



cutting through complexity

Payment Developments in Africa

Volume 1 / 2015

kpmg.com

The Payments Journey

Foreword

Welcome to the 1st edition of our series on “Payment Developments in Africa”.

Payments has historically been viewed as being a somewhat boring topic within the financial services industry. However, with the more recent rapid pace of change, innovation and growth experienced in the payment sector both globally and within the African Region, there is a changing perception of payments and it is now seen as potentially one of the most valuable elements of our financial system.

Emerging trends such as mobile payments, digital banking, social media, entrance of new and unconventional players and business models, growing regulatory interest and increasing efficiencies in settlement mechanisms are impacting the payments sector around the world. The emerging payment trends are creating both opportunities and challenges for industry players and regulators alike.

Payments is a key agenda item for many of our Financial Services clients, as such, we at KPMG have committed significant resources to build our Africa Payments Advisory Services. KPMG is positioned with the relevant knowledge and expertise to advise our clients and provide meaningful insights in the area of payments reform, strategy and innovation in Africa and other parts of the world.

Some of the biggest challenges that face development of electronic payments in Africa today include financial inclusion, infrastructure development (specifically sustainable electricity power and telecommunication), low literacy levels, security etc. These challenges present a real and tangible opportunity for the African continent to continue to develop secure, convenient, efficient payment instruments and channels to drive adoption and inclusion. By leap-frogging older legacy technology and using mobile payments/banking, accompanied by an enabling regulatory oversight framework, Africa has an opportunity to address challenges for the burgeoning population.

In this payments study, we have profiled the payments systems and developments in three of our key markets in Africa – Kenya, Nigeria and South Africa. We have also explored payment developments in Brazil as comparative study given the similarities in demographics and financial inclusion.

To supplement our study we have explored two additional subjects which are relevant in the development of payments within the African region:

- › Embedding Payment Card Industry Data Security Standard (PCI DSS) compliance in Banks’ DNA, and
- › Interchange and Regulation

We believe that our firm’s keen understanding of the African market with our experience in the payments sector positions us as the preferred adviser to both local and international players seeking to make the most of the payments transformation opportunities in Africa.

We encourage you to contact your local KPMG member firm or any of the contacts listed at the back of this publication for further enquiries.



Bisi Lamikanra
Partner & Head,
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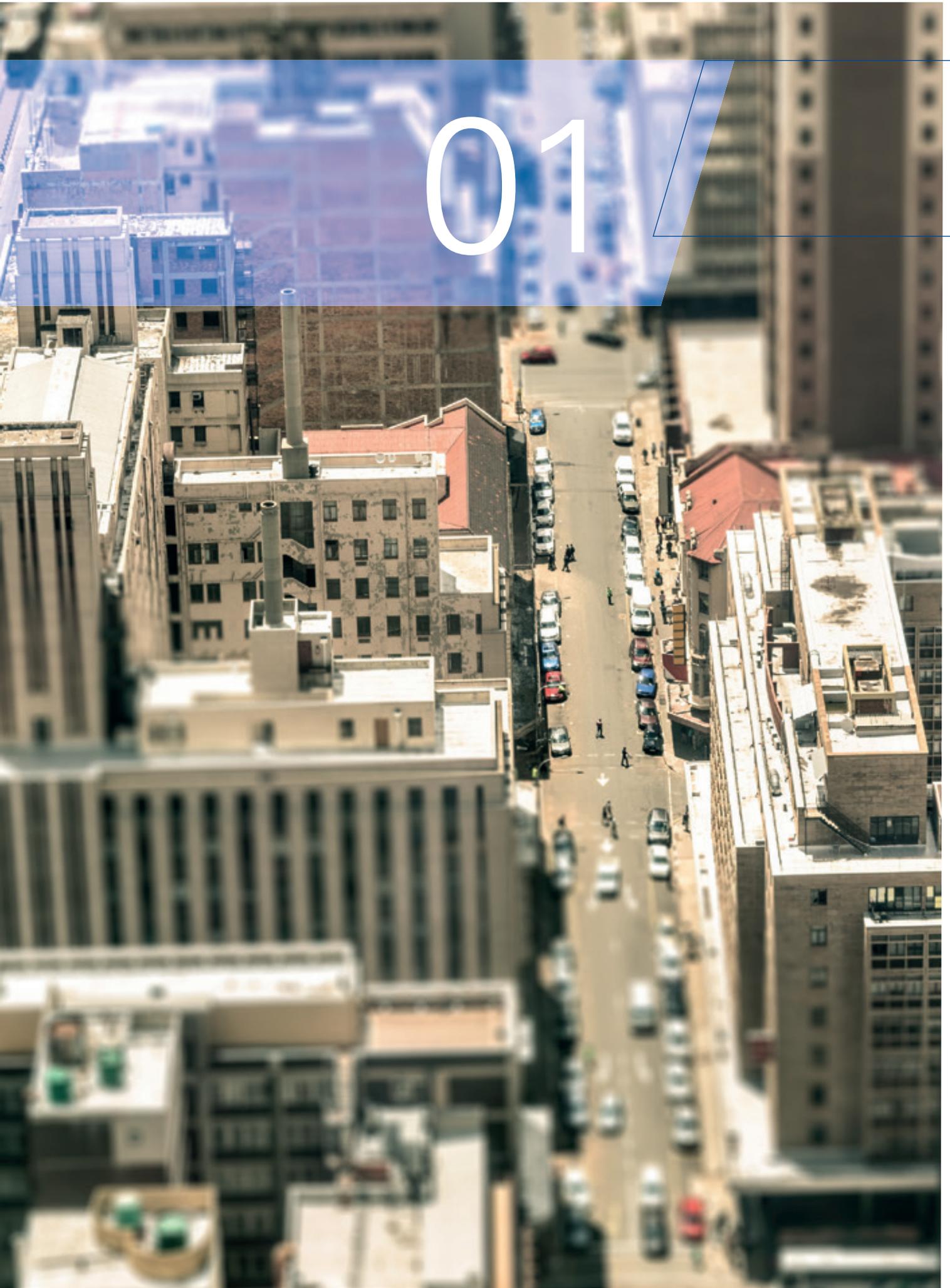
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01



Africa

Overview of the Study & Trends

Executive summary

Headlines



As a continent on the “Rise”, Africa holds enormous potential for growth, with 50% of the population under 34 years...providing banking/payment solutions is the big challenge

Overview of the Study & Payment Trends

- › The African payment opportunity is significant and is being driven by both bank and non-bank players.
- › Central banks are driving the deployment of electronic acquiring devices and are working on delivering an enabling regulatory framework to incentivise the adoption of electronic payments thereby reducing the usage/dependence of cash.
- › Adoption of the Bank of International Settlement Core Principles for Payments and Financial Markets Infrastructure is high on the agenda for African Central Banks.



As one of the largest countries in the world, Brazil has taken great strides in solving the payments puzzle

Case Study: How Brazil is solving the Payments Puzzle

- › Brazil has some of the highest number of ATMs, POS terminals and cards per capita in the world.
- › Numerous countries have tried to duplicate their model and specifically the use of agency banking to grow financial inclusion.



Kenya is the leader in East Africa for mobile banking / payments and is closing the gap on Financial Inclusion

Kenya Payment Developments & Trends

- › Kenya is often referred to when looking at mobile payment models (M-Pesa), however, the non-bank lead model is now being challenged by Banks (Equity).
- › Kenya is leading the charge in closing the gap between banked and un-banked through the open mobile payments / banking models.

01



Nigeria is driving hard to become a cash-light society, with an accelerated roll-out of ATMs and POS devices to reduce the dependence on cash

Nigeria Payment Developments & Trends

- › Nigeria has recorded a significant growth in electronic payment transactions since the inception of the cash light policy in 2012 and there has been increasing adoption in the pilot states of the country. With the 3rd phase of nation-wide rollout of the policy, it is expected that electronic payments adoption will continue to show a positive growth.
- › However, the country continues to experience challenges with sustainable rollout of electronic payment channels to effectively serve a population of over 170 million citizens due to deficient power and telecommunication infrastructure.



As the country with the most advanced payments system on the continent, South Africa is actively driving down the usage of physical payment instruments

South Africa Payment Developments & Trends

- › Advanced payment and banking system.
- › High penetration of electronic payment channels.
- › Significant reduction in the use of cash and cheques.



With the number of cards in issue increasing exponentially, banks face the challenge of how to make card payments secure

Feature: Beyond PCI DSS Embedding Compliance in Banks DNA.....

- › Achieving PCI DSS certification is potentially a big step in the war against fraudsters and hackers.
- › Beyond PCI DSS (and other certifications), banks must critically evaluate and seek to improve the overall information security environment..... Compliance must be in the DNA of banks. They must seek to implement good security standards, whether or not driven by the Regulator.
- › Information security has a much broader scope, where technology is not the focus but a means to the end.



