

Mobile payment services in South Africa: Providing secure financial services to the poor

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Abstract

The use of mobile technology based solutions is one of the key response mechanisms that financial institutions utilize to address banking the unbanked and underserved. Financial institutions are increasingly relying on mobile technologies to provide the poor with secure access to financial services. This paper reports on the progress achieved in South Africa thus far and the differences of the various models and technologies employed. Different organisations mobile products offerings are analysed in comparison with other offerings functionalities and how the different models appeals to different segments of the unbanked. To address this, an exploratory research approach that employs a case study is employed. The perspectives that follow can help shake up thinking and forge a new frame of mind on how these models can be improved to encourage financial inclusion. Recommendations are made for financial institutions to enhance and improve their service and provide more value to their customers.

Keywords

Mobile payments, poor, unbanked, secure financial access

Introduction

Over the past years poor people have been excluded from formal financial system. The exclusion was mainly based on the perception that the poor cannot afford to pay for financial services and that they do not need them. The unbanked had to devise means on how they send or receive money among other things. For many unbanked, receiving and sending money was like a real headache. It was time consuming as many unbanked had to rely on unsafe methods to receive and send money; they had to travel some distance to find somebody that they can rely on, trust and give money

to for their loved ones. This made it an administrative burden for the poor by constantly having to wait for longer periods before the money can be received and losing money as a result of theft.

Mobile phones provide a new and rapidly developing technological means to facilitate monetary payments and transfers for those excluded from formal financial systems (CGAP 2008a; 2008b; Porteous, 2007; Cracknell, 2004). With the wide reach of mobile phones in South Africa, financial institutions has partnered with other organisations to close the payment services loop by providing the unbanked a safe and convenient medium. In South Africa currently there are an estimated 26 million handsets in circulation. There is a high penetration of cellphone usage/access amongst the currently unbanked (31% of unbanked people have a pre-paid cellphone and a further 17% have access to cellphones via people living in the same home, as per FinScope Consumer 2006). This demonstrates that mobile banking has been identified as a potential vehicle to expand access to financial access in the poorer and rural market segments, which traditionally have not had access to these services. Mobile phones are pervasive in South Africa with there being 40 million mobile phones in a population of 49 million people, of which 62% of the adults with a per capita income of less than R5 per day personally own, rent or have use of a mobile phone (Deloitte, 2010). This provides ubiquity.

Cellphone banking appears to make it more comfortable and convenient for poorer people to use financial services. It allows for easier access rather than travelling to branches/ATM (Automated Teller Machines). According to FinScope Consumer (2006), money from friends and family is the main source of income for 25% of LSM 1-5⁸ populations, so cellphone banking could possibly make the transfer of money/remittances easier for these people. Thanks to innovations in technologies, mobile phone technologies is pioneering banking for the unbanked and is making their lives easier as they can now receive and send money immediately on their mobile phones.

Since the inception of mobile payments, the poor has a reliable medium to send money, poor people do not have to rely on the risky type of mediums to send their loved ones money. Mobile payments serve as a first step to transform the financial environment and to include the unbanked to form the bigger part of the banked. However, for this to happen, the current product and services offering needs to be improved on for the unbanked to fully want to be part of the financial segment. Product and service offerings need to cater for their needs. In this paper, mobile payments is defined as the facilitation of money through a mobile phone, that is the use of a mobile phone to facilitate the transfer of money be it just a communication channel.

The success story of mobile payments in South Africa for the unbanked can be observed from the service provided by Capitec in partnership with Shoprite Checkers and pick n pay (CGAP, 2010; Finmark Trust, 2011). Capitec bank in 2006 introduced

⁸ LSM is an abbreviation for Living standard Measure. LSM 1-5 indicates the population that lives with low income of less than R5000 per household, normally living in a tribal land or informal urban settlements, some with basic financial services and others not .

an innovative service targeting the low-middle income population which constitutes the unbanked. It partnered with retailers to offer the money market transfer service (Finmark Trust, 2011). The service can be accessed nationwide at the branches of these retailers. Over time other financial institutions also responded by offering similar products, the mobile payments services provided through FNB eWallet, ABSA Cash-send which are services mainly for the banked which can be used to send money to the underserved. Furthermore, Standard bank joined in with a service called instant money transfer with Spar then Nedbank Vodacom introduced M-Pesa. It can be said that these organisations are the pioneers of banking the underserved in South Africa mainly because these organisations are now making inroads and focusing on the poor.

