorly distributed and sometimes incorrectly dispensed money. Esselaar holds that these factors, combined, led to a general level of distrust of banks. This would then open the doors for the mobile network operators, who conversely, enjoyed significant levels of trust and users were more comfortable using mobile money operations run by the MNOs and not banks. Esselaar holds that marketing can therefore be critical in order to overcome these issues of distrust.

Esselaar contends that South Africa will not reach the same levels of success as in Kenya.

The key difference was that there was no other alternative in Kenya – there was no other way to transfer money. Then, when MPESA arrived, suddenly there was this easy system to transfer money. SA has a much, much larger economy with much greater penetration of banking services. There just isn't the same level of demand in SA as compared to Kenya. This isn't to say that m-money may not take off – its just that m-money will take off alongside (as a complement) to existing financial services. (Esselaar. Personal Correspondence. March 11 2012)

However, Esselaar concedes that m-money will become increasingly important to South African banks in years to come. While this will not be the case for the mobile network operators which still rely heavily on the data revenues.

Finally, Esselaar predicts mobile money services will continue to grow in South Africa, capturing some of the market that Mzanzi can't access. However, he believes

the real catalyst for growth in South African will be the seamless interoperability between m-money and existing financial services.

4.7 Is mobile money in South African designed for failure?

(Vegter. Personal Correspondence. 14 February 2012)

Ivo Vegter is a South African journalist who has published and spoken extensively on mobile banking and mobile money. He has covered the area for over a decade and has interviewed both local and foreign players in the field of mobile commerce for as long.

Vegter believes the biggest hurdle to uptake of mobile money in South Africa is regulatory. This, says Vegter, includes foreign exchange controls, FICA and most importantly the Banking Act clause, which limits deposit taking to licensed banks. For this reason, Vegter claims it is hard for small, innovative and low-cost mobile money solutions to break into the market.

Vegter argues that the MNOs have been forced to partner with banks to offer mobile money services. In principle, Vegter believes an MNO with a prepaid offering takes deposits, and has all the infrastructure required to operate transactional accounts, whether denominated in Rands or minutes. The Banking Act, however, prohibits them from permitting cash withdrawals (technically, refunds he argues), because that would constitute deposit taking. He also believes the MNOs are deeply mindful not to offend the big banks and government.

They are terrified of offending the big banks, and offending the governments to which they are beholden for their telecoms licences. If you hear an MNO source say they'd love to be a bank, record it. Most will furiously deny any such ambition. (Vegter. Personal Correspondence. 11 February 2012)

Vegter contends banks themselves are also highly restricted by the bureaucratic overhead of regulations like FICA, which limits the scope of the market they could reach. They also do not have the infrastructure to reach the broader informal and poor markets. “There's a reason those markets are "unbanked": banks are simply not

capable of addressing them profitably." (Vegter. Personal Correspondence. 11 February 2012)

Vegter adds to his argument by pointing out that the products traditional banks do have are subject to fees and charges that are small in relation to medium incomes, but nominally very high in relation to low incomes. He says this is why many poor customers are unwilling to commit their money to the banks. They keep more of it simply by retaining the cash, and this is a major issue if your income is low. H argues that depositing R100 in a bank and getting R88 back strikes a poor person as "an insanely stupid swindle".

Vegter argues the fees attached to banking of any kind is a major hurdle for a large segment of the potential market.
He goes on to challenge the business motives of banks when it comes to banking the previously unbanked.

Traditional banks can't afford to care about the poor (to put it kindly), despite what they say. More likely, they don't care because they don't have to care. Exorbitant and sometimes extortionate fees are the price we pay for regulatory protection of a cartel of banking license holders. For those who don't earn much, that cartel offers nothing but dead losses. (Vegter. Personal Correspondence. February 11 2012)

Competitors, whether MNOs or independent services, try to address this problem by, for example, charging fees for services that save a customer a few hours and a taxi fare into town. Vegter gives the example that was given to him by Wizzit some years ago:

Instead of R20 airtime costing R20 plus a morning and a R10 taxi fare to town, users can save the R10 and several hours by using mobile money to buy the airtime.

Vegter believes mobile banking should offer the poor a way to receive money from anyone, including overseas (for example selling wares to tourists), a way to send money to anyone, including overseas (remittances), and a way to store money safely, and to do all of this without feeling that they're losing any of it when compared to the

cost of transacting with cash. Service providers should make money from actual cost savings, or from related services, advertising and other possibilities.

> *Arrangements to make transacting cheaper, rather than more expensive, will make mobile banking more appealing to rural and poor communities. However, the upstarts that, unlike banks, are able to offer this kind of service find themselves thwarted by needing a banking licence or a partner with a banking licence, in order to offer any meaningful money-related services. That instantly raises the barriers to entry sky-high, or lumps them with the very same bank charges that they were trying to avoid in the first place. That, I believe, is why we're not seeing people like Wizzit, Pocit or Ukash killing the big four in the broad mobile money market.* (Vegter. Personal Correspondence. 11 February 2012)

Vegter believes the Reserve Bank is not going to let go of the existing Banking Act deposit-taking clause. He argues that the official reason is to protect depositors, but calls this "absolute nonsense' and says this could easily be achieved in ways far less onerous than the Banking Act. Vegter says the real reason for the deposit-taking licences is that the South African Reserve Banks cannot countenance alternative currencies.

> *If airtime, or loyalty points, or air miles, or Mxit moolah, or US dollars, can act as a fully-fledge currency inside South Africa, the Reserve Bank loses control over monetary policy, which means it can no longer print money to achieve inflation, which means the government loses the power to invisibly tax the entire monetary base to fund deficit spending. Inflationary monetary policy of central banks is a whole different discussion, related to the nature and purpose of fiat currency, but it offers a great underlying macro-economic motive for why the regulatory environment is broken, and is likely to remain so.* (Vegter. Personal Correspondence 11 February 2012).

4.8 MNOs versus banks – a race to the bottom?

(Hahn. Personal Correspondence. 6 March 2012)

Will Hahn is Principle Research Analyst Communications Service Provider Business Strategy at research house, Gartner. Hahn has a thorough understanding of the South African market and has visited the country many times. Hahn has answered his questions based on the narrower field of mobile payments rather than the broader mobile money space.

Hahn sees cross-border remittances as being a key driver for South African players. He notes that South Africa's international controls are considered to be fairly strict by global standards. While Hahn believes South African regulations governing mobile payments to be no worse than many countries in the emerging world, he believes regulatory barriers should be lowered if the country is to realise the opportunity presenting itself in the field of remittances.

Hahn believes in many instances in the developing regions, the mobile operators used their size and market penetration to quickly rollout services. This left the less agile regulators to play catch-up with the new services.

User scepticism is something which Hahn acknowledges has to be overcome in order achieve success. He sees no clear indication that users are more in favour of bank-led or operator-led offerings, and says it is all about overcoming mistrust and positioning the user benefits.

> *"Who do users hate more than banks? Maybe the telco is the only competition! So this is a race to the bottom in some ways. I don't have a strong sense that Communication Service Provider-led m-payment services are well received as alternatives to bank-led services. It's more a question of extending service to folks who never had a bank account."* (Hahn. Personal Communication 14 February 2012).

While Hahn sees the prospects of mobile payments in South Africa as fairly good, he won't commit to which provider will be the one who strikes the tipping point. He

cautions, however, that many m-payment schemes in the developed world are not proving nearly as convenient or irresistible as their proponents claim. Hahn also confirms that he has not picked up a sense of urgency from either the banks or the mobile network operators in South Africa.

> *They're (the banks) in it, maybe for similar reasons that Vodacom is doing the SA version of M-Pesa. They are trying some things but I had no sense that it was full steam ahead, we know what we want…I think the MNOs are playing rather defensively, not wanting to be left out in case something takes off.* (Hahn. Personal Correspondence. 14 February 2012)

Finally, in his predictions of future performance of m-payments, Hahn believes the needs of the users will ultimately determine the uptake of services.