Globally regulators are getting into the business of regulating and facilitating the determination of interchange between banks

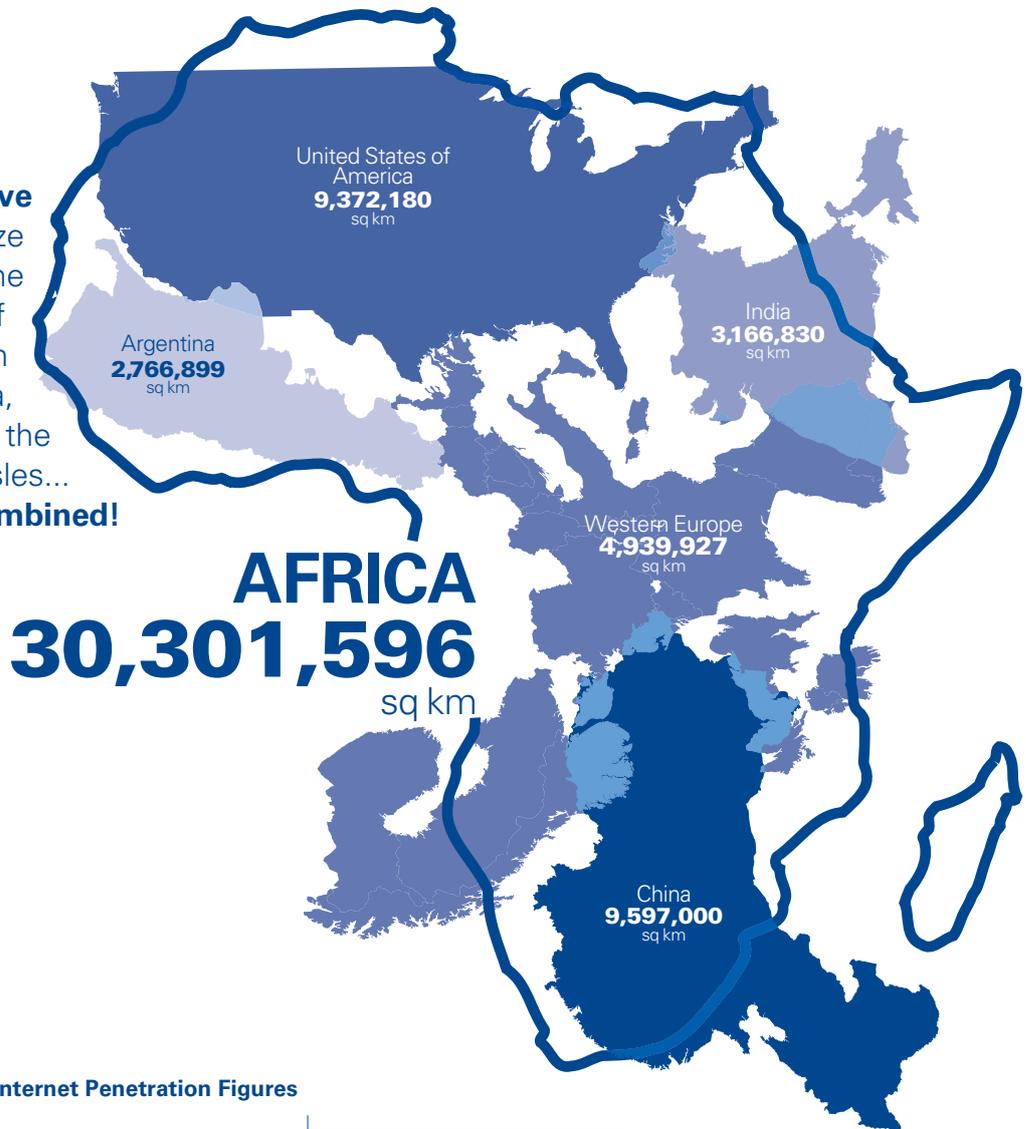
Feature: Interchange and Regulation

- › The right level of interchange is used to balance cost, risk and rewards for merchants.
- › Under Dodd-Frank Act interchange fees should be reasonable and proportional.
- › The European Commission capped interchange fees in the hope of merchants passing on their savings to consumers.
- › Under the supervision of the SARB; KPMG lead the SA industry through the complex process of determining the appropriate interchange fees. Transparency in the process leads to fair and sustainable interchange fees.

Africa Fast Facts

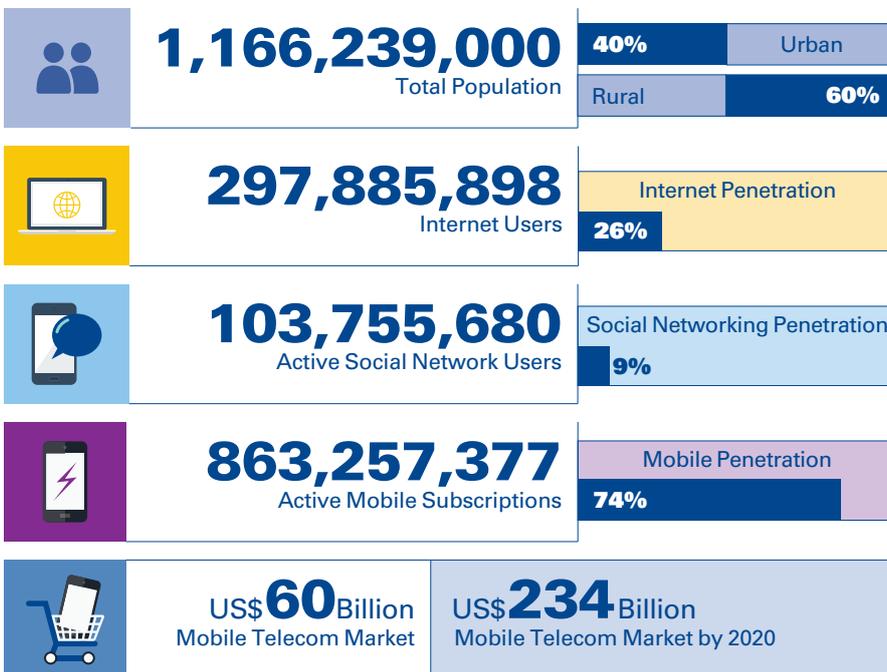
Africa in Perspective

Africa is bigger in size than China, the United States of America, Western Europe, India, Argentina and the British Isles... **combined!**



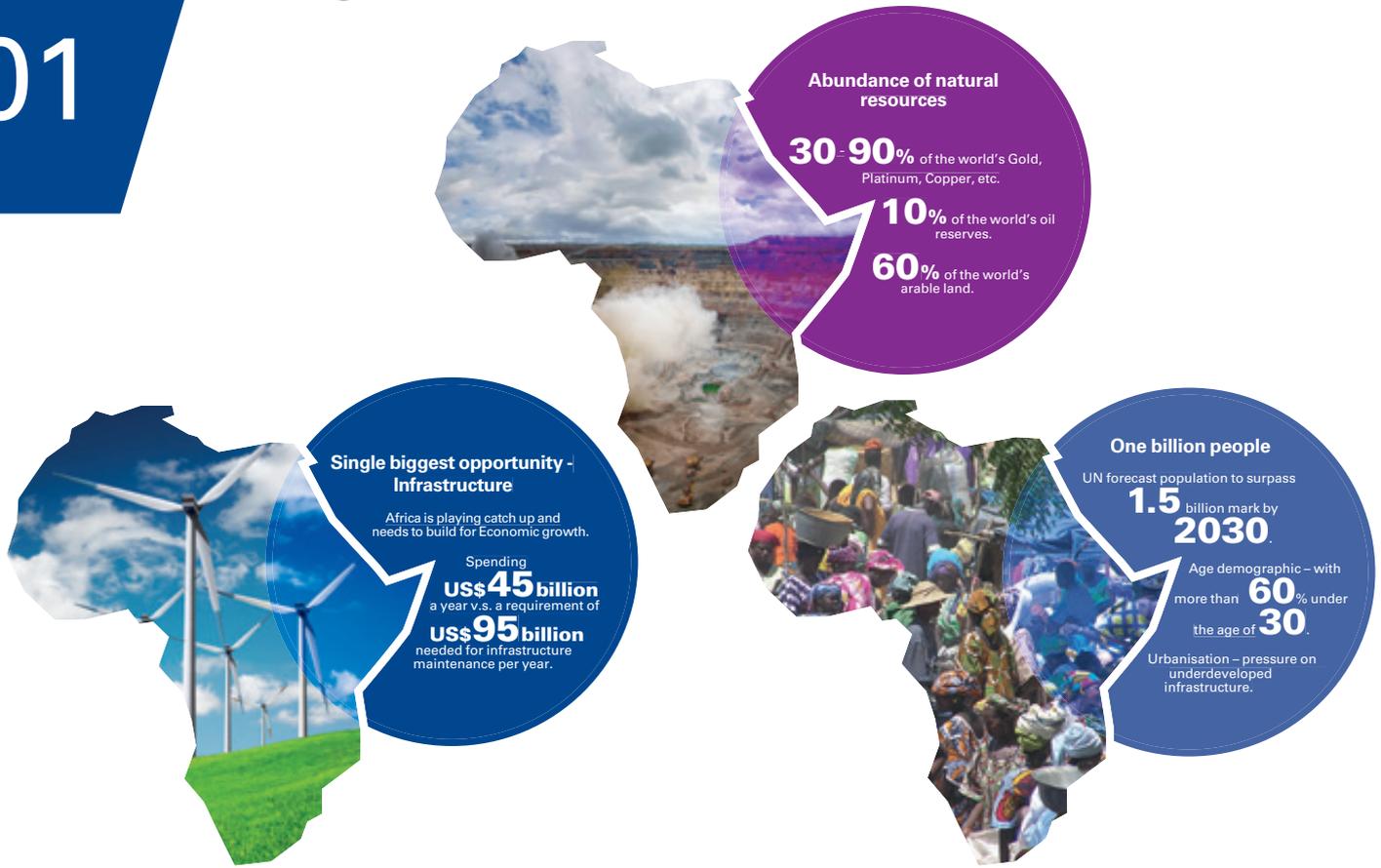
AFRICA
30,301,596
sq km

Internet Use - Regional Internet Penetration Figures



01

Megatrends



BIS Core Principles

The Bank of International Settlement (BIS), is regarded as the custodian and advisor of “best practice” to the international banking community. The division of BIS, responsible for developing and setting the best practice for payments and financial markets infrastructure, is the Committee on Payments and Settlement Systems (CPSS) and has representatives from the G20 central banks.

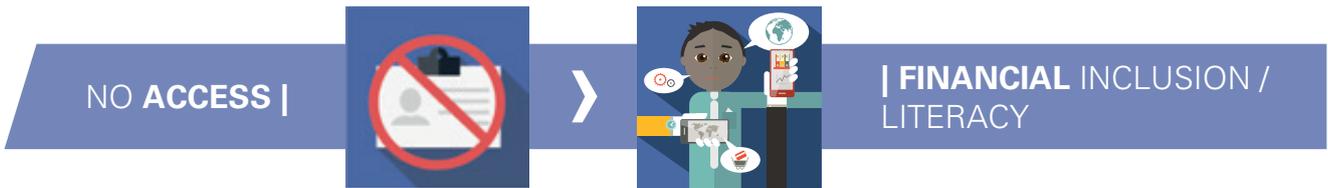
The CPSS, in January 2001, published the 14 principles that are known as the BIS Core Principles for SIPS. These are divided into 10 core principles for participants in Systemically Important Payment Systems (SIPS) and 4 responsibilities attributed to central banks in applying the core principles.