In this, paper we will report on the progress made in South Africa with regard to mobile payments services. Some mobile payments services in South Africa are explored looking into its current state. In addition, the study will also look at the various models and technologies used in South Africa by the different providers. Finally, the authors discuss the challenges encountered and provide recommendations on how the services can be improved to facilitate these services more efficiently.

Mobile payments services in South Africa

It has been predicted that mobile payment will become a successful mobile service for the reason that in addition to the necessity support services, the growth of mobile commerce relies vitally on effective payment solutions provided by mobile payment services and vice versa (Constance, 2001; Lee and Benbasat, 2004). Mobile technology is poised to make positive waves on the South African financial market as the results and success of mobile payments services indicates. A number of key changes are taking place as banks position themselves to enter new markets and serve previously excluded poor communities.

The South African retail payment services landscape has developed significantly in the past few years (FinMark Trust, 2010). According to FinScope Consumer (2005), awareness was potentially a barrier to the poor, 42% of the population had never heard of cellphone banking and a further 28% did not know what it means. However, over the years this trend has changed. Well over the years we saw various organisations introducing mobile payments or money transfer services.

The mobile payments and money industry has doubled in size over the past year and Africa continues to play a dominant role in terms of mobile money adoption (GMSA, 2011). Mobile phone adoption is high in several African countries in terms of individual mobile phone subscriptions usage (above 75%). For example, South Africa (92.7%), Algeria (93.8%), Botswana (96.1%) and Morocco (79.1%) all have relatively high mobile phone adoption (World Economic forum, 2011).

Deloitte (2010) argues that the use of retailer stores and mobile phones as new distribution channels as well as the deployment of a set of basic transactional, insurance, savings and lending products supported by business processes applicable to lower income markets is one means of unlocking the banking opportunities that have for so long been laying trapped at the bottom of the pyramid. These will allow all

parties of the value chain to benefit as they reap value from complimentary service provided.

The first low-cost money transfer service was launched in April 2006, since then it has found immediate acceptance with consumers as a completely secure, uncomplicated way of moving money in real time between any of the 432 Shoprite and Checkers stores in South Africa. Up to R5 000 can be transferred at a time at a fee substantially lower than that charged by any other financial institution. Support for the service has grown exponentially, underlining the enormous demand in the Group's target market for such a facility provided at an affordable cost. Shoprite's Money Market continues to do extremely well with 29% growth in total money collected, 47% growth in money transfers and 1.4 million new customers in the six months up to December (Durham, 2012). The product has been successful as can be seen from the queues of customers that run from outside the stores' entrances at month-end. Whilst perhaps not a huge profit spinner compared to their other revenue streams, Shoprite's money transfer product has certainly helped the retail giant to further enrich its customer value proposition.

On the other hand, First National Bank (FNB) introduced eWallet as another way that the bank tries to simplify banking making it less expensive and accessible to everybody who has a cellphone. The eWallet service offers every FNB bank account holder the capability to send money to anybody with a mobile phone. The recipient (who does not need a bank account) can withdraw the cash at any FNB ATM or pep stores. The sender gets charged a transaction fee of about R9 and the recipient does not have to pay to get the money.

During 2008, Absa, SA's largest retail banking group revolutionized fund transfer services with CashSend, its cardless ATM cash transfer offering. It was the first of its kind in the whole of Africa. CashSend allows Absa customers to send money to anyone with a mobile phone by means of Internet or cell phone banking or from any of Absa's ATMs. In order to intensify its presence in this market Nedbank partnered with Vodacom to bring M-Pesa to South Africa. In 2010 Nedbank and Vodacom entered the mobile payments space in South Africa by introducing M-Pesa. This service can be accessed through Nedbank Branches nationwide and the participating Vodacom retail shops nationwide.