> *In cases of the true emerging market (where CSP agents outnumber bank branches and ATMS by 5-10x) m-payment services for things like remittance and micro-purchase will take hold and do well. South Africa is on the verge of true e-commerce as a real competitor to brick-and-mortar purchasing. M-payment should be an important part of this transition, and it is moving forward steadily if slowly.* (Hahn. Personal Correspondence 14 February 2012)

In contrast, South African analyst and founder of research house, World Wide Worx, Arthur Goldstuck, believes the cause for the ongoing lack of uptake lies in a lack of understanding what the consumer really needs, and how they can fulfil those needs.

> *I think the key issue is that mobile money services target the wrong need. The purveyors of mobile money argue from a self-interest point of view, and tend to blame external factors for lack of take-up, when it is in fact a structural issue, namely that the needs met by mobile money are already being met by other means.* (Goldstuck. Personal Correspondence. 2 March 2012)

4.9 Demand driven growth the key to sustainability

(Bhan. Personal Correspondence. 6 March 2012)

Niti Bhan is the founder and principle at Emerging Futures Lab. Bhan focuses on emerging markets strategy and has written extensively on business, design and engineering as they pertain to socio-economic development and innovation, particularly in the rapidly growing bottom of the pyramid and emerging markets.

Bhan supports the notion that mobile money initiatives which are launched into a low or light-touch regulatory environment have a greater chance of success. She references India's fairly low m-money uptake as a proof point of this.

> *Kenya's MPesa was launched first and the bankers regulated after the fact, whereas seeing this experience, many other countries put their bankers at work first to regulate. We have seen little evidence of the kind of uptake that Kenya has show in these (developing) countries but then again, there are myriads of reasons.* (Bhan. Personal Correspondence 6 March 2012)

Bhan argues that business models have yet to begin the product design from the end-user's point of view. She contends that by starting with a good understanding of the people who will use the service, there is a greater chance of success.

> *In my opinion, everyday user centered designers who work in innovation know nothing about what they will create or what will emerge, but they start by understanding people and their needs and operating environment and challenges and constraints and then attempt to develop solutions that fit those criteria. Lowers the barriers to adoption if you start by looking for what the end user needs rather than what will benefit the company or the banks, no?* (Bhan. Personal Correspondence 6 March 2012)

4.10 Skills are the real issue

(Van Rensburg. Interview. 18 January 2012)

Hannes Van Rensburg is the CEO of Fundamo, a Visa company. Van Rensburg founded the company in 1999 and has been responsible for some of the first mobile

money deployments in the world. Fundamo has rolled out a little under 100 mobile money projects across the world.

Van Rensburg admits that there have been some mobile money projects which have underperformed, but he qualifies this by making a personal distinction, saying a big percentage of deployments are not 'spectacularly' successful. He make the distinction between those that are 'spectacularly' successful and those which are 'marginally' successful.

When asked to define scale, Van Rensburg says he sees scale as 30 percent penetration of the target market, when 30 percent (or over) of subscribers regularly transact on the network

The frequency of transaction becomes an issue for the operators which are looking to avoid account dormancy. Van Rensburg points out that dormancy is not a problem if there is the network effect evident, and says that if there are 30 percent or more users in the target market then there are enough people for the user to can transact with. When asked, Van Rensburg agrees that this network affect aligns itself to the chicken-and-egg effect described by Mas and Radcliffe. (2010)

Van Rensburg conceded that light-touch regulation certainly makes for an easier rollout. However he believes the problems with regulations is over accentuated and believes there are very few countries where there are problems with over regulation. These are typically the bigger countries like India and Nigeria and Van Rensburg says one can understand why regulators are more careful.

> *If something goes wrong in a smaller country it's more easily contained than if it goes wrong in a big country like India. People are blaming regulations and it's not that in most countries, in most countries regulations are not the problem – not even close.* (Van Rensburg. Interview. 18 January 2012)

Van Rensburg holds that people involved in mobile money implementations are quick to blame regulations as a means to detract from bad implementation and abdicating any responsibility.

The real problem, according to Van Rensburg, is 'retail distribution 101'. Basic business issues need to be addressed on how to sell a product, how to market it, how to distribute and promote it. Quite simply, Van Rensburg believes people involved in mobile money projects which are not performing are not focusing on basic business issues.

> *I think a key problem is that it's not always the A-Team that gets to do the work. So, for instance I am running an MNO in country X, I have challenges, I have to distribute prepaid airtime, my network is under strain. Then they are told they have to do the mobile money product as well… they look for the most available person, not the best person to do the rollout. So if you don't have the A-Team working on the project you are going to have B-Team results. And in many instances that's the case.* (Van Rensburg. Interview. 18 January 2012)

Van Rensburg puts down the success stories to good business management. The success of M-Pesa Kenya can be attributed to now ex-CEO Michael Joseph. Similarly, the success of MTN in Uganda can be attributed to Richard Mwami, Head of Public Access & Mobile Money, MTN Uganda. "If you don't have a striker you are not going to score a goal." (Van Rensburg. Interview. 18 January 2012)

Given the position Van Rensburg takes on the challenges in reaching scale, it is not surprising that he doesn't believe it matters whether an implementation is bank-led or MNO-led.

> *It doesn't really matter. In South Africa the banks are successful. In West Africa the operators are. I think it's unnecessary argument. It should be about how am I taking this to market, do I have good management, do I have good controls in place? And am I doing it in the right way? That is the problem, there are not enough skills to roll out these projects.* (Van Rensburg.Interview. 18 January 2012)

Van Rensburg is emphatic that the biggest challenge facing the mobile money industry currently is the lack of appropriate training and tertiary courses and degrees.

> *How many people can say they are experts in mobile money and have done implementations before? Which tertiary institution can you go to for a degree in banking the unbanked? There are financial degrees, certainly and even banking degrees, but none in this specific field. There is not a serious industry that doesn't have a career path that will allow learners to enter into the career and perform.* (Van Rensburg. Interview. 18 January 2012)

Van Rensburg believes the solution lies with the universities to work with organisations like CGAP and companies such as his own. He says Fundamo would be eager to work with others to build and design industry appropriate degrees. While Van Rensburg acknowledges there are post-graduate degrees in the field, and that there is a wealth of research taking place around mobile money, he feels there is not enough of the research finding its way back into the university under-graduate classrooms. "The research should go back into producing people we can use in industry," he states.

When asked how this affects Fundamo, Van Rensburg jokingly says half of the industry skills sit in his offices in Cape Town. On a more serious note, Van Rensburg admits that the company actively seeks out skills, especially ones who have worked on successful implementations, including many who had been involved in M-Pesa Kenya.

Van Rensburg is reticent to comment negatively on the South African mobile money performance. He believes FNB has been successful in its mobile delivery, but hastens to add that South Africa is a complex model, both from a regulatory as well as technical side. However, he is quick to make the distinction between a constrained regulatory environment, preferring to call it 'sophisticated' and says it is not always easy to understand how to engage in the market. He references the many channels through which money can already move, including the large ATM network, supermarkets such as Shoprite Checkers and others.

Van Rensburg says because there is such a sophisticated market with such good existing infrastructure, the South African market is definitely not on the company's

radar. Last year Fundamo generated only two percent of its revenue from the South African market.

Turning to technology Van Rensburg is sceptical about newer technologies such as near field communications (NFC). He refers back to the invention of EMV (chip card technology).

Billions of rands were spent in the retail industry to upgrade from swipe card technology to pin-based technology over a four to five year period. None of those terminals are NFC ready. So somebody has to go to the retailers and tell them they have to upgrade again. There will be a big resistance to this and it will be twenty years before we have ubiquitous tap-your-phone payment solutions. By then, there will be another technology which will have surpassed this. (Van Rensburg. Interview. January 18 2012)

Having said this, Van Rensburg says South Africa will have some form of NFC but does not believe it will be a game changer, saying it is more hype than ubiquitous reality for the country.

When examining the efficacy of mobile money, Van Rensburg believes researchers need to make the difference clear on what m-money projects can do. He contends it is not so much about bringing the unbanked into the fold, (although this is important, and is happening) but rather about getting the under-banked making more regular use of the features offered by the services. The more transactions are carried out, the more services will be offered, including the governmental prerogative of saving.