The core principles are intended for use as universal guidelines to encourage the design and operation of safer and more efficient SIPS worldwide. In emerging market economies they are particularly relevant as central banks and other market participants are in the process of improving and/or building payment systems to meet the demands for safe and efficient means of transacting and managing payments domestically, regionally and internationally.

In February 2010, the CPSS and the Technical Committee of the International Organisation of Securities Commissions (IOSCO) launched a comprehensive review of the standards in support of the Financial Services Bureaus (FSBs) broader efforts to strengthen the core financial infrastructure and markets by ensuring that gaps in international standards are identified and addressed.

The new Payments and Financial Market Infrastructure (PFMI) standards were published in April 2012, and replace all the requirements published in the BIS Core Principles for SIPS published in January 2001. Regulators and authorities in most countries are still coming to grips with the compliance requirements and are actively working towards ensuring that their individual country's national payment systems comply with the PFMI standards. The new PFMI now have 24 principles, which Financial Market Participants are required to comply with and 5 responsibilities for central banks in the oversight of PFMIs.

In examining the development of payment systems in our 3 featured countries, (Kenya, Nigeria, South Africa) we have found that central banks in each country have adopted both the 2001 and 2012 BIS Core Principles as a benchmark for the development of the NPS in their country. Each of the central banks have a National Payment System Department, who consult with market participants (banks; non-banks; mobile network operators; payment service providers; etc.) on a regular basis to ensure the safety and efficiency of the payment system. These developments apply to domestic; regional and international payments and is an important measure for the country which is used by international agencies and investors interested in doing business and/or investing in the country.



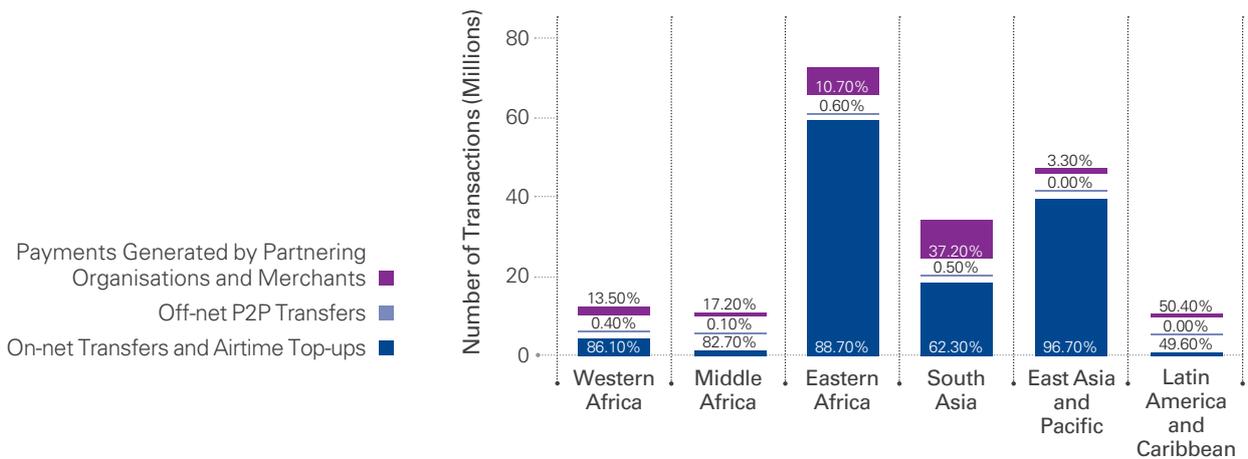
Mobile Payments

Moving away from cards to the African success story, Mobile Payments and Banking. Banks have been slow to recognise and take advantage of the opportunities created by mobile technology, leaving this space wide open to Mobile Network Operators (MNOs) to gain first mover advantage and disrupt the status-quo.

From the graphs below (volume and value), we can see that the biggest adopter of Mobile Payments is East Africa and Kenya in particular with M-Pesa and the recent entry of Equity Bank in this space.

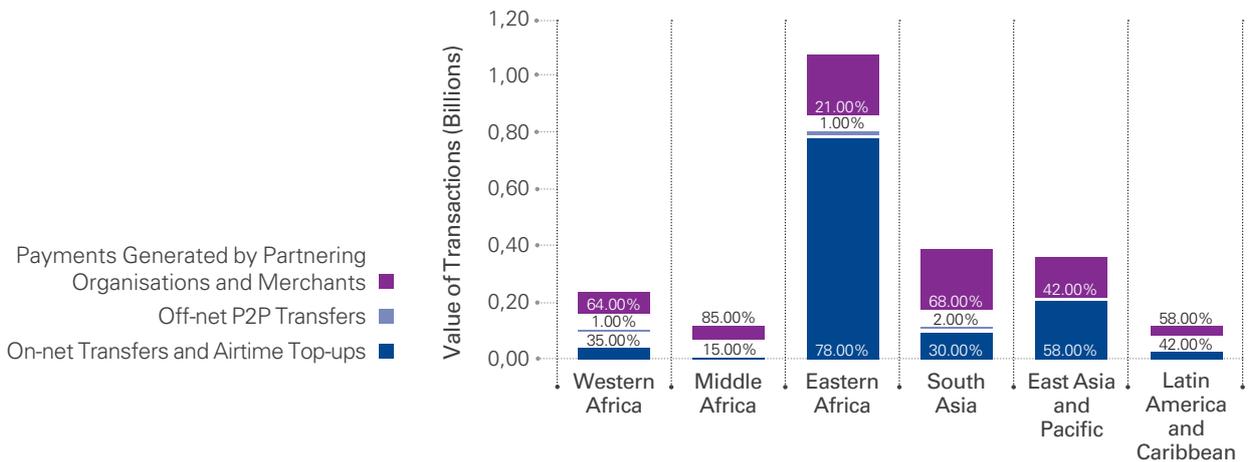
In our country segments we explore the different mobile models and the different responses of regulators to the "mobile payments revolution".

Transaction Volumes by Region 2013



Source: GSMA

Transaction Values by Region 2013



Source: GSMA

01

Fast Facts

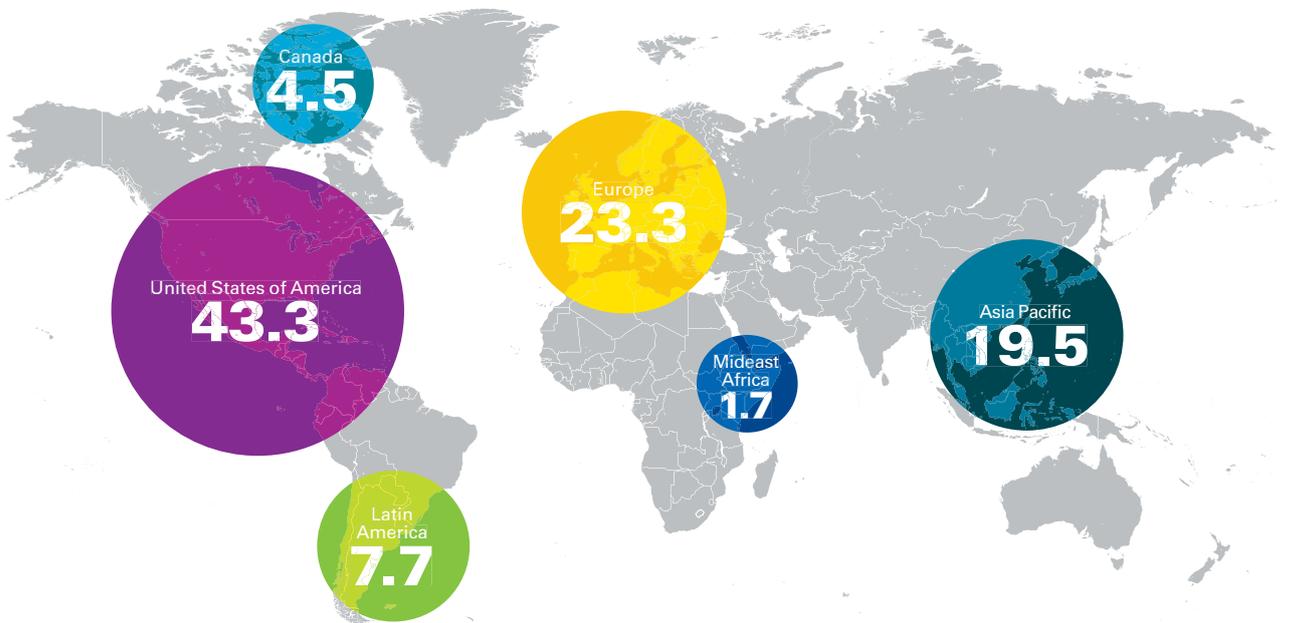
Card Transactions – Africa vs Global

The card purchase transactions for U.S., Canada, Latin America, Europe, Middle East-Africa, and Asia-Pacific are based on the 2013 numbers.

These figures have then been extrapolated to give a view of what the numbers would look like in 2023.

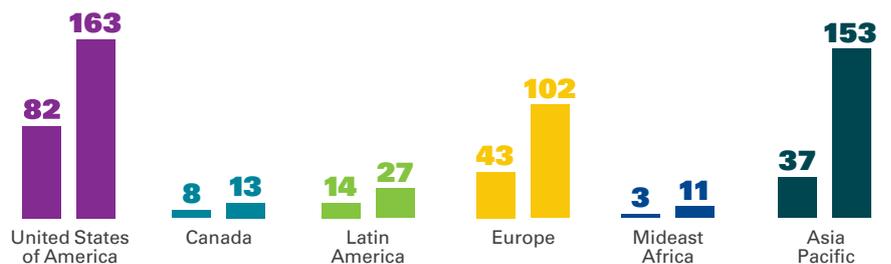
Looking at the current pace of developments on the continent and the focus by central banks; banks and non-bank financial institutions on putting infrastructure (channels) to accept cards (physical and virtual), it is anticipated that the growth in card transactions (primarily debit cards) to be much greater than the published combined (Middle East & Africa) market share of 1,7%.