Furthermore in 2010, together with Spar, a leading retail group in South Africa, Standard Bank South Africa launched Instant Money, a person to person money transfer system. The partnership allows Standard Bank South Africa to access Spar's 800-store footprint to reach remote communities. At a Spar store, customers can pay a R9, 95 transaction fee and hand the teller the money they want to send. The person receiving the cash will receive an SMS (short message service) voucher number which they can then redeem at a Spar store by entering the secret four digit code. Instant Money has been developed in such a way that the service can be accessed on even the simplest mobile phone models and across networks. In order to intensify its presence in servicing the poor they introduced another service which is done through combining cellphone banking and community bankers where banking is extended without the need to open new branches and installing of new ATMs. They use what they call bank shops which are made of spaza shops and butcheries as

their retailers to access their money transfer. Standard Bank's solution entails partnering with spaza shops in townships and rural areas to offer a bank shop. Customers can open an account at their local spaza shop to deposit and withdraw money as well as buy airtime and electricity. The costs of transacting are relatively low: no deposit fees and a withdrawal fee of 1% of the value R1 to withdraw R100 – with a minimum fee of 50c.

However, it should be stated that standard bank had earlier implemented a mobile money service with MTN and the service did not roll out as was anticipated. Among other reasons that led to the failure or lack of adoption of the service by the users was that the account was a SIM based application and that users had to use a specific MTN SIM card to use the service. As a result of the service being built into the SIM card the users resisted using the service and it proves the concept that nowadays consumers are king and will not just accept services but will determine how they want to be serviced. That is, they will accept services that make their lives easier and not inconvenience how they want things to be done. An important lesson to be learned by organisations catering for the poor needs is that the poor as a market are demanding and will not settle for anything but what they consider the best.

On the other hand, the Nedbank Vodacom M-Pesa service has not performed as well as was anticipated and has not lived to expectations of its predecessor M-Pesa in Kenya. Among other things that are observed by the authors to be holding back the progress and success of the service in South Africa could be the rich culture and diversity of the South African population. South Africa as a country has 9 official languages, which indicates the diversity of this population, having a service and calling it with a name that they cannot associate with their diversity can cause resistance or slow adoption. The importance of culture should not be overlooked when introducing services as it can determine the failure or success of the service. It can be argued that looking at the timing of when the M-Pesa service was introduced in South Africa it was at a time when there has been Xenophobia attacks in the country, which involved the poor so using a foreign name for a service they are supposedly to use can be an insult culturally and build resistance. Mainly because of the perception that the foreigners are taking things that they are entitled to and that their culture is disregarded.

From the discussion, it can be observed that mobile payments services in South Africa is still in the early stages where most of the organisations are still implementing the models while others are enjoying the first mover advantage and the market presence. Various models implemented in South Africa are discussed further to determine their shortfalls and strong points.

Various models and technologies

A case study approach is employed in this study since it permits the researchers to examine a phenomenon in its natural state and employ multiple methods of data collection (Blumberg, Cooper, and Schindler, 2008; Cooper and Schindler, 2006). Different mobile payment offerings from various organisations form the case study. They are examined and the experience of users of using mobile payments. Data was gathered through observation of users, interviews and through experience of the authors in using the mobile payments services. This provided the researchers with

good understanding of the services and their functionalities.

The case study details user' experiences of mobile payments users who used the services in the past, describing the challenges and issues that they faced when using the services and what they admired about using the services. The user's tasks were to use the services and were interviewed after completing their transactions by the researcher to obtain feedback on their user experience and to find out what features the participant liked or didn't like about using the service. Data provided is based on the subjective judgement and feelings on the quality of user's interaction with a service when using the mobile payment service. Furthermore the user experience is based on the interaction with the service and their expectation prior of using the service and against how they felt after interacting with it.