Pricing awareness, lack of education on how to actually use the services etc. are all holding success back – all of this can be solved if the services are managed properly. Van Rensburg repeats his assertion that regulations are being unfairly blamed by managers of m-money operations for the lack of success – often in an effort to cover up their own inability to lead the projects.

4.11 Regulating for financial inclusion

(Krugel. Interview. 19 March 2012)

Gavin Krugel is Chief Customer Strategy Officer at Fundamo, a Visa Company. Krugel has also worked as a Senior Director at the GSM Association. Krugel has been recognised as an expert mobile financial services mobile money and financial inclusion.

Krugel believes that regulations governing mobile money are beginning to show signs of maturity. He says when mobile money first hit the markets, the regulators rushed to protect the financial franchise but says as the market, and the regulators, began to understand the need for financial inclusion. This, together with the dawning realisation of the possible profits to be made from the bottom of the pyramid, led a growing relaxation of regulations. These included the ability for agents to perform basic cash-in/ cash-out functionality and the lowering of the KYC restrictions.

> *In hindsight the initial over regulation may have been a necessary evil. If we look at the environment today we can see a move toward open regulation and this enables non-banks to enter into the market.* (Krugel. Interview.19 March 2012)

Krugel admits there are still areas affected by 'odd' regulations, pointing to Indonesia, which he says is still behind the regulatory curve.

When it comes to South Africa, however, Krugel believes the stiff regulatory environment has afforded the banks ten years to assess the environment and make their move.

Krugel suggests this has been achieved, in part, through the self-regulating payments body, the Payment Association of South Africa (PASA).

Initiated in 1994 by a coalition of banks and the South African Reserve Bank, PASA was formed to formulate the long-term strategy and modernisation of the South African National Payments System (NPS). It gained formal status in 1998 through the NPS Act and is constituted as a self-regulating management body for the national payment system.

The PASA constitution (PASA 2010) calls for members of the organisation to:

> *protect themselves, other Members and PASA, against risks emanating from their participation in the NPS, as well as from other participants or stakeholders in and/or users of the NPS; and*
> *assist PASA in enabling the Reserve Bank to adequately oversee the affairs of PASA and its Members in the discharge of the Reserve Bank's responsibilities regarding the monitoring, regulation and supervision of payment, clearing and settlement systems;* (PASA 2010, pg 19)

Krugel points out the membership requirements of PASA is restricted to institutions which are allowed to link into the NPS – i.e. those entities which hold banking licences.

With this in mind Kugel questions why the members of PASA would allow non-banks into the membership of 24 licence holders, saying it would not be in their interest. Krugel goes on to refer to this dominance of banks as akin to an oligopoly.

The era of strict regulations has effectively given South African banks ten years to study the bottom of the pyramid market. Krugel says the banks have not made the most of that time though and in the last ten years, the banks have become less inclined to deliver services to a banking-saturated market.

While Krugel questions if South African banks have actually made good on financial inclusion, he suggests though, that the banks have developed a network which the banks would argue delivers on financial inclusion. This would be born out by the high percentage of banked people in South Africa.

This small remaining group of the unbanked are not attracting the attention of the banks. From a purely profit-based point of view, Krugel believes the poor, unbanked population in South Africa do not make for a compelling market. Looking at the acquisition costs of each customer (in the order of a couple of hundred rands) Krugel believes innovating for the person who earns between R20 to R35 per day hardly makes for a compelling business case.

Looking at the innovation in the South African banking space, Krugel says the South African banks have launched a host of new products in the last ten years, but this does not constitute true financial inclusion.

He contends banks are innovating on price and convenience. What draws a customer is the new application for mobile banking. What sells consumers on the product is the marginally attractive price. However, Krugel says this is not really a new innovation, it's just market segmentation and marketing.

Finally, Krugel analyses the mobile money space and says the real inhibitors to mobile money schemes reaching scale is not the lack of demand. Rather, he believes it is the lack of understanding by companies launching the services that what they are really launching is a bank – with all the complications, complexities and ramifications of this challenge.

> *I have visited nine mobile money initiatives in the last four months and I have been flabbergasted at who is running them. It is not bankers, or even experienced business people. It is middle management IT guys. Given that between six and fifteen percent of an MNO revenue could be derived from a successful mobile money offering, this makes no sense. One company was launching a national product with three fulltime employees to oversee this. The real reason mobile money schemes are not reaching scale is the lack of allocation of appropriate resources to build and lead the business.* (Krugel. Interview. 19 March 2012)

4.12 Interoperability the key for South Africa

(Mitchell. Interview. 22 March 2012)

Dave Mitchell, Head: National Payment System Department at the South African Reserve Bank works closely with the South African financial institutions and companies involved in the mobile money ecosystem. He has been instrumental in the development of the Reserve Bank payment strategy including the Vision 2015 positioning paper (South African Reserve Bank September 2011)

Mitchell explains that South Africa now has 14 e-money products, including e-wallets, making the regulation of the environment more complex, and important. Mitchell holds that his department has an open mind when it comes to the regulation of mobile money, actively searching for innovative ways to address the complexities of the South African situation.

Added to this Mitchell points out that there are 23 banks involved in the national payment system as well as the four mobile network operators, making the mobile money environment a complex one. The Reserve Banks has adopted a consultative approach to formulating policy and meets regularly with all the players involved as well as 78 non-bank companies which supply services such as IT support and third parties involved in the payments space.

Mitchell explains that many companies visit the Reserve Bank, wishing to discuss their new products. However, he says many of these companies are technology driven and want to control the entire process, including the legislated issues surrounding the e-float. Mitchell points out that the daily settlement amounts can equate to up to 20 percent of the value of the float and see profit in this.

The Reserve Bank and Mitchell's team have been working closely with the Financial Service Authority (FSA). He explains that three-tier licencing arrangement the FSA use has been closely assessed.

This system allows for three distinct tiers. The first is the most restrictive with strict compliance and is open only to those with a full banking licence, with no limit to the liabilities. The second allows non-banks a limited licence with e-money liabilities not exceeding 25 million pounds. The third, is considered a closed loop environment and has a reporting requirements of six months and e-money liabilities of 5 million pounds.

While Mitchell admits this system has its attractions, the Reserve Bank was limited by the Registrar of Banks and the Banks Act which dictates which institutions can take deposits.

"I'd say we are open to change and innovation, but we can only do it through the existing regulation," explains Mitchell. (Mitchell.Interview. 22 March 2012)

Comparing the South African mobile money regulatory environment to that in Kenya, Mitchell explains that the Kenyan regulators were not aware of the influence in and importance of the M-Pesa product when it was launched, signing a letter of no-objection to allow the scheme to operate under existing regulations. However, Mitchell holds that the scheme "developed so fast they lost control, and are now playing catch-up." (Mitchell. Interview. 22 March 2012)

The Reserve Bank takes part in many international discussion fora around regulating mobile money and Mitchell says a popular view amongst international regulators is to keep the message transmission system separate from the banking system in order to protect the consumer.

Mitchell and his team have identified a key area for development in future which he believes will create an enabling environment for mobile-money rollout. Interoperability is high on the Bank's agenda and Mitchell says he is pushing for improvements. This would facilitate consumers being able to have an m-money account and being able to send money to a recipient no matter what service provider they are registered with. Similarly, users would be able to withdraw or cash-out at vendors or through ATM machines irrespective of the service provider.

"South Africa has one of the most sophisticated payment systems in the world. Currently we have fourteen e-money products and none of them talk to each other." (Mitchell.Interview. March 22 2012)

When asked what it would take to rectify the problem, Mitchell says the Payment Association of South Africa (PASA) would need to investigate technical standards and develop an appropriate payment clearing house.

Mitchell says the mobile money space is in an expansion phase, but cautions that education remains key to promoting uptake. He says there is no denying that cash is still the currency of choice worldwide and this is what is known and trusted.

Mitchell is aware of the criticism levelled at regulators, but says he believes this to be misguided.