Market Shares (%) in 2013

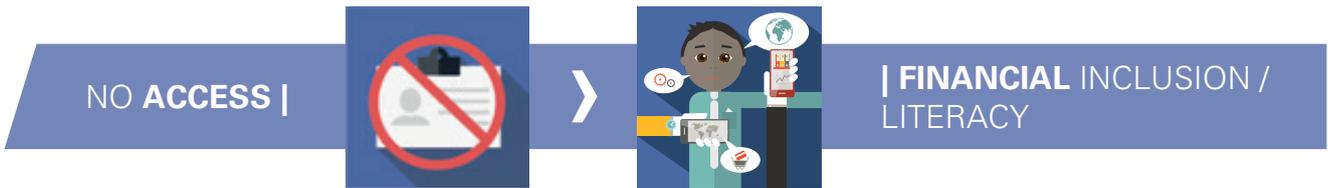


The same would be true for the value of transactions, depicted in the graph. With the focus by central banks on the reduction of cash dependence, in favour of electronic mechanisms the value of card transactions is set to increase exponentially.

Transaction Values (Billion) 2013 vs. 2023



Source: Nielsen Report



Fast Facts

While it is true that around 94% of all retail payment transactions (urban and rural) across Africa are still conducted in cash, central banks are now focusing on driving down the usage of cash and promoting electronic channels and mechanisms such as card, mobile, POS and ATM.

Most financial institutions, in conjunction with the card associations, chose cards as their first strategy to reduce the value of cash transactions by promoting the use of cards through their chosen channels (ATM, POS, Internet)

To illustrate this, we have looked at the different associations and their share of the global card market. In addition, we have also provided a view of what share (%) of global purchase transactions are done via card as well as the related transaction values.

Card Associations' Market Share (%) 2013



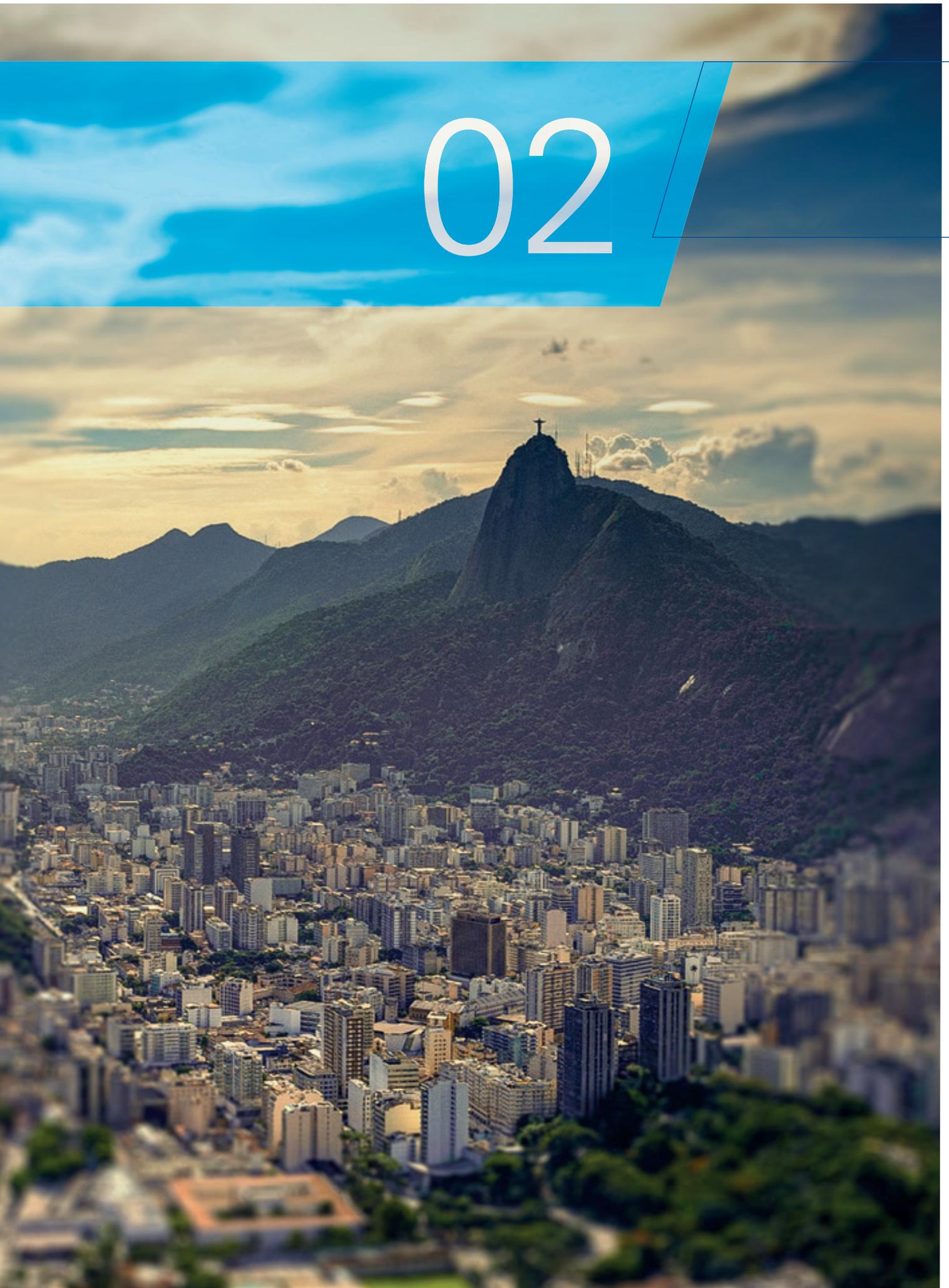
Source: Nielson Report

In as much as banks compete for client share of wallet, card schemes compete for their brand on the plastic issued. In the study done by "The Nielson Report in 2012" we see the market share, world wide, of the primary card issuers (Amex; Diners; JCB; MasterCard; UnionPay & Visa).

The shift in the balance from the previous market dominators, MasterCard and Visa, is beginning to happen as new entrants like UnionPay challenge the status quo. In the period 2012 to 2013 Visa showed the biggest drop in market share, from 62,1% to 60,5% and UnionPay showed the biggest increase from 6,0% to 7,7%.

We have seen a greater presence of UnionPay on the continent and it will be interesting to watch as the card schemes battle it out for Africa's card business.

02



Case Study

How Brazil is Solving the Payments Puzzle

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- 01| Payments Journey
- 02| Payments Moving from Physical to Electronic
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01| Payments Journey

The big question is how Brazil is solving the payments puzzle and becoming known as one of the worlds most technologically advanced payment systems in the world?

Although their payment system is still behind Europe and Asia in some areas, they are well ahead of most Africa countries. The World Bank has singled the system out, with research papers describing its “efficient, highly automated payment system”. It is all the more impressive when one considers that the country with 203 million people (5th largest in the world), has large remote areas (5th largest country in the world), including the Amazon, a significant number of paper transactions, especially cheques, and has low interoperability between ATM and point-of-sale (POS) networks. Most of these points are very similar to the situation in African countries which is why Brazil was selected as a case study. Despite the fact that the Brazil payment system still face various challenges, for example financial inclusion, reliance on banking via branches and high cash handling fees, there are various positives and we will explore whether the same model could be replicated on the African continent.

From the 1970s to the 1990s, Brazil, like many other countries, relied on its public banks to provide outreach. The first drive to improve the efficiency of the payments system really stems in large part from Brazil’s stressful economic history. Brazil had massive hyperinflation in the 1980s and early 1990s, with a peak at close to 2000%. A stabilisation plan put in place during 1994 has brought inflation down and banks started to expand their braches to deepen their deposit base. Infrastructure investment made during the hyperinflation period was aimed at enhancing the speed of processing financial transactions and this

proved to be of great value to the Brazilian payment system.

After this period the Central Bank of Brazil (BCB) and National Monetary Council (CMN) started concentrating on reducing risk and accelerating electronic payments even more. To do this they focused on the Bank for International Settlement (BIS) and Committee on Payments and Settlement Systems (CPSS) for guidance. A CMN resolution of 2001 allowed the BCB to regulate, authorise and oversee all Brazilian interbank clearing and settlement systems, regardless of volume, value and the type of transactions processed. There has been numerous reforms and initiatives by the BCB including the implementation of a RTGS system, known as the Reserves Transfer System (STR). With all the developments, Brazil now has a national payment system with the following key features:

- › All large-value (above \$200) fund transfers are settled in same day funds, typically within a few minutes after initiation.
- › Securities and settlement systems provide relatively short settlement cycles (e.g. real time or T+1 for government securities).
- › All clearing and settlement systems settle in central bank money.
- › Delivery versus Payment (DVP) is observed in all securities settlement systems.
- › Straight through processing is extensively used in all payment and securities settlement systems.