Currently there exist various models of mobile payments in South Africa which can be categorized into three categories; namely the Id doc model, bank account mobile payment and the mobile number mobile payment.

The ID doc model requires the recipient and the sender of the money to have their Id documents to be able to access the service. Services which form part of this model are Shoprite Checkers, Pick n Pay and Spar. While the bank account mobile payment suggests that the person sending the money needs to be having a bank account at one of the banks offering the service, such services are eWallet and cashsend. Then the mobile number payments type of service which basically requires the sender of money to have a mobile phone and to be registered for the service to be able to make transfers, such services are M-Pesa and Standard bank instant money. Figure 1 below depicts the different mobile money transfer services.



Figure 1: Mobile money transfer services

In Table 1 below the different ID doc model services are compared against each other for similarities and differences.

Name	Shoprite checkers	Pick n pay	Spar
Registration	sign up for the service with a proof of identity	sign up for the service with a proof of identity	sign up for the service with a proof of identity
Transaction cost	R9.99	R9.99	R9.95
Transaction limit daily	R5000	R5000	R5000
Pin secured	Yes	Yes	Yes
Cash deposit requirement	Id document	Id document	Id document
Withdrawals	Id document	Id document 15 digit number 5 digit pin	Id document
Access points	All Shoprite checkers stores	Participating stores	Participating stores
Accessibility & visibility	All stores branded with money market, signage is very clear you know where go to make transactions.	Not all stores have the signage, you need to ask if they provide such a service and if not ask to be referred to the nearest if they know any.	Participating stores are branded.
Set up	Dedicated computers	A terminal	A terminal
Notification service	No	No	Yes
Category of model	Retail led	Retail led	Retail led

Table 1: ID doc model

From Table 1 above it can be observed that the Shoprite checkers money transfer can take place at all branches of this retailer and is more reliable than the other money transfer services because as a user when you enter the store to make a withdrawal or deposit you will not be turned down as a result of service being unavailable. However for the other service providers the same cannot be said as it is not visible enough within the stores, you need to ask the employees whether such a service is available. A superior functionality provided by the instant money service is that the receiver will receive an SMS notification of the transfer as compared to other services where the sender needs to send the receiver the money transfer pin and reference number through a sms. Another unique feature provided by the shoprite service is that the reference number shows when the deposit was made and you can easily tell the date the money was deposited.

Name	Cashsend	eWallet	M-Pesa
Registration	ABSA bank account	FNB account user	Nedbank account user
Access points	Internet banking ATM	Internet banking ATM	Internet banking
Transaction cost	R7.70 for first R100 thereafter R1.10 for every R100	R8	R10
Pin	Yes	Yes	Yes
Availability	Immediately	Immediately	Takes a few hours to clear
Access points	ABSA ATM's	FNB ATM's & Pep Stores	Nedbank branches/ATMs & Vodacom airtime retailer shops
Communication Channel	SMS	USSD	USSD
Security	Good	Good	Good
Maximum amount	R1000 Per transaction	R1000	R1000
Category of mobile payments	Bank-led	Bank-led	Bank-led

Table 2: Bank account mobile transfer

The following was observed from using the above services, when sending money through the cashsend service the recipient of the money will receive a sms from the bank notifying them that they have received the cashsend and a 10 digit code. The sender of the money will then communicate a 6 digit pin number to the recipient, which normally gets communicated via sms. Then the receiver of the money will go to the ATM and withdraw the money using the 10 digit code and the pin number. On the other hand eWallet service operates differently because of the USSD technology, after completing the transaction the recipient will receive a notification sms that states that they have received an eWallet of a certain amount and to access it they need to dial *120*332# to access the eWallet thereafter they are required to create a pin. The notification sms provides details of who send the eWallet. To access the eWallet you need to have airtime to be able to use the service and in cases where the recipient does not have airtime; the service provides an option to first buy airtime using the money in the eWallet then proceed to withdrawal. It was observed that for the first time when using the service the recipient will often complain about needing airtime to access the service. And will complain by saying I'm asking for money because I do not have it and how do you expect me to access this money without airtime. After creating a pin the recipient is then asked if they will like to withdraw the money and which access point to use (FNB ATM or PEP Stores). If the recipient selects the ATM option the system generates a pin then sends it to them via sms. It was discovered that through this process the recipient often became confused for the first time when they needed to withdraw the money as they were not too sure which pin number they were supposed to use at the ATM to withdraw but after they have used the service a couple of times it became easier to use. It was observed that at times it happens that the SMS takes longer to be received then the recipient panics. The confusion about