"Operators will continue to blame us. They want to be banks, but must realise they are message carriers, not banks." (Mitchell. Interview. 22 March 2012)

When asked for clarity around the relationship between PASA and the Reserve Bank, Mitchell is emphatic that, while the Reserve Bank is guided and assisted by PASA, ultimate power still resides with the Reserve Bank.

> *"If they (PASA) draw up rules they must be done with our approval and sign-off. They can't go along and block people from the national payment system. If we want to let a non-bank into the payment system we can do that. PASA can regulate the behaviour of the members of the NPS, PASA does not regulate the payment system. We are ultimately in control."* (Mitchell. Interview. 22 March 2012)

When asked how the Reserve Banks sees proportionate regulation, Mitchell explains that the Bank will watch for developments assess the situation, waiting to see the uptake of a product and the needs of the market, and then act accordingly.

From this research we can see that there are divergent views on which factors have the biggest impact on the rollout and uptake of mobile services. In the following chapter we will unpack the findings and analyse these based on the main themes laid out in the literature review in order to position the research findings into the greater body of literature and give context to the research.

CHAPTER 5 Research analysis

In this chapter I analyse the findings of the research conducted and apply those findings back to the themes laid out in the literature review. By searching for commonalities and differences of opinion, I will have a greater chance of exposing the issues which will answer the three supporting questions: Are current regulations helping or hindering the uptake of mobile money services in developing countries and South Africa in particular; are the business models currently being used appropriate to deliver services at scale; and which other factors impact the user uptake of mobile money services? This will allow me to fully explore the main research question in the conclusion.

5.1 Scale – different metrics but vital none the less

If one investigates the reasons why mobile money projects are not reaching scale as put forward by Boer and de Boer (2010) one first has to analyse what this term means and how it is applied to performance analysis. This presents a challenge as there is no clear industry standard. It is clear that when analysing the performance of mobile money projects across the globe, success can mean different things to different people. Mas and Radcliffe (2010) believe scale is met when there are at least 10 times the number of cash-in / cash-out outlets than there are traditional bank branches, and that each of these outlets should be generating at least 50 transactions per day.

Van Rensburg, however sees scale as having at least 30 percent of the target market signed up for the services and actively making use of at least some of its functionality. (Van Rensburg. Interview. 8 January 2012)

Hahn, on the other hand, indirectly speaks of scale when he predicts the future of uptake and says

In cases of the true emerging market (where CSP agents outnumber bank branches and ATMS by 5-10x) m-payment services for things like remittance and micro-

purchase will take hold and do well (Hahn. Personal Correspondence. 14 February 2012)

If one is simply assessing the number of users, then the Gartner findings that only five projects have over a million users (Moyer 2010) and that through to the end of 2012, 70 percent of projects will attain not be in a position to report one million users, then the sustainability of these projects has to be questioned.

Even if one is more forgiving in one's assessment, like Van Rensburg when he refers to 'spectacularly' successful and 'marginally' successful projects, (Van Rensburg. Interview.18 January 2012) it is clear that having more consistency in how one measures success is necessary to conduct comparative research.

5.2 Regulatory challenges

While each interviewee had different opinions about which challenges had the biggest impact on mobile money rollout and uptake, all of them admit that regulatory challenges exist.

5.2.1 Challenges to getting started

Understanding the regulatory environment in a new market is the first challenge facing a mobile money initiative. Each region has different levels of regulatory requirements. When Vodafone and Safaricom began their initiative in Kenya in 2007, they entered a market which was devoid of particular regulations pertaining to mobile money projects. Collins goes so far as to refer to it as a regulatory vacuum (Collins September 2011)

In contrast, the regulatory environment in South Africa was a much more complex and rigid one at the advent of mobile money as pointed out by Esselaar (Esselaar. Personal Correspondence 11 March 2012)

The very fist order of business would be for an organisation to establish if they could act with or without a formal banking licence. This may be simpler for a bank-led

model, as it would presumably already be in possession of a licence to link into the national payments system. Even if it were a new banking entrant it would be a lot easier for it to meet local requirements for banking operations, having gone through similar regulatory compliance in a different region.

For a mobile network operator, or any other non-bank, however, it may be a very different experience.

In South Africa, the process for starting a mobile money scheme would be further hampered by the strict requirements that only organisations in possession of a banking licence can link into the National Payment System. The non-bank would need to partner with a bank and this, as one can imagine, will require protracted negotiations and time wasted in the legal process finalising the commercial terms of engagement, as commented on by Burrell. (Burrell. Interview. 7 March 2012)

Additional layers of regulation such as the tight exchange controls can further impede companies, such as experienced by Burrell when Mukuru.com sought to perform remittances from South Africa into other territories. (Burrell. Interview. 7 March 2012)

National policy may also hamper mobile money startups. Countries may be reluctant to allow foreign companies into their banking system as suggested by Esselaar in the case of Nigeria. (Personal Correspondence. 11 March 2012) Or, countries may be naturally wary of mobile money initiatives as suggested by Taylor (Interview 9 March 2012) and may even be reluctant to relinquish control over the currency as suggested by Vegter. (Personal Correspondence 11 February 2012) The CGAP report (May 2010) affirms the access to the National Payment System is restrictive and that the matter has not escaped the notice of the Competition Commission (Competition Commission 2008), although significant changes have yet to be seen.

While the South African Reserve Bank has expressed the notion of keeping an open mind and investigating new regulatory measures, (Mitchell. Personal Correspondence 22 March 2012) this has yet to bear fruit and the current stringent requirements of which entity is able to take deposits and operate an e-float remain firmly in place.

5.2.2 Ensuring compliance brings new challenges

Once the paperwork is completed, companies will have to deal with the problems of ensuring compliance to the many regulations which have been put in place to mitigate risk.

Know Your Customer (KYC), Anti money laundering / combating the finance of terrorism (AML/CFT) all have to be adhered to.

Understanding who your customer is and being able to verify this comes at a cost - both in time and money. Setting up systems and databases to record details of ID documents takes time and costs money. These requirements have been challenged from time to time, and in South Africa, the frustrations of having to carry the burden of the KYC and AML/CFT requirements can be seen by M-Pesa banker, Nedbank alerting the regulator to the fact that they would be 'interpreting' Exemption 17 and Circular 6 differently as explained by Taylor. (Interview. January 16 2012)

The costs associated with the KYC regulation is echoed by Ernst Van Rensburg when he speaks about the duplication of RICA and FICA. Balance of Payment and threshold requirements in South Africa adding further layers of costs as mentioned by Ernst Van Rensburg. (Interview. 16 January 2012)

The AML regulations brings additional time and costs associated with them. The frustration felt by Taylor in how the AML regulations have impeded the rollout of additional M-Pesa South Africa cash-in / cash-out agencies to owners who are foreign nationals must be significant for a company which is fighting to increase its distribution network. The environment in Kenya was vastly different where Safaricom was able to quickly and aggressively sign up its existing network of airtime resellers to become M-Pesa agents, including both local and foreign nationals, if they had reasonable documentation such as valid passport numbers. Taylor's (interview 9 March 2012) sentiment is validated by the CGAP report which states:

> *Vodacom clearly feels the process of understanding what constitutes a permissible approach to the use of agents has slowed down the launch of M-PESA considerably. Discussions with some banks revealed that, apart from the uncertainty around the broad regulatory space for agents, the accreditation requirements being set for agents under the Financial Advisory and Intermediary Services (FAIS) Act also pose a problem.* CGAP (May 2010 pg10)

The frustration felt by Ernst Van Rensburg and Taylor is not isolated as can be seen by the references to this in the CGAP report (May 2011) where reports of similar frustrations from multiple service providers have been mentioned.

A second layer of regulatory complexity is added when one looks at regulating to protect the consumer. Regulating to protect the consumer could also incorporate many of the risk-based regulations such as the AML/CFT. A regulator has a duty to protect the consumer against the perils of misuse of the systems. If an m-money scheme is being used by money launderers or terrorists, it runs the risk of being shut down and compromising the innocent customers' money.