02

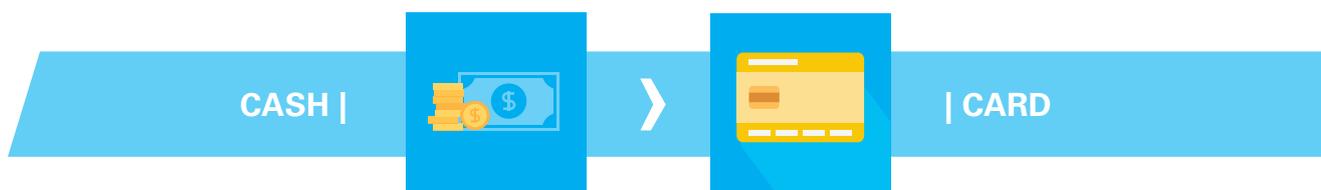
The table below summarises the Brazilian clearing and settlement service providers:

Entity	Ownership	Systems Operated	Main items cleared / settled	Clearing Cycles
CIP – Interbank Payment Clearinghouse	Domestic Banks	Funds Transfer System (SITRAF)	Credit transfers	97% of transactions cleared in less than one minute
		Deferred Settlement System for Interbank Credit Orders (SILOC)	Credit transfers and Interbank payments related to some card schemes	Same day or T+1 depending on time and type of transaction
Banco do Brasil	Federal government and several domestic and foreign investors (Government Controlled)	Cheque Clearinghouse (COMPE)	Cheques	T+1
CETIP S.A. – Organised OTC Market	Several domestic and foreign investors	OTC Clearinghouse	Corporate bonds and OTC derivatives	T or T+1 depending on time and type of transaction
BM & FBOVESPA	Several domestic and foreign investors (Public Company)	FX Clearinghouse	Interbank foreign exchange transactions	T, T+1 or T+2 as counterparties choose. Mainly T+2
		Equity and Corporate Bond Clearinghouse	Equities and corporate bonds	Bonds T or T+1 depending on time
		Debt Securities Clearinghouse	Government securities	Mainly T or T+1 depending on time
		Derivatives Clearinghouse	Mainly exchange-traded derivatives	T+1

02| Payments Moving from Physical to Electronic

There are four key areas that Brazil has excelled in that contributed in improving the national payment system. These areas are the roll out of ATMs, deployment of POS terminals, issuing of cards and agency banking. A comparison is made with the three featured African countries and a synopsis on how Brazil managed to do this.





A. ATMs

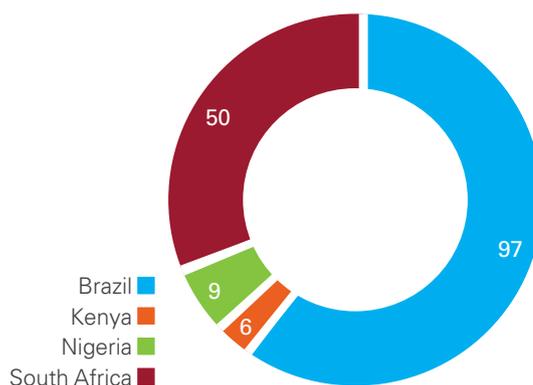
Brazil has one of the largest ATM networks in the world with 195,908 ATMs by the end of 2013 according to the BIS. As illustrated in the pie graph, that is 97 ATMs per 100,00 people, almost double the number in South Africa and more than 10 times that of Kenya and Nigeria.

ATM cash withdrawal volumes in Brazil have not grown much over the period 2009 to 2013 as illustrated by the line graph (on the next page). The main reason for this is the increased use of card payments depicted in the same graph. However, there continues to be an increase in the additional ATM services used by customers in Brazil.

The ATM market in Brazil is primarily dominated by a few major banks. Brazil does not have a national interbank network that connects all the banks and allow customers to use any ATM irrespective of their issuer (i.e. nationwide interoperable system).

However, there are banks that have formed several partnerships through bilateral agreements to extend their coverage and these are usually indicated on the ATM itself. The most notable 3rd party ATM provider connecting banks through their Switch Interbancos platform is Banco24Horas, that is operated by Tecnologia Bancária S.A (TecBan) and owned by several Brazilian banks. TecBan is a non-profit organisation that connects over 40 banks and operates its own terminals and the proprietary ATM networks of participating banks, as well as outsourcing services for the terminals of a few banks.

ATMs per 100 000 people in 2013



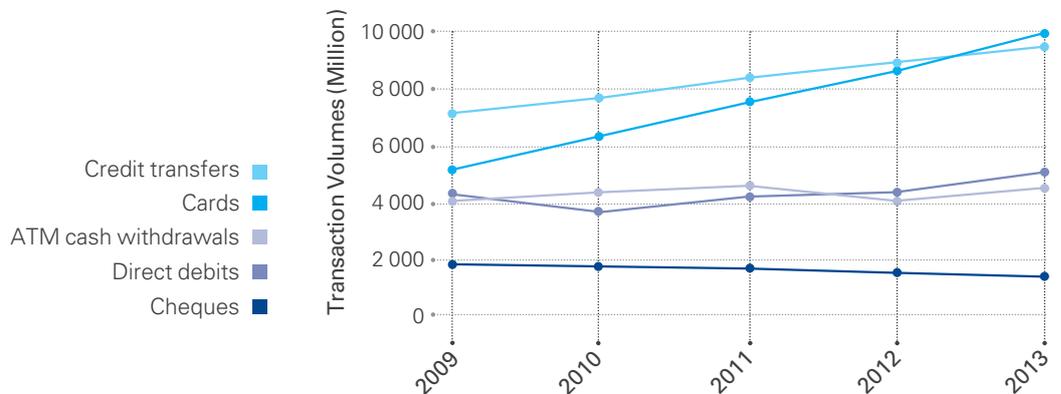
Source: Bank of International Settlement (BIS)

ATMs continue to expand in Brazil and this can be attributable to a number of factors, including:

- › Historically the lack of interoperability has forced banks to expand their ATM networks in order to satisfy their clients demands and also gain market share of the large unbanked population in Brazil. TecBan is changing this by continuing to grow their bank connectivity thereby growing the number of interoperable ATMs.
- › Functionality offered by some ATMs in Brazil is extensive when compared to other countries. In addition to traditional services (i.e. deposits, cash withdrawals, balance enquiries, fund transfers etc.), some ATMs also offer bill & tax payments, cheque issuance, credit applications, and even insurance sales.

02

Annual Transaction Volumes (2009 - 2013)



Source: Bank of International Settlement (BIS)

Although there is much to learn from the way Brazil expanded their ATM network and security features (e.g. multi-biometry – finger & palm), the lack of interoperability is not best practice and has led to overlapping coverage, inefficiencies, higher operational cost and inconvenience to customers who have to travel long distances for basic banking services. Africa countries have mostly opted to strive for interoperability across the ATM networks thereby obtaining economies of scale and expanding the use of ATM services to all their citizens.

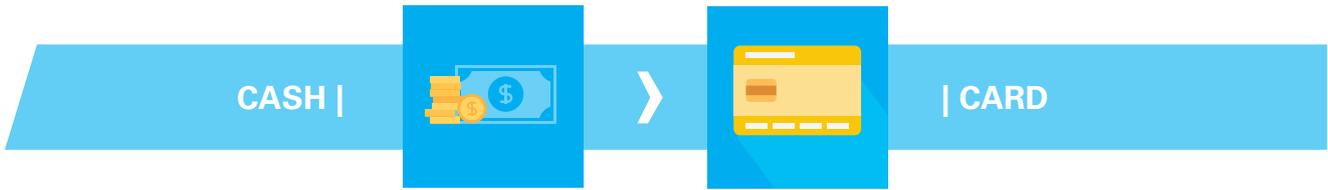
B. POS Terminals

By the end of 2013 Brazil had almost 4.5 million POS terminals deployed in the country according to the BIS, 2,205 per 100,000 people as demonstrated in the pie graph and the second largest acquiring market in the world, by revenue.

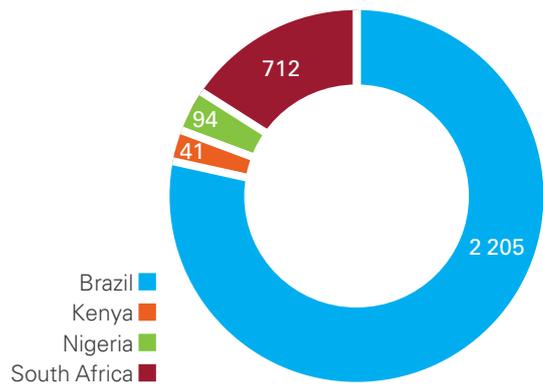
Similar to ATMs, historically Brazil had no interoperability on their POS terminals, with Visanet (now Cielo) processing Visa transactions and Redecard processing MasterCard transactions. The BCB, Ministry of Finance and Ministry of Justice conducted a study called the “Report on the Brazilian Payment Card Industry” that showed potential anti-competitive aspects in the payment card industry. Because of this study, Visanet and Redecard agreed to end acquiring exclusivity for Visa and MasterCard transactions from 2010 onwards. This has resulted in new players entering the market such as Banco Santander (GetNet), Elavon and Global Payments. However, the acquiring market remains firmly in control of Cielo and Redecard with a combined market share of around 90%.

The number of POS terminals in Brazil increased by 46% from 2009 to 2013 and this could be attributable to the following:

- › With the lack of interoperability in the past and the large number of MasterCard and Visa cards issued, merchants had no option but to deploy both Visanet and RedeCard terminals.
- › The lack of contestability in the card acquiring business has allowed Visanet and Redecard to dominate the acquiring market and make significant revenues. The two main sources of revenue for acquirers comes from the merchant service charge and the fact that it takes on average 30 days in a credit card transaction until the merchant is paid, allowing the acquirer to negotiate a discount percentage with their merchant for earlier settlement. The Report on the Brazilian Payment Card Industry indicated that profits in the acquiring business increased more than 300% from 2003 to 2007.



POS terminals per 100 000 people in 2013



Source: Bank of International Settlement (BIS)

C. Cards

By the end of 2013 Brazil had a total of 824 million cards (excluding retailer cards) according to the BIS. That is 409,904 cards per 100,000 people and about 4 cards per capita.

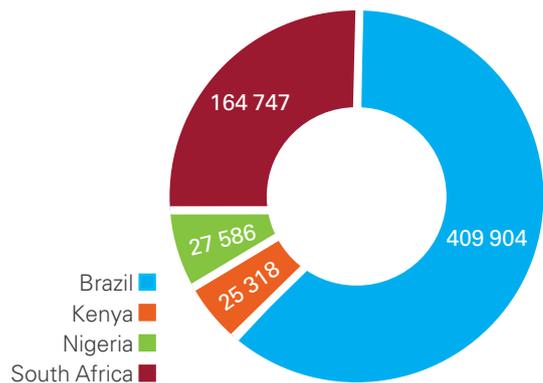
South Africa is the only other focus country that also had more cards in issue than citizens. Kenya and Nigeria average about 1 card for every 4 citizens.

Card transaction volumes have been growing at an average of 18% per year from 2009 to 2013 as illustrated in the line-graph. The majority of cards issued in Brazil include Visa, MasterCard, Cheque Eletrônico (local debit card), American Express, Hipercard and Diners. Retailer cards are issued

mainly by large retailers and can be used only at the shops of the sponsoring group, i.e. as an in-store credit card.