the pin was as a result of them creating a pin earlier to access the eWallet so the recipient is not too sure which pin to use when making a withdrawal whether is the one they created or what.

M-Pesa service however functions a bit differently when initiating a transaction via internet banking. It was discovered that when initiating the transaction you do not receive confirmation immediately of whether the transaction was successful or not and that created doubt on the sender and recipient sides as neither cannot confirm whether the transaction went through or not (no notification message). As a result of not receiving the message the sender decided to seek help in order to resolve the matter. After contacting the service provider to enquire and seek clarity it was discovered that the process is not clear from customer service as they didn't know or not aware who is responsible and how to track the payment. Nedbank customer service representative claimed that it was not possible for the sender to initiate the transaction via internet banking as the sender has not registered to use the service and does not have a mobile account (an account linked to the mobile number of the sender). It was disappointing to hear the service representative not knowing their products offering and continuously saying you cannot do M-Pesa transaction if you did not register your mobile number to use the service. As the customer service representatives did not know how their service operates, they then referred the sender to call Vodacom as the other partner. On the other end Vodacom referred the sender back to Nedbank and said if you did not initiate the transaction from the airtime resellers (Vodacom access points) there is little that Vodacom can do as they cannot track the transaction on their side but were atleast able confirm that there has not been a withdrawal of the funds from the recipient. After calling the two organisations a couple of times trying to find a solution the sender was told the transaction will clear after 2 to 4 hours that is the transaction does not happen in real time. As much as the service seem to be good, as a result of unclear processes users will get discouraged from using the service and will give up and not try and use the service again mainly because of not having a clear recovery process in terms of a problem. The services security is perceived to be good, for instance with the cashsend service if the recipient enters the pin number incorrectly it will lock the money and it will require the sender to create a new pin number and resend it to the recipient while for the eWallet the recipient needs to withdraw the money within 30 minutes of receiving the pin number. Failure to withdraw within the set time the pin expires then the recipient is required to repeat the process to receive the new pin through sms.

Name	M-Pesa	Standard bank bank-shops
Registration	Proof of ID Mobile number	Proof of ID required Mobile number
Store locator service	Web based information	USSD menu
Access points	Vodacom airtime reseller stores	Bank shops
Transaction costs	R10 to unregistered customer R2.45 registered customer	R10
Maximum amount	R1000 standard customer R5000 premium customer	R1000
Availability	Immediately	Immediately
Pin required	Yes	Yes
Access points	Participating airtime resellers	Participating shops
Accessibility and visibility	Shops branded	All participating shops branded

Table 3: Mobile number money transfer

Table 3 above provides the similarities and difference of the services that can be classified as mobile number money transfer. To be able to send money via both services you are required to register as a sender by providing the service agents with proof of identity and also required to provide a mobile number. However on the other hand the new and revamped Instant money provides users a service to locate their bank shops making it easy to take advantage of the money service. As for M-Pesa location service it was discovered that the information on their website about where to locate their participating outlets is not reliable. When selecting North West and Northern Cape provinces trying to locate where the outlet is located it shows no outlets in that province. And when you select Free State it gives results and when going through the towns in that province it was discovered the towns for North West and Northern Cape are wrongly displayed. As a result this question the quality of information provided and service for their current and potential customers. M-Pesa service provides different user status to the different users that use the system and the status are determined by the value of transactions the sender can initiate. An added advantage provided by the bank shops is that at the time of registering for the service the clients will receive bank cards that they can use for paying for goods and services and that they do not need to travel long distance to go look for retail stores. They can just use spaza shops in their respective areas saving them transport money.