Additional consumer regulations have been added to the risk-based regulations and while, by in large, they are there to ensure integrity in the service offering, and have been welcomed by Ernst Van Rensburg and Burrell, they also come at administrative price.

Quite simply, a consumer wants a service that answers a need they have – to store and transfer money securely and simply at a compelling price.

A regulator, on the other hand, needs to protect the consumer against companies acting irresponsibly, and thereby putting the money of the consumer at risk.

Mobile Money schemes are required to back their services with appropriate security. In South Africa this would include the fact that only prudentially governed banks can take a deposit and how the Reserve Bank has dealt with conditions on e-floats.

The additional compliance does two things: it acts as a deterrent to who enters the market, as pointed out by Vegter (Personal Correspondence 11 February 2012) and adds an additional level of cost as pointed out by Collins. (Interview. 6 March 2012) This compounds matters since the fewer players there are in the market, the lower the level of competition, which also has cost implications.

The proportionate regulatory challenge when regulating for the consumer is summed up by Dias and Mckee (2010) who warn of the balance that needs to be struck when looking to protect the consumer.

5.2.3 Overlapping regulations adding to the administrative burden

M-Pesa South Africa head, Taylor (Interview 9 March 2012) says the regulatory challenge is further frustrated by the duplication in KYC requirements between the banks and the mobile network operators. He has called for one central database administering the details of users which can be updated by either a mobile network operator or banks as and when the customers' details change. This is most clearly echoed by Alampay (2010) who warns that the lack of data base interoperability may lead to co-ordinated regulation failure, first pointed out by Porteous (2009). There is no doubt however, that the current system is particularly burdensome for consumers who are required to keep their banks up to date with their latest details as well as their mobile service provider. The prospect of going through the entire process again when opening a mobile money account is less than appealing.

It could also be argued that the roles of Reserve Bank and the Payment Association of South Africa (PASA) could be assigned to theme of regulatory overlap. While PASA is a self-regulating body and the Reserve Bank a recognised regulator, it does not detract from the fact that both bodies are working on rules to govern the payment system.

5.2.4 Regulating for competition or the lack thereof

Ensuring mobile money competition is a challenge for regulators. They have to balance the need to protect the consumer, protect the integrity of the greater financial ecosystem, all the while trying to create an enabling environment for new entrants to enter the market.

The growing theme when looking at regulations for competition is one of interoperability. This is borne out by the number of mobile money commentators who referenced the issue.

Burrell believes interoperability will have a significant impact on the uptake of mobile money services. (Interview. 7 March 2012) Taylor has unsurprisingly called for banks to open up their systems to allow for greater interoperability. Interoperability would solve a number of M-Pesa's distribution challenges and it could be argued that this was the reason for the soon-to-be-announced deal with VISA Taylor refers to. The VISA channels would effectively allow M-Pesa customers onto multiple platforms through the universal BIN number which VISA and the other global card companies make use of. (Interview 9 March 2012)

The technical challenges of interoperability are fairly high as can be seen in the Vodafone Qatar case study, particularly when it comes to cross-border remittances and the need for m-money platforms to connect to multiple payment databases in multiple regions, all governed by different regulatory requirements.

Indeed, Dolan (2010), and Lymen et al (2008) place the need to balance competition and interoperability high on the future research agenda.

Given the strong sentiment that interoperability is a major factor to be addressed when attempting to create an enabling regulatory environment, it is not surprising that the South African Reserve Bank has placed interoperability so high on its strategy agenda, proving that in this area there is consensus. Encouraging the banks to open up their

infrastructure to allow all players to interconnect however, may prove to be a challenge. The willingness of the banks to allow competition is still much debated.

When analysing how to regulate for competition one has to ask the age old question: *Quis custodiet ipsos custodies?* Who guards the guards themselves?

Vegter's bold assertion that it is in the South African banks' interest to maintain the stranglehold on which company is admitted to national payment system may be viewed as slightly conspiratorial when he says:

> *Traditional banks can't afford to care about the poor (to put it kindly), despite what they say. More likely, they don't care because they don't have to care. Exorbitant and sometimes extortionate fees are the price we pay for regulatory protection of a cartel of banking license holders. For those who don't earn much, that cartel offers nothing but dead losses.* (Vegter. Personal Communication. February 11 2012)

However, he is not alone in his sceptical view of the power the major banks (and those who have banking licences) have over the mobile money environment. Krugel also questions this when he asks why the members of PASA would encourage non-banks to enter the fold of national payment system self regulators and suggests the system exhibits traits of an oligopoly. (Interview 19 March 2012)

The very clear and unambiguous rejection of any regulatory uncertainty from the Reserve Bank aims to correct these perceptions when Mitchell states:

> *"If they (PASA) draw up rules they must be done with our approval and sign-off. They can't go along and block people from the national payment system. If we want to let a non-bank into the payment system we can do that. PASA can regulate the behaviour of the members of the NPS, PASA does not regulate the payment system. We are ultimately in control."* (Mitchell. Personal Correspondence 22 March 2012)

This is again countered by the more moderate, but still critical, view of Collins who points out the Reserve Bank is geared to act on behalf of the banks rather than creating an environment to allow new entrants into the market.

"The Reserve Bank's role is not to be an innovator. It is a partner of the established banks," (Collins. Personal Correspondence 6 March 2012)

5.2.5 Summing up the regulatory environment

Part of the purpose of the research was to establish the effects regulations have had on the uptake of mobile money services. While all of the interviewees agreed that the regulatory regime in a region had an impact on mobile money uptake, the degree of impact was given different levels of importance by individuals.

Van Rensburg dismisses the regulatory regime has having a major effect on the uptake.

> *If something goes wrong in a smaller country it's more easily contained than if it goes wrong in a big country like India. People are blaming regulations and it's not that in most countries, in most countries regulations are not the problem – not even close.* (Van Rensburg. Personal Correspondence. 18 January 2012)

Esselaar acknowledges the complexity of the regulatory environment in South Africa, but says it has not significantly hindered the delivery and uptake of mobile money. (Personal Correspondence. 11 March 2012)

Ernst Van Rensburg and Burrell both acknowledge the need for strict regulations, with Burrell welcoming the stricter regulations in South Africa. Ernst Van Rensburg believes regulations are there for a reason, but cautions that South African regulations to protect the currency have made the revenue pie smaller.

Others such as Collins and Vegter believe the regulatory environment is the main reason why mobile services are not delivering.

> *The overly-cautious, regulatory driven bank-led approach has all but killed off the possibility of producing an MPESA-like agile, cheap, customer-friendly mobile money application or solutions built around the requirements that sub-Saharan African customers so desperately need. This has had profound effects on the pace of mobile money adoption.* Collins (September 2011)

Taylor (Interview. 9 March 2012) points out that it's not the level of regulation that is the problem, it is the lack of clarity of the regulations and this and calls for a simpler regulatory regime. Krugel is also of the opinion that the lack of clarity around South African regulations adds a layer of complexity to the regulatory environment. (Interview. 19 March 2012)

The findings suggest there is no consensus as to the effect regulations have on the uptake of mobile money services. While many are in favour of simpler and clearer regulations, some simply dismiss the effect of regulations, believing the issues lie elsewhere.

5.3 How have the business models affected delivery and uptake of mobile money?

There has been much debate about whether a bank-led or an MNO-led model is more likely to reach scale. The spectacular success of the MNO-led model in the case of Kenya's M-Pesa would seem to point to the fact that this is the model of choice.

However, this simplistic notion is countered by Sutherland who argues that it is not within the core competencies of the mobile operators to deliver and believes the banks in South Africa can adequately fill the needs gap.