Various different approaches are used for interbank settlement, as there is no central system for all payment cards. MasterCard settles participating banks' net positions through SILOC, while banks in the Visa scheme settle obligations arising from card payments in SITRAF.

Cards per 100 000 people in 2013



Source: Bank of International Settlement (BIS)

02

The number of payment cards issued over the years showed impressive growth numbers and some of the key reasons for this include the following:

- › Banks heavily promoted their own scheme cards due to the lack of interoperability and the fact that some of them also had shares in Visanet and Redecard, therefore almost running a closed-loop system before 2010.
- › The national banks' strategy followed was to replace the local debit arrangement (Cheque Eletrônico) by Visa and MasterCard debit arrangements. Although the Cheque Eletrônico offered lower fees to the users and was therefore socially better, the banks opted for the replacement due to the absence of interoperability, as well as the fact that issuing banks had larger gains in the Visa and MasterCard arrangements due to the higher interchange fees received when compared to the Cheque Eletrônico.
- › The pure size of the population and increasing demand for cards by consumers as a result of the financial services it offered (i.e. through ATMs and POS terminals), contributed to the growth.
- › More lately, growth in the middle class has resulted in a need for credit and this has presented significant growth in credit card numbers.

D. Agency Banking

Bank outsourcing and correspondents have been common in Brazil since the 1970s. Prior to 1999, the following services could be outsourced to agents: receiving loan applications, analysing credit and personal information of loan applicants, collecting loan payments and processing data. In 1999, the BCB revised the framework for bank agents, permitting them to open accounts and accept withdrawals, deposits and bill payments. In the same year, Caixa Econômica Federal, a state-owned bank, partnered with more than 9,000 lottery outlets in what became the first large-scale

retail agent scheme in the country focusing mainly on bill payments.

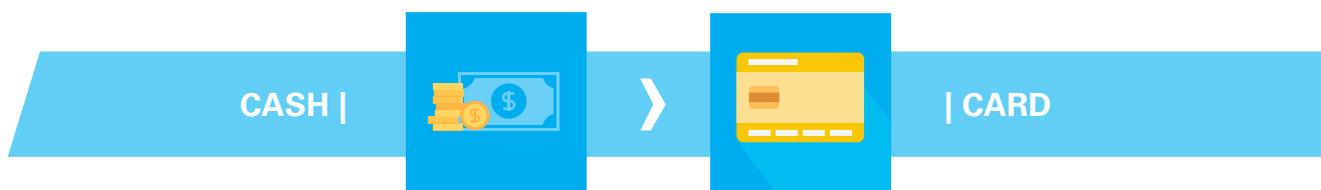
Further regulatory changes in 2000 removed the prohibition on banks using agents in locations with bank branches. Caixa responded and quickly covered all 5,564 municipalities in the country, signing up other retail agents beyond lottery outlets. New regulations were issued in 2003 as part of the government's financial inclusion policy, permitting any financial institution to hire any type of agent.

By the end of 2013 Brazil had more than 400,000 banking correspondents (according to the BIS) throughout the country delivering financial services on behalf of BCB-licensed and supervised entities, including credit cooperatives. Bradesco is the largest private bank in Brazil and also has the most correspondents, holding a 27% market share, compared to 19% for Caixa based on a BCB presentation. In 2001 Bradesco won a public bid from the Brazilian Post Office that gave it exclusive access to 5,300 of the country's 10,500 post offices.

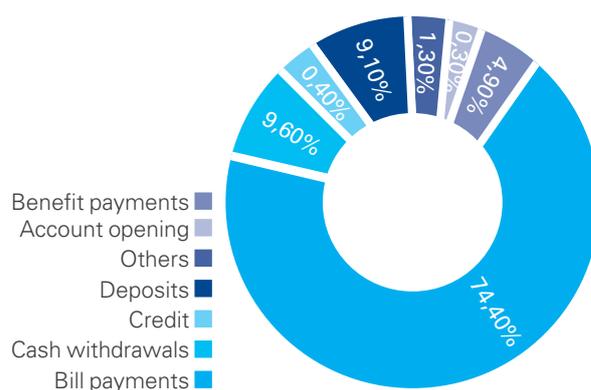
A BCB presentation on agent banking and Brazilian financial inclusion indicated that most agents specialise in receiving bill payments, which account for approximately 74% of all agent transactions as illustrated in the pie graph. Cash withdrawals and deposits make up the majority of the remaining transactions with 9.6% and 9.1% respectively.

The use of agency banking in Brazil has a very positive impact on the economy for the following reasons:

- › **Expanding geographic coverage.** The agent model has brought convenience and safety to low-income families that receive government benefits and other basic bank services. By piggybacking on existing retail infrastructure, agent networks were used to expand coverage. Some rural populations that previously did not have access to financial services or depended on long bus trips to reach the closest branch could now carry out basic transactions in their neighborhood.
- › **Existence of synergies** between the store's existing business and the new agent business that generated additional foot traffic and triggered additional sales. Many stores in Brazil reported up to 30% increase in sales because of their newly offered banking agent service.
- › **Payment system efficiencies.** Banks began outsourcing numerous services to the agents rather than developing such expertise in-house, that is not a core activity for a financial institution. Some of the services include setting up, and training individual agents; monitoring the technical platform and each store's POS devices and providing technical support when a POS terminal breaks down (POS field service); checking cash levels at each point; and following up on agents that have reached their cash limit but have not deposited funds at the branch. This ultimately leads to a more efficient payment system with specialisation and less operational costs.



2013: Agent Banking Provided Services



Source: Agent Banking and Brazilian Financial Inclusion - BCB

03 | Conclusion

There is much to learn from the Brazilian study, especially the way in which they have started solving the migration from cash to card and more specifically the agent banking model to start addressing the issues of banking the unbanked and driving financial inclusion. In this regard some of the key regulatory interventions, apart from the allowance of agency banking, is the promotion of interoperability on the card payment system.

In 2013, further steps were taken by ending the Brazilian card industry self-regulation system after a law was passed to nominate BCB as the regulator. A new framework was issued and the Brazilian government is now focused on promoting among others: financial inclusion, competition, innovation, reliability of the system and the interoperability of payment networks. It will be interesting to follow the developments and see how these changes impact the Brazil payment system.

As seen on the African continent mobile payments continue to present a significant opportunity market in Brazil. While there are a number of mobile payment and/or banking solutions being explored, which aim to further the requirements of serving the underbanked population and promoting financial inclusion, to date no big market player and/or solution has presented it's self in the Brazilian payments industry. Conversely, the African continent has embraced mobile banking and/or payments and we have seen a number of successful mobile banking/payment schemes deployed on the continent.

In summary, the key learnings from the Brazilian study, which Africa could leverage and/or learn from are:

Positives

- › The roll-out of channels such as ATM's and POS devices into urban and rural areas to address the unbanked market and promote financial inclusion;
- › Driving the usage of cards, to do purchase transactions, rather than using cash; and
- › The use of the agent banking network to offer basic banking services at remote locations.

Negatives

- › The absence of a national switch, for ATM and POS devices, has lead to a lower degree of interoperability across all bank devices and this adds to customers being inconvenienced and higher cost of transacting;
- › While there is a large agent banking network, the distribution needs to be more focused in the rural areas and the costs of transacting is too high; and
- › There is no clear leader of mobile banking/payment solutions, which limits the progression of financial inclusion and banking the un-banked.

03

NPS is safe to use

NPS is efficient

A National Payment System (NPS) encompasses all payment related activities; Processes; Mechanisms; Infrastructure; Institutions and Users

NPS Lays the Foundation for Financial Inclusion

Kenya

Country Overview & Payments Profile

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01| Payments Journey and Key Trends

The Payments Journey

Kenya is quickly moving to a cash-light society. The payments ecosystem has evolved over the last three decades to be a pace setter in East Africa. The first card payment instrument, in support of the “cash-light” aspirations of Kenya, took off in 1980 with the introduction of debit cards.

In 2014, Kenyan banks became EMV compliant, a move that is aimed at reducing card fraud globally. Kenya became one of a handful of African countries (e.g. Nigeria, Namibia, South Africa, etc.) to implement the international standard. Interbank electronic transfers were introduced in 2005 that created a platform for innovation across the payment system.

Other key frameworks that have contributed to the evolving payment ecosystem include: ATM payments introduced in 1994, Mobile Money in 2007, Online Payments in 2010, Internet Banking, Mobile Banking and Cheque Truncation in 2011.

The modernisation of Kenya’s payments system began with the Automation of the Nairobi Clearing House in 1998 with the aim of enhancing the clearing of cheques between banks using Magnetic Ink Character Recognition (MICR) technology and Electronic Funds Transfer (EFT) payments. The result of this policy shift was the reduction of clearing time from fourteen to three days.

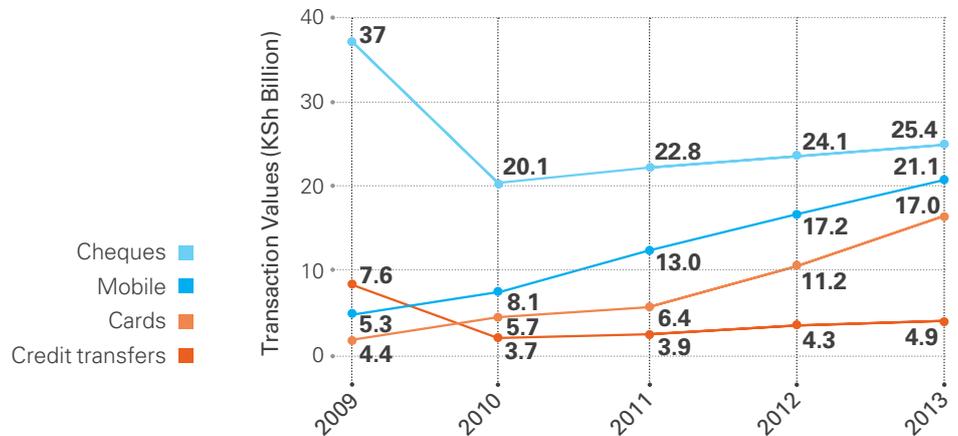
The second and third milestones in this modernisation process were the successful launch of the Kenya National Payments System Framework and Strategy Document in September 2004 and in July 2005 the Real-Time Gross Settlement System (RTGS) of Kenya, namely the Kenya Electronic Payments and Settlement System (KEPSS).