The above services are used by the different categories of people banked and unbanked/ underserved and is not mainly for the unbanked. The services are used on instances when one requires money and it can even be from a banked person to another banked and reason being for the low or perceived cost and convenience of the service. Furthermore, it can be from banked to an unbanked or from an unbanked to unbanked and reason being for the low or perceived cost, safety and convenience of the service. The attraction of mobile payments is unquestionable as it caters for all and is not just a service for the unbanked. In some instances it is cheaper to receive

money through this service as compared to receiving it as a cash deposit through a bank account. However, because of the introduction of ATM cash deposit this can never be the case anymore for the banked as it costs less. An important observation made is that as soon as the recipient receives the money they will withdraw all of it even if such services allows the money to be kept for a maximum of 7 days and this type of behaviour can be associated with return charges on the recipient side and it's a way to avoid such costs and also it could be the need to spend money on the specific need aroused. The other reasoning for this type of behaviour could be attributed to the lack of retailers accepting mobile payments for the payments of goods and services. The next section looks at the issues that hamper the implementation and adoption of mobile payments.

Overview of Challenges and recommendations in extending mobile payments Services to Poor Communities in South Africa

Firstly, despite the benefits arising from diversified access to, and enhanced utility from mobile payments services, some users still prefer old trusted methods of using people that they trust and the personal touch characteristic of traditional methods. Besides, the near absence literacy of mobile payments for people living in rural and peri-urban areas coupled with trust issues when it comes to the service will raise fears for people not to use the service.

Secondly, mobile payments service revolution brings security, technological and reputation risks. For South Africa, a country with relatively high crime rate, there is an inherent risk that majority of bank shops/ agents might be side-lined from offering these innovative service as they want to reduce risk on their side and not participate. Being an agent will put these shops at risk of robbery as they might be required to keep cash float so that they are able to offer efficient services to their communities.

Thirdly, as banks adopt mobile technologies to improve and diversify their services, one must bear in mind that not everyone in South Africa is technologically literate. For South Africa, a country with a relatively high illiteracy rate, there is an inherent risk that majority of its poor people might be side-lined from accessing these innovative services as they are not conversant with the new banking methods. Also that is seen as a challenge for these services is not knowing, where one can find the nearest service point when in unfamiliar area or when one is new to using the service. Banks need to educate the unbanked on the services and reach out to them for the services to be successful and widely used.

It is recommended that the financial institutions should create a simple and consistent journey to reinforce trust, ensure access, facilitate usage and maximise customer value. Furthermore it should stimulate trust and sensitize users, that is organisations should constantly do brand repositioning and further trust building measures will be needed at both the product launch and when acquiring customers. The needs to be clear reporting lines in terms of resolving problems as when they arise and that the business processes. Optimizing process and business rules can be a challenge when serving low income or poor people therefore financial institutions needs to align their processes. Moreover, it will be helpful if the entire service provider can offer location based service to make it easy to locate the closest service

agent. For services where not all retail outlets are participating they need to provide a geo location service so that users can easily identify their nearest access point without wasting time going through a number of outlets. This can save time and enhance customer satisfaction leading to service retention.

Financial institutions needs to make sure that the employees are well trained about the service or product knowledge and how to deal with service queries efficiently. When customers are not receiving good service this can frustrate them and it decreases the chances of return service. Furthermore in terms of joint organisation mobile payments, there needs to be clear processes and branding, so that clients can enjoy the benefits.