Collins supports Sutherland's notion saying the MNOs are happy to leave the business of banking to the banks and are content with the revenues derived from the data traveling over the network. (Personal Correspondence. 15 November 2011)

Esselaar, meanwhile, says in instances where there is a low level of existing banking infrastructure, the simpler, MNO-led model is the best suited to deliver. (Personal Correspondence 11 March 2012)

Hahn, however, believes the consumer is not particularly interested in who delivers the services and sees no clear indication of which model is preferable. (Hahn. Personal Correspondence 2012)

Similarly, Van Rensburg is of the opinion that the question of who leads the initiative is of little import. Indeed, Fundamo has been involved in rollouts using every conceivable business model and Van Rensburg dismisses the importance of the model by saying:

> *It doesn't really matter. In South Africa the banks are successful. In West Africa the operators are. I think it's unnecessary argument. It should be about how am I taking this to market, do I have good management, do I have good controls in place? And am I doing it in the right way? That is the problem, there are not enough skills to roll out these projects.* (Van Rensburg. Personal Correspondence. 18 January 2012)

5.3.1 Which business issues are affecting uptake?

Heyer and Mas (2010) put forward a framework to assess business models in the mobile money environment. According to the authors, the key characteristics of success are 'volume, speed and coverage'. The research analysis that follows is applied to this framework.

Volume

A common theme from the interviews has been the importance of remittances to achieving volume.

Both Ernst Van Rensburg and Burrell (Interview 7 March 2012) are clear on the importance of remittance in developing volume for services. Indeed, both their businesses are built on the premise. Ernst Van Rensburg holds that the regulations in South Africa are hindering the uptake of remittances and hence the volume (and profitability) of businesses in the mobile money space is impacted. (Interview January 16 2012)

Hahn pegs the future of the South African mobile payment market on cross-border remittances and says the regulations governing money flow across borders should be lowered to allow the growth of remittances to and from the country. (Personal Correspondence 14 February 2012)

Speed

Heyer and Mas' second prerequisite, speed, can be described as how quickly mobile money operators can sign up members onto the system and get them transacting. This fits into the chicken-and-egg trap referred to by Mas and Radcliffe (2010) who similarly examined challenges to uptake.

M-Pesa South Africa has been plagued by the slow signup of users onto its network. The CEO of Vodacom, Pieter Uys (My Broadband June 19, 2011) acknowledges that the company has been targeting the wrong consumers when it launched – black rural, unbanked women – and says this will shift going forward.

Taylor confirms the new strategy to increase sign-up and apart from the deal with Visa, the company has made every effort to tap into other networks through competitions with large brands with established local footprints such as Coca Cola, South African Breweries and Sasko. (Interview. 9 March 2012) This demonstrates the importance of marketing when trying to grow the network.

An additional attempt to increase the speed of sign-up is ensuring the access to utility payments. These efforts have been designed to bring into effect the network effect described by Mas and Radcliffe (2010) which states the value of joining a network is directly proportional to those already on the network.

This network effect and the chicken-and-egg tap, as put forward Mas and Radcliffe (2010) have also been raised by Van Rensburg when he states scale requires at least 30 percent of the target market signing up for the service and using it frequently. (Interview. 8 January 2012)

An additional business driver is the nature of the existing infrastructure. This can include the mobile penetration existing in the country, as well as the existing banking channels.

Coverage

Heyer and Mas' third requirement, coverage, is a further dilemma when assessing business models. In order for a mobile money service to reach scale and deliver on the network effect, consumers need to be able to sign up and access cash-in / cash-out outlets in their own communities. This distribution challenge is something many of the interviewees alluded to.

Sutherland believes M-Pesa Kenya's success was due to the existing Safaricom market dominance and penetration. Making use of the existing airtime agents, the company was able to quickly roll out services to cover the country. (Interview 15 November 2011)

Ernst Van Rensburg points out that Sable actively seeks to partner with companies which already have an establish distribution model as this augers well for a successful implementation, if one holds with the framework put forward by Heyer and Mas (2010)

Collins believes the mobile network operators in developing countries have a natural advantage over the banks as their distribution model is generally more established. (Interview 6 March 2012)

Taylor's frustration with the AML regulations is driven by his understanding that M-Pesa South Africa needs to bolster its distribution model by increasing the number of agents it has access to. (Interview. 9 March 2012)

Esselaar holds that the mobile network companies have the advantage as they already have access to the distribution network through the agents deployed. (Personal Correspondence 2012)

Trust

One element which is not included in the framework put forward by Heyer and Mas (2010) is trust. This is, however, included in the analysis framework put forward by Mas and Radcliffe (2010) and, since many of the interviewees have referred to trust as an issue to be considered, it is worthwhile to include this in the analysis.

The business model assessment framework put forward by Mas and Radcliffe (2010) speaks of the need for trust. Consumers need to trust the product they have been offered.

This is echoed by many of the interviewees who feel trust can be a difficult hurdle to overcome for new entrants into the market.

Esselaar believes it was distrust in the banks in Nigeria which led to the Mobile Network Operators to successfully enter the market. He says consumers were used to the services offered by the MNOs and opted to put their trust in the operators rather than the banks. (Personal Correspondence 11 March 2012)

Hahn agrees that trust is hurdle which mobile money service providers need to overcome, but believes there is no great differentiator between the trust in banks and MNOs.

> *"Who do users hate more than banks? Maybe the telco is the only competition! So this is a race to the bottom in some ways. I don't have a strong sense that Communication Service Provider-led m-payment services*

> *are well received as alternatives to bank-led services. It's more a question of extending service to folks who never had a bank account."* (Hahn. Personal Communication 14 February 2012).

5.4 What other issues are impacting the uptake of mobile money services?

The models put forward by the likes of Mas and Radcliffe (2010), Heyer and Mas (2010) and others go a long way to analysing factors impacting uptake of mobile money. However, they do not make allowance for factors external to the business models and regulatory environment. If the mobile money ecosystem is to be viewed holistically, one must include other factors.
These include the social and political situations in various regions. Issues such as culture, user education and awareness of the product must be included.

Van Rensburg gives these issues consideration when he agrees that education and awareness are hurdles to be overcome. (Interview. 18 January 2012)

Bhan takes the holistic view that factors such as the social circumstances of customers need to be taken into account. She goes on to state that social issues are critical at the outset and that designers of the product should be using this as the starting point when designing a new product.

> *In my opinion, everyday user centred designers who work in innovation know nothing about what they will create or what will emerge, but they start by understanding people and their needs and operating environment and challenges and constraints and then attempt to develop solutions that fit those criteria. Lowers the barriers to adoption if you start by looking for what the end user needs rather than what will benefit the company or the banks, no?* (Bhan. Personal Correspondence 6 March 2012)

This view is supported by Mas and Morawczynski (2009) who call a service offering which is simple to use and which has a simple user interface in order to appeal to the less technically sophisticated market and the lower educated markets.

Taylor agrees that education is a stumbling point for M-Pesa South Africa and is looking to address this through marketing. (Interview 9 March 2012)

Political issues may also play a part. While political unrest is generally bad for business, Burrell points out that the post-election riots in Kenya worked in favour of M-Pesa Kenya and that the success can, in part, be put down to the timing of these riots with the launch of the service. (Interview. 7 March 2012)

The culmination of all these issues is referenced by Sutherland when he suggests that the success of M-Pesa can be attributed to a combination of all these issues in a perfect storm which may never be repeated. (Interview. 15 November 2011)

The one factor raised by both Van Rensburg and Krugel, and which fell outside any of the findings in the readings included in the literature review, was the issue of skills.

Both Van Rensburg and Krugel bemoan the lack of skills in the management of mobile money. Van Rensburg says this is the single biggest issue facing the successful implementation of mobile money services globally.

> *I think a key problem is that it's not always the A-Team that gets to do the work. So, for instance I am running an MNO in country X, I have challenges, I have to distribute prepaid airtime, my network is under strain. Then they are told they have to do the mobile money product as well… they look for the most available person, not the best person to do the rollout. So if you don't have the A-Team working on the project you are going to have B-Team results. And in many instances that's the case.* (Van Rensburg. Personal Correspondence. 18 January 2012)

Krugel echoes this saying the lack of basic business management is holding back the successful delivery of services and references his own findings of working with mobile money implementations across the globe.