The KEPSS implementation helped phase out the previous paper-based inter-bank settlement system, in line with the BIS (Bank of International Settlements) Core Principles for Systemically Important Payment Systems, and completely transformed the management of liquidity in the banking industry.

In 2008, the Central Bank of Kenya (CBK) in conjunction with Kenya Bankers Association (KBA) initiated other modernisation programs. Cheque Truncation was implemented in 2013 and adopted across the banking sector, the truncation process is initiated at the branch level. However, fraud continues to be a key challenge for cheque payments and banks have had to bear additional costs in the implementation of the new system.

03

Annual Transaction Values (2009 – 2013)



Source: Central Bank of Kenya

Looking at the shift in values of the different payment streams, we see that the cheque values have shown a decrease in 2010, however this changed with a steady rise in cheque values from 2011.

On the other hand, mobile payments have shown a significant rise since 2009 and the values are tracking ever closer to those of cheques.

With more people receiving banking cards the values in card payments have been rising from 2011.

This leads to the understanding that:

- » 75% of the total number payments transactions in Kenya in 2014 were conducted through mobile. This can mainly be attributed to the increased popularity of M-Pesa. M-Pesa is currently used by over 17 Million Kenyans, equivalent to more than two - thirds of the adult population. About 25% of Kenya’s gross national product flows through M-Pesa.
- » Card transactions which include ATM cards, Prepaid cards, Credit cards and Debit Cards is the second most popular mode of payments. The number of card transactions reduced slightly in 2014.
- » The cheque transactions accounted for 8% of the transaction value in 2014.





The CBK issued a directive which stipulated that all bank's acquiring devices (ATM & POS) must be EMV compliant by September 2013.

According to KBA, Kenyan banks successfully certified their ATMs in August 2014 and their POS devices in December 2013.

For banks the final stage, and arguably the most complex, has been the EMV certification of Card Management Systems and replacement of magnetic stripe debit and credit cards with chip enabled cards. KBA notes that over 70% of Kenyan Banks have complied.

Moving to mobile-money, it is recorded that Kenyans transacted more than KSh1.7 trillion on their mobile phones in the first 11 months of 2013, surpassing the value of the country's budget this financial year. This represents a 23.7% increase from KSh1.4 trillion in the same period in 2012.

However, M-Pesa's domination of the mobile-payments market has been challenged by Equity Bank. Equity Bank launched their MVNO (Mobile Virtual Network Operator) product, in cooperation with Airtel, in July 2014 to their existing bank client base of 8,7 million.

A new development in Kenya is the cashless public transport system, which presents key payment benefits for both the consumer and the providers. For the consumers, it means a more regulated public transport sector and may have a direct impact on quality of services. For Government, the system will tackle corruption and tax evasion in the public transport sector, and allow for better regulation. For operators, it may even lead to increased revenues for the operators themselves. If the system is successfully implemented, it would boost the Kenyan peoples confidence in electronic transactions, and go a long way to reducing the amount of cash in circulation.

According to a study conducted in 2014, OLX topped the list of sites that **Kenyans have searched for most on Google during the year**. The top searched items on OLX that made the site a darling to many Kenyans include vehicles, houses, furniture, electronics (mobile phones and TVs) and baby items.

With the rising internet penetration powered by lower costs of broadband and affordable smart-phones, the growth of the e-commerce industry in the country and Africa can only expect to be accelerated.

OLX intends to play a key role in future innovations as it seeks to cement its position in the Kenyan market.



03

01.1 | Digital Commerce

According to the Communication Authority of Kenya (CAK), e-commerce remains relatively low in Kenya despite good internet connectivity and high uptake of mobile payment services.

The CAK identified some factors that it says stifle uptake of e-commerce, namely:

- › High custom duty and taxes paid on imports,
- › Inadequate cybersecurity systems to allow merchants verify the identity of their customers and manage potential fraudulent usage; and
- › A lack of reliable, low-cost delivery services and system to enable consumers return unwanted or defective items.

The CAK estimates the value of e-commerce in Kenya at KSh4.3 billion compared to South Africa's KSh54 billion while in Egypt and Morocco it is about KSh17 billion and KSh9.6 billion respectively. The total duty and tax paid for incoming items amounts to almost 50% of the value of an item.

These are some of the areas that need to be addressed to increase the uptake of e-commerce in the country.

The authority through the Information Communications and Technology (ICT) ministry will be engaging the government on customs and taxes for low valued e-commerce items, with a view of lowering the duties and taxes currently charged.

Looking at the improved internet connectivity, this resulted in an increase of the number of users to 22.3 million in 2014.

The increased numbers and preference by the youths to access information on their mobile phones has opened a window for investors in the retail industry such as Bata, newspaper and book publishers as well as in the hospitality industry such as fast food outlets to leverage on technology to drive increased sales and customer loyalty.

02 | Evolution of the Kenyan Payments Regulations

The Central Bank's overall objective is to formulate and implement such policies as to best promote the establishment, regulation and supervision of efficient, effective payment, clearing and settlement systems. In this regard, Central Bank seeks to ensure that payment systems do not generate high level of risk to participants and users of financial services and have the necessary regulatory legal framework.

The CBK works with the KBA, the umbrella body of the commercial banks licenced under the Banking Act, with a current membership of 44 banks in developing the financial services sector. The Association works closely with the Regulator to ensure that Government initiatives and policies are implemented smoothly.

Under this partnership, the KBA and the CBK have been able to implement key milestone projects such as the Real Time Gross Settlement System (RTGS), and the currency centre projects.

The implementation of mobile money in Kenya has highlighted the overlapping regulation needs by both the CBK and the CAK. However, the CBK is the overall oversight authority for payments.





02.1 | Evolution of the Kenyan Payments & Regulations

<1999	2000 – 2003	2004 – 2005	2006 – 2008
<ul style="list-style-type: none"> › 1998 – Full automation of the Nairobi Clearing House. › 1999 – Evidence Act amended to provide for electronic documents. › 1999 – Two Session clearing introduced. 	<ul style="list-style-type: none"> › 2002 – Establishment of the National Payments System Committee. › 2002 – Electronic Funds Transfer (EFT) Bill. › 2002 – Information Technology Bill 2002. › 2002 – Adoption of the UNCITRAL Model Law on E-Commerce and E-Systems. › 2002 – One day High Value Clearing. › 2002 – Direct Debit introduced. › 2002 – Electronic transmission of data at the Clearing House. › 2002 – KenSwitch goes live. 	<ul style="list-style-type: none"> › 2004 – Foreign clearing goes live. › 2004 – Payments Framework & Strategy Document. › 2004 – National Payments System and Electronic Funds Transfer Bills tabled in Parliament. › 2004 – Amendment of the Bills of Exchange Act CAP 27, to facilitate Cheque Truncation System (CTS). › 2005 – KEPSS/ RTGS Implementation. 	<ul style="list-style-type: none"> › 2006 – Approval of the Policy Framework for Oversight of Payment Systems in Kenya. › 2006 – Review the draft NPS and EFT Bills. › 2006 – Development of the Master Repurchase Agreement and the Intra-day Liquidity Facility agreements. › 2007 – Policy for retail payments. › 2007 – Enactment of Kenya Communications Amendment ACT 2007. › 2007 – Introduction of M-Pesa.
2009 – 2010	2011 – 2012	2013	2014
<ul style="list-style-type: none"> › 2009 – Introduction of Value Capping Policy › 2009 – Proposed Mobile Payment Systems (ZAIN, ECONET). › 2009 – Regional Cross-border payment systems (COMESA Regional Payment and Settlement System. (REPSS) East Africa Payment System (EAPS)). › 2010 – Drafting of the NPS Act. › 2010 – Proceeds of Crime & Anti-Money Laundering Act of 2009. 	<ul style="list-style-type: none"> › 2011 – Draft regulations and guidelines for the retail payments sub-sector (Mobile Money and Electronic Money). › 2011 – Implementation of the Cheque Truncation System (CTS) to ensure clearing of cheques in T+2 cycle. › 2012 – Enactment of the NPS Act. › 2012 – Kenya Deposit Protection Act was enacted . 	<ul style="list-style-type: none"> › 2013 – Operationalisations of the NPS Act 2011 by drafting the National Payment System Regulations. › 2013 – Finalisation of system integration between Kenya Revenue Authority’s Common Cash Receiving System (CCRS), the Central Bank back office T24 System and KEPSS. › 2013 – Exploration on modalities of clearing cheques in a T + 1 cycle . 	<ul style="list-style-type: none"> › 2014 – Launch of the East Africa Payment System (EAPS)). › 2014 – Operationalisation of the NPS Act. › 2014 – Drafting of the NPS regulations. › 2014 – Piloting of the internet banking functionality by CBK.

03

02.2| Current Legal Framework, covering payments

The Kenyan NPS is governed by the following regulations:

1. Central Bank of Kenya Act

- » Mandates the Central Bank to create enabling legal framework & policy in respect of payments.
- » Is the substantive law governing international remittances.

2. National Payments System Act, 2011

- » The National Payment System Act (2011) and legislative supplements 2014, designed and enforced by the CBK to regulate the payment service providers.

3. Proceeds of Crime & Anti Money Laundering Act 2009

- » Is the substantive law on AML.

4. Kenya Information & Communications Act

- » Is the substantive law governing electronic transactions (borrowing from the 2001 UNCITRAL model law on electronic commerce).
- » Non-bank providers of retail transfers are regulated under this law.

5. Competition Act, 2011

- » Is the substantive law on competition, consumer protection and fair market practices.

6. International best practices

- » Committee on Payments and Settlement Systems.
- » FATF recommendations.