Conclusion

In the past, access to financial services was dominated by a few affluent members of the society in South Africa. Consequently, the poor require dependable financial services to boost their economic potential, escape the poverty trap, and sustain decent livelihoods. The rise in mobile payments is perceived as key to providing new solutions to improve access to financial services by the poor. The South African financial institutions have reached a crossroad and can no longer provide excuses for not reaching out to marginalized communities thanks to mobile technology innovations. Mobile technologies have been harnessed as powerful instruments for social change and the elimination of financial exclusion.

Central to the provision of mobile payments services is the need for affordable access by the majority poor in South Africa. The effort to modernize financial services through mobile payments seems to add convenience to the banking experience, lower costs and enhance access by poor households. However, mobile payments solutions face some challenges that require dedicated operational and security investments. With Information Communication Technology driving service innovation, financial institutions are being motivated to adapt them for use by underprivileged communities and to not push forward sophisticated products as an excuse to perpetuate the financial divide.

The primary key to success for mobile payments lies in having to address the customer needs of affordability and accessibility whilst still being able to meet the arduous return on capital requirements of a providing institution.

References

BLUMBERG, B., COOPER, D. R. & SCHINDLER, P. S. 2008. Business Research Methods (2nd Ed.). Berkshire, UK: McGraw-Hill Education.

COOPER, D. R. & SCHINDLER, P. S. 2006. Business Research Methods. (Ninth ed). New York: McGraw-Hill/Irwin.

Deloitte. 2010. Banking the Bottom of the Pyramid.

http://www.deloitte.com/assets/Dcom-SouthAfrica/Local%20Assets/Documents/Banking%20the%20Bottom%20of%20the%20Pyramid_16112010.pdf [accessed: 07 May 2012].

Durham, L. 2010. Shoprite shows off strong sales and new stores.
http://www.supermarket.co.za/news_articles.asp?ID=3441 [accessed 25 Apr. 12]

Shoprite. 2007. Annual report 2007.
<http://globaldocuments.morningstar.com/documentlibrary/document/361644e19500700e.msdoc/original> [accessed: 25 April 2012].

GMSA.2011. GMSA Mobile Money for the Unbanked Annual Report 2011.

Fisher-French M. 2011. <http://mg.co.za/article/2011-07-01-banking-on-spaza-shops> [accessed 25 April 2012].

World Economic Forum. World economic report.

Cracknel, D. 2004. "Electronic Banking for the Poor-Panacea, Potential and Pitfalls," Small Enterprise Development, Vol.15, No.4, pp.8-24.

Porteous, D. 2007. Just How Transformational is M-Banking? Fin Mark Trust.

Finscope 2006. Mobile banking South Africa, pilot survey highlights.

Naidoo, S. 2005. The Microfinance sector internationally and in South Africa. Policy brief 42. The William Davidson Institute, University of Michigan.

CGAP.2008a. Regulating transformational branchless banking: mobile phones and other technology to increase access to finance, *Focus Note, No.43*, Consultative Group to Assist the Poor, Washington, D.C. [Online] <http://www.cgap.org> Accessed 07/05/2012.

CGAP.2008b. Banking on mobiles: why, how, for whom?, *Focus Note, No.48*, Consultative Group to Assist the Poor, Washington, D.C. [Online] <http://www.cgap.org> [Accessed 07/05/2012].

CGAP.2010. Update on regulation of branchless banking in South Africa. [online] http://www.cgap.org/gm/document1.9.42404/Updated_Notes_On_Regulating_Branchless_Banking_South_Africa.pdf

Constance, S.2001. A Value Chain Perspective on the Economic Drivers of Competition in the Wireless Telecommunications Industry; Doctoral Dissertation (Supervisor: Gower, J.), MIT Sloan School of Management.

Lee, Y.E.; and Benbasat, I. 2004. "A Framework for the Study of Customer Interface Design for Mobile Commerce", *Int. Journal of Electronic Commerce*, Vol.8, No.3, pp.79–102.

Ivatury, G. & Mas, I. 2008. The Early Experience with Branchless Banking, *CGAP Focus Note No.46*, Consultative Group to Assist the Poor, Washington, D.C. [Online] <http://www.cgap.org> Accessed 27/04/2011.