> *I have visited nine mobile money initiatives in the last four months and I have been flabbergasted at who is running them. It is not bankers, or even experienced business people. It is middle management IT guys. Given that between six and fifteen percent of an MNO revenue could be derived from a successful mobile money offering, this makes no sense. One company was launching a national product with three fulltime employees to oversee this. The real reason mobile money schemes are not reaching scale is the lack of allocation of appropriate resources to build and lead the business.* (Krugel. Personal correspondence. 19 March 2012)

While this notion of skills as factor in the uptake of mobile money has not yet made an appearance in peer-reviewed literature on the topic, it is an important finding. Both Van Rensburg and Krugel work for Fudamo, a company which has global experience dealing with multiple business models and multiple regulatory environments. Krugel has also had a number of years experience working at the GSMA, a global body recognised for its insight and research into mobile money. It is reasonable to assume both Van Rensburg and Krugel have more than enough on-the-ground experience to make their findings both significant and relevant.

5.5 Research findings

The body of work around why (with a few exceptions), mobile money schemes have not reached scale points to many reasons. Some such as Porteous, (2009) Merritt (2010) and Alampay (2010) have pointed to the regulatory environment, while others such as Mas and Radcliffe (2010) and Heyer and Mas (2010) are looking more closely at the business models and how they are impacting user uptake.

Similarly, those interviewed for this research have different ideas as to what the biggest factor impacting the rollout and user uptake of services is.

Some are convinced regulations need to be relaxed to allow for easier entry into the mobile money space. Others believe the business issues need to take precedence.

It is interesting that three of the interviewees, all of whom are not directly involved in the mobile money industry, but who make it their business to analyse the environment, believe the reason for uptake of services depends on needs of the consumer.

When Hahn predicts the future performance he clearly puts forward the idea that the needs of the users will ultimately determine the uptake of services. (Interview 14 February 2012)

Fellow analyst, Goldtsuck puts forward a similar position saying:

> *I think the key issue is that mobile money services target the wrong need. The purveyors of mobile money argue from a self-interest point of view, and tend to blame external factors for lack of take-up, when it is in fact a structural issue, namely that the needs met by mobile money are already being met by other means.* (Goldstuck. Personal Correspondence. 2 March 2012)

Bhan echoes both when she puts forward her recommendation for companies offering products to first understand the needs of the consumer.

> *In my opinion, everyday user centred designers who work in innovation know nothing about what they will create or what will emerge, but they start by understanding people and their needs and operating environment and challenges and constraints and then attempt to develop solutions that fit those criteria. Lowers the barriers to adoption if you start by looking for what the end user needs rather than what will benefit the company or the banks, no?* (Bhan. Personal Correspondence 6 March 2012)

It may be argued that in order to better understand the factors which impact the delivery and uptake of mobile money services in developing countries, particularly in South Africa – as required by the main research question – we should rather use a needs-based assessment framework.

In the following chapter I examine the overall findings of the research and assess which factors are impacting the uptake of mobile money services as required by the main research question.

CHAPTER 6 Conclusions and areas for future research

Mobile money initiatives are being rolled out across the globe in increasing numbers. Despite this apparent indication that mobile money services are a good business proposition, (why else would companies be investing in them?), the user uptake does not appear to reflect the industry optimism.

The research conducted has been designed to better understand what factors impact the rollout and uptake of mobile money services. The objective of this is to assess if regulations are impeding the uptake, or if there are other factors which are adding to challenge of reaching scale. By better understanding to what extent the contributing factors are impacting user uptake, regulators will be in a better position to understand how they should be regulating the mobile money space.

6.1 To what extent have regulations impacted the rollout of m-money services?

We can see from the research that regulations have an impact on rollout and uptake of mobile money services. While the extent of the effect is debated, most of those interviewed have agreed that regulations do have part to play in the performance of the mobile money scheme.

6.1.1 The cost of regulations on mobile money operations

Companies wishing to operate mobile money services are doing so because they see a business gap in the market and wish to fill it. They are not acting as charitable organisations and margins and profits will be built into the costing models.

Many of the interviewees have argued that the administrative burden of complying to regulations increase in a heavily regulated environment and put forward the notion that this increases the cost of delivering services.

In South Africa, the costs of compliance can be seen from the outset. A company may not take deposits unless they have a banking licence. This forces companies wishing to deliver services to work with an institution which has a licence.

The cost of negotiating these deals, the time and expense of the legal teams as well as the delays while negotiating all impact the business value proposition. The longer it takes to set up, the more costs are incurred. Revenues will need to be shared between the licence holder and the mobile operator resulting in profit dilution.

Setting up systems to ensure compliance adds a further layer of costs. Stricter KYC requirements call for more sophisticated databases and equipment to record details of the customer.

Similarly, the conditions placed on operators to comply with AML/CFT regulations also call for sophisticated tracking and reporting tools.

In a regulatory environment such as South Africa, a mobile money operator will need to ensure that their own IT systems link up to that of the partner bank. This integration will have to be designed and built into the original systems and maintained over time. This is further exacerbated by the duplication of regulations. The FICA and RICA requirements in South Africa each calls for separate reporting platforms and integration – this all adds to the costs of delivery.

The lack of clarity on regulations can add an additional layer of cost. As pointed out by Taylor, the lack of absolute clarity of the Exemption 17 and Circular 6 regulations has taken the M-Pesa South Africa partners two years to address and he argues this has held up aggressive rollout. (Interview. 9 March 2012)

Many authors, and those interviewed for this research, point to the fact that the key factor working in favour of M-Pesa Kenya was that Safaricom entered the market with very little regulatory burden. The company was able to quickly rollout out services without the distraction of dealing extensively with the central bank, rather focusing their time on the crucial element of marketing the services. Having fewer regulations to deal with also meant Safaricom had to incur fewer costs dealing with

the regulations and this leaves more operating capital to spend on building the networks, incentivising the agents to sign up users and advertising to grow awareness of the product.

6.1.2 Regulating for accessibility

It can be argued that regulations can impede the accessibility of the mobile services. Ensuring accessibility is crucial if a mobile money service is to flourish. Indeed, if the service is not available in the rural areas, part of the attractiveness of the offering – ubiquitous service – becomes redundant.

Regulations can impact the rollout of the agent network. Taylor explains how the AML requirements in South Africa have impeded the sign-up of agents. Many of the small store owners are foreign nationals, excluding them from the network and taking them out of the possible on-the-ground representation in many of the places which would otherwise be ideal to add to the M-Pesa distribution clout. (Interview. 9 March 2012)

In a reversal of the problem faced by MNOs wishing to deliver mobile services, banks wishing to rollout a mobile money offering may be forced to partner with a MNO to tap into their distribution network. This has all the associated hindrances of the regulatory overlap described in MNO-led model.

6.1.3 Regulating for trust

A potential mobile money customer must be sure they can deposit their money with a service provider and know that they will be able to access that money again. They need to trust that there are enough checks and balances in the system to protect them. The average user however does not understand the complex rules to put in place protect them – this is the role of the regulator.

A regulator needs to ensure the integrity of the financial system as a whole as well as the integrity of each individual service provider within the financial ecosystem.

This is achieved by regulating which entity can handle money and how they make provision to back the offering. Regulations in South Africa around the e-float and the national payment system have been roundly criticised by some players saying they are overly burdensome. This strict regulatory environment may dissuade MNOs from venturing into the market and may also discourage new entrants. Indeed, Vegter points out how the strict regulations including those of the Banks Act in South Africa are discouraging small, innovative and low-cost services from entering the market.

From the research, we can see that regulations have an impact on rollout and user uptake. Time, managerial attention, technical and compliance considerations add to the cost of delivering the service and the time it takes to deliver it. These have to be factored into the costing models of the services and, ultimately, will impact the value proposition of the offering. For the developing world, where businesses are already struggling to position the value of the offering, this must have serious consequences.

6.2 How have business models impacted the uptake of m-money services?

Delivering mobile money services comes with complex business challenges, most especially in the developing world. The average user in the developed world might be expected to have a reasonable existing experience of mobile applications as well as e-commerce. Making the jump from using an ATM or a computer to transact over a mobile phone would not be large.

In the developing world however, mobile money services are being delivered to a market which may not have the technical and financial literacy afforded a user in the developed world. These inhibitors need to factored into the solution and overcome through various means.

6.2.1 The cost of doing business

As we have seen, rolling out a ubiquitous mobile money service comes at a significant cost. The infrastructure required is extensive. Service providers need a robust and stable mobile network to reach the end user, management systems to ensure compliance and adequate systems security.

Added to this is the requirement for an extensive network of agents to enable cash-in / cash-out functionality. Agents need to be incentivised to join the service and also further incentivised to encourage user sign-up and regular use of the services.

Companies also need to factor in the costs of adverting and marketing in order to drive user uptake. This cannot be done incrementally, but has to be done on a large scale and across the country to ensure the network effect as described by Mas and Radcliffe (2010).

6.2.2 The business of accessibility

Building a mobile money scheme which is accessible to the users requires careful analysis of the how to ensure services reach as many users as possible as quickly as possible. These challenges of the network affect and the chicken-and-egg trap as described by Mas and Radcliffe (2010) are acknowledged by the many players in the field including Van Rensburg when describing what constitutes scale and Taylor when he describes the difficulty of building the agent network by M-Pesa South Africa.

M-Pesa Kenya managed this fairly quickly and this has often been attributed to the project's success.

6.2.3 The business of trust

Instilling trust in a service which is being delivered over a new medium and to a user-base which may not have ever had access to a financial product, are culturally distrustful of the service and who have little financial or technical literacy is clearly very challenging.

Overcoming the issues of trust require intensive attention and investment. Awareness campaigns need to take place across the country making use of every available channel including electronic and print media. It also requires simple, effective messaging to ensure the value proposition is understood and accepted. M-Pesa South Africa admitted it got this wrong and is shifting how it messages and to whom.

When one regulates for trust, assuring the integrity of the delivery mechanism is key. When communicating to the end-user, the business of trust, however, must include the affirmation of the integrity of the business value proposition. As Bahn correctly pointed out, the end-users are not looking for handouts and the dignity of the customer must be taken into account when communicating the value proposition and instilling trust in the offering. (Personal Correspondence. 6 March 2012)

From the research it is clear that the business models designed to deliver mobile money services may not be wholly appropriate. The challenges of encouraging users to sign up require further attention. M-Pesa South Africa openly admits that it got it wrong the first time around. This despite the wealth of previous findings from many other projects in many other regions, not least of which was its namesake in Kenya. At the very least, one can deduce that much work is still required to better understand the complex needs of users and to engineer business models which answer those needs more appropriately as so correctly highlighted by Hahn, Goldstuck and Bhan (interviews 14 February, 6 March and personal correspondence 2 March)

6.3 Other factors impacting the uptake of mobile money services

The socio-political factors impacting the uptake of mobile money services are far harder to quantify than the business and regulatory factors. Issues such as the levels of financial and technical literacy are developmental issues which differ from region to region. While most of the interviewees have readily acknowledged the impact of these factors, they have taken a back seat to the more pressing and immediate issues of regulations and business models. This is not surprising since it could be argued these issues are beyond the control of the companies rolling out mobile money services. Developmental issues of countries could be improved, but this is generally in the realm of national policy as it pertains to basic education. The South African government has made attempts to address financial literacy through the Financial Sector Charter, but the efficacy of this lies beyond the direct control of the mobile money service providers. This increases the challenge for operators, although some of the marketing initiatives have attempted to address this.

6.3.1 How do skills impact the uptake of mobile money services?

One of the factors falling outside the traditional frameworks of regulations and business is the issue of skills as raised by Van Rensburg and Krugel. (Interviews. 8 January and 19 March 2012)

This issue raises a challenge for the analysis as it straddles two areas. First, it lies in the area of socio-political issues since it deals with education. Van Rensburg bemoans the fact that the formal education system has not appropriately catered for the creation of the required skills in the industry (Interview 8 January 2012)

The lack of appropriate skills can also be assigned to the area of business challenges. As both Krugel and Van Rensburg point out, companies rolling out m-money services seem to assign the management of the operations to people who are ill-equipped to deal with the operational and business requirements. Van Rensburg speaks of the 'B-Team' results delivered by second choice teams assigned to deliver on some projects.

(Interview 8 January 2012) Krugel similarly refers to "…the lack of allocation of appropriate resources to build and lead the business." (Interview 9 March 2012)

If Van Rensburg and Krugel are correct, it begs the question of just how invested MNOs and banks are in mobile money projects in the first place. Hahn may have pointed out a key issue when he said:

> *They're (the banks) in it, maybe for similar reasons that Vodacom is doing the SA version of M-Pesa. They are trying some things but I had no sense that it was full steam ahead, we know what we want…I think the MNOs are playing rather defensively, not wanting to be left out in case something takes off.* (Hahn. Personal Correspondence. 14 February 2012)

It is clear from the research that not only are the effects of these difficult to quantify, but that there is still much to be learned, particularly in the areas of skills.

6.4 The assessment

When trying to assess the factors impacting the rollout and uptake of mobile money services it becomes clear that regulations, business issues and socio-political issues are closely interwoven. It is almost impossible to separate them as they impact each other.

For the regulator, this makes things very difficult. The 'regulator's dilemma' as pointed out by Dias and McKee (2010) is very apparent in this instance. The call for proportional regulation by authors such as Porteous (2009), Merritt (2010) and Alampay (2010) is made significantly more difficult when we understand how complex the issues affecting user uptake really are.

It is clear the South African Reserve Bank has a tough road ahead. They should be commended for their 'open minded' attitude when tackling the problems of regulating for mobile money uptake (Mitchell. Interview. 22 March). Indeed, from this research

we can see Dias and McKee's (2010) call for a balance between regulation proportionality and efficacy may still be a way off.

6.5 Areas for future research and recommendations

6.5.1 Areas for future research

While many of the research findings reflect the general themes of the literature review, the anomaly raised by Van Rensburg and Krugel raise interesting new issues. The lack of appropriate skills in mobile money industry deserves further attention and research for the following reasons:

1. To better understand the impact this is having on mobile money projects

2. If it is impacting services, to find ways to address the issue through the creation of skills transfer, appropriate education initiatives and the possible industry intervention suggested by Van Rensburg (Interview 8 January 2012)

3. To fully understand the serious issue this highlights of just how important mobile money projects really are to both banks and mobile network operators. If, as Hahn suggests, (Personal correspondence 14 February 2012) both are merely making sure they are involved and biding their time until m-money services really become revenue drivers, then regulators should be considering how to enable small, innovative start-ups and allow them to deliver services.

6.5.2 Recommendations for m-money operators

While this research does not come to a definitive answer as to why mobile money schemes are still not reaching scale, it highlights the challenges facing mobile money operators and suggests factors they should be aware of when building solutions best suited for success. These include ensuring they develop business models which address the challenges of user uptake, including user awareness, levels of financial literacy and their real and relevant needs.

Operators should also be mindful of the regulatory challenges they will have to address as well as the possible difficulty of breaking into markets which are heavily regulated.

6.5.3 Conclusion

Finally, mobile operators should give careful thought to which skills they assign to manage the delivery of mobile services. From this research we can see the complexity of designing and delivering a sustainable mobile money service offering. If operators are truly serious about delivering a successful operation, finding and assigning the right team may be the most important decision they make.

CHAPTER 7. References

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Appendix A Baseline questionnaire

1. In your opinion, have regulations negatively impacted the mobile money space in South Africa?

2. Do you think a light-touch regulatory environment assisted roll out of m-money services in other developing countries?

3. Do you think the business models being used are impacting the uptake of m-money services in developing countries, and if so, how?

4. What impact do issues such as marketing, user education, literacy and cultural mistrust of formal financial services have on the uptake of m-money services in the developing world?

5. Do you think m-money services will gain momentum in South Africa and, if so, what will be the catalyst/s that will stimulate the growth?

6. How important are m-money offerings to the banks in South Africa?

7. How important are m-money offerings to the Mobile Network Operators in South Africa?

8. What is your outlook for m-money services in the developing world and South Africa in particular?