7. Other key policies, laws and regulations for payments:

- » Kenya Electronic Payment and Settlement System (KEPSS) policies & procedures.
- » CBK Guidelines on Agency Banking 2010.
- » Consumer protection guidelines 2010, for the telecoms sector issued by the telecoms regulator, Communications Commission of Kenya (CCK).
- » Retail Transfer Regulations 2011 issued by CBK, referred to as the "e-regs" which is a set of comprehensive regulations for all e-money providers.
- » Money remittance regulations 2013 which subjects money remittance providers to enhance Anti-Money Laundering and Financing of Terrorism standards.

03| Systems and Operators

03.1| Settlement Systems

In line with the BIS Core Principles, the CBK have fully incorporated the 14 principles for payment system modernisation into their RTGS system KEPSS.

The key components:

- » Legal certainty in settlement, which incorporates legally binding agreements between banks and CBK
- » Settlement is final and irrevocable
- » The system is secure and always available
- » Funded in cash and/or loans backed by unencumbered assets, which are a claim against the Central Bank or the Government.

KEPSS

The KEPSS system is owned and operated by the CBK which is also a participant. The payment system enables the public to pay as well as receive large value and time-critical payments on a real-time basis.

The implementation of the system was aimed at addressing inefficiencies in the payment system that had been heavily dependent on traditional manual paper based payment methods, which include cash and cheques.

These methods are not only prone to risks of theft, cheque substitution and cheque bouncing, but are also subject to delays in the clearing process.

KEPSS is operated on a fixed schedule from Monday to Friday.

KEPSS uses three main components:

- » SWIFT including the FIN Y-Copy Service, the FIN Network and SWIFT Gateway
- » The Participant Webstation
- » The KEPSS Central System with the associated Webstation facilities at the Bank.

CASH |

| MOBILE
PAYMENTS

03.2 | Clearing Systems

The Nairobi Automated Clearing House (ACH) cheque and EFT clearing and calculation of settlement are entered into KEPSS through the Liquidity Optimising Mechanism (LOM). Payments are settled with same day value.

Transactions are processed continuously throughout the RTGS business hours. The cut-off time for RTGS payments received via the bank's Electronic Banking platforms is 13h30 and for instructions received via the bank's branch network the cut-off time is 13h00.

A. The Nairobi Automated Clearing House (ACH)

The automation of the clearing house in 1998 was a big step towards modernisation of the payments system. It aimed at enhancing the clearing of cheques between banks using Magnetic Ink Character Recognition (MICR) technology and Electronic Funds Transfer (EFT) payments.

The result of this policy shift was the reduction of clearing time from a high of fourteen to three days. This has since reduced to two days.

B. Electronic Fund Transfer

EFT operates on a deferred net settlement (DNS) basis which settles transactions in batches.

In DNS, the settlement takes place at a particular point of time. All transactions are held up till that time. EFT settlement takes place once a day.

Any transaction initiated after a designated settlement time would have to wait till the next designated settlement time.

C. Delivery Vs Payment (DVP) Clearing System

The Central Depository and Settlement Corporation (CDSC) worked together with the CBK and the Capital Market Authority (CMA) to develop a more robust cash settlement model for equities and corporate bonds. This move will improve the efficiency of settlement of equities and corporate bonds and align the process to international best practice. Effective January 2015, the cash side of the settlement process for transactions concluded on the Nairobi Securities Exchange (NSE) is done through the CBKs KEPSS system.

Settlement in KEPSS takes place simultaneously against movement of securities in the CDS accounts. CDSC employs DvP Model 2, where securities are settled in the CDS system on a gross basis (trade-for-trade processing) while funds are settled on a net basis through the settlement bank.

D. The Cheque Truncation System

The CBK and commercial banks embarked on the joint venture which sought to improve their operating systems and reduce the time taken to settle cheque payments. The venture saw the introduction of cheque truncation, an automated system that allows for interbank clearing and settlement of cheques based on electronic images.

The processing of cheques begins when the cheque is deposited by the customer into their account. If the cheque is drawn within the same bank, the process is internal. If it is from another bank, the "Presenting Bank" sends the image of the cheque to the "Paying Bank" via the Automated Clearing House.

With the new timelines (known as T+1) that took effect on 19th August 2013, the overall time it takes from cheque deposit to funds available has been reduced to approximately two to three business days.

These measures have also contributed tremendously to the significant reduction in cheque-related frauds as well as increasing the efficiency of cheque payments. Most fraud targets the manual system of clearing cheques through cheque tampering and substitution, which has significantly reduced as a result of truncation.

The implementation of cheque truncation system has delivered on improving:

- › The efficiency of the clearing process
- › Reducing the cost associated with handling physical cheques
- › Reducing the clearing period
- › Promoting access and inclusion to financial services.

E. Kenswitch

Kenswitch is a shared financial switch that comprises of a consortium of more than 20 commercial banks in Kenya, which facilitates the delivery of electronic banking services 24 hours a day, 7 days a week via the use of various delivery channels. The switch went live on December 2002 and provides Cash & Cheque Services, Bill Payments and Money Transfer Services.

Kenswitch's product and services are centralised around "switching" services which include ATM and POS.

Kenswitch has integrated its ATM system with three East African switches namely Umoja Switch (Tanzania), Interswitch (Uganda) and R-Switch (Rwanda). It's role is to manage the network of terminals; ensure correct routing of transactions; authorisations; pinmailer issuance and timely accurate clearing of settlement data.

03

03.3 | System Operators and Payment Service Providers

Payment service providers in Kenya include banks and telecommunications firms offering mobile money transfer platforms. Telecom operator, Safaricom still dominates the market.

A. Mobile Network Operators (Safaricom, Orange Money, Airtel Money and Yu Cash)

With a market share of 75.9%, Safaricom is the leading provider of converged communication solutions in Kenya. More than 17 million Kenyans use Safaricom to call on their mobile, to access broadband internet and to use the advanced Mobile money transfer and mobile banking service M-Pesa. In the mobile money space, M-Pesa competes with Orange Money, Airtel Money and Yu Cash, who have 500,000 users collectively.

B. JamboPay

JamboPay is an online payment gateway that allows users to securely make and receive payments through mobile phone over internet. Through JamboPay, shoppers can pay for goods and services online while sellers can receive payments for purchases made online. It enables users to pay for bills, fees, make donations and other payments over the internet or on mobile phone. JamboPay allows for mobile payments such as M-Pesa, Airtel Money, and Yu-Cash bank payments, Visa and MasterCard Debit and Credit cards. Using JamboPay any resident of East Africa can sell and receive payments from anywhere in the world.

C. 3G Direct Pay

3G Direct Pay is a leading online payments processor for e-commerce, providing payment solution services to hundreds of travel related businesses in East and Southern Africa, focusing on Kenya, Zambia, Tanzania, Uganda, Rwanda and Zanzibar, accepting all major credit cards, mobile money and e-wallets.

This online payments system is a leader in technology, usability and security

D. PesaPal

PesaPal provides a simple, safe and secure way for individuals and businesses to make and accept payments in Africa. PesaPal payments work on the Internet and directly on the handset. PesaPal partners with Banks, Mobile Network Operators and Credit Card companies to give consumers various payment options. For businesses, they offer settlement of payments to their bank account of choice.

E. PayPal

Paypal is a global e-commerce business allowing payments and money transfers to be made through the internet. The gateway maintains a transaction limit of US\$10 000 per transaction.

F. iPay

iPay is a global mobile and internet payment solution that also connects to banks in Kenya via the Kenswitch, a financial switching network. It serves e-payment, credit card networks, and mobile and banking transactions. It also has a re-seller and referral program for its payment solutions.

G. Banks (Mobile and e-Banking)

Most banks in Kenya have embraced mobile and e-Banking. These include I&M Bank, Equity Bank, Kenya Commercial Bank, Co-operative Bank, Standard Chartered bank and NIC Bank.

Other non-financial services players include supermarkets (Nakumatt), Google Kenya (BebaPay), Postal Corporation of Kenya (Posta Pay) and Pesapoint payment solutions.





04 | Payments Moving from Physical to Electronic

04.1 | Kenya Payments Market: Key opportunity drivers

The payments business in Kenya continues to show significant growth, specifically in mobile, and has become a key source of revenue for banks and other payment service providers.

Payments continue to move from debit-pull transactions (e.g. cheques) to credit-push transactions (e.g. mobile and EFT).

also see the gap narrowing between the banked and unbanked population. Payments are likely to be the catalyst that will drive true “Financial Inclusion” in Kenya.

Below, are some of the key payment trends that will drive not only the payments business in Kenya but

	2014	2020
Increasing Issuance of Payment Cards	<p>> 13.5 million</p> <p>Estimated number of active cards issued in Kenya as at August 2014. Expected to Grow at CAGR >24%.</p>	<p>> 52.5 million</p> <p>An estimate of 50 – 55 Million payment cards will be produced between 2014 and 2020 comprising of new issuances and renewals (due to loss, expiry, deactivation etc.)</p>
Rising Electronic Payment Adoption	<p>~ 30 million</p> <p>Non ATM transactions covering POS, Web and Mobile Payments. About 40 million if ATM is included.</p>	<p>~ 260 million</p> <p>>340 Million inclusive of ATM. Mobile payments are projected to have the fastest growth rates at over 75%.</p>
POS Deployment Target	<p>17,345 POS</p> <p>POS density in Kenya is currently <45 per 100,000 people.</p>	<p>> 154,000 POS</p> <p>Assuming a conservative target of 300 per 100,000 by 2020, POS devices in Kenya will reach 154,800.</p>

In Kenya, a number of electronic payment options are available, these include: EFTs, ATMs, cards (debit and credit) and mobile money.

Any payments, over KSh1 million are routed via the RTGS system KEPSS.

The highest volume of transactions are conducted through M-Pesa mobile money system, while the highest values are conducted through KEPSS. The physical payment options available are cash and cheques.



03

04.2 | The Physical Options

A. Use of cash

Despite all the electronic options available, it is estimated that over 90% of all financial transactions in Kenya are still cash-based. Cash is well suited for the small transactions that dominate retail payments in Kenya. This means that there is still risk in the system relating to the transportation as well as the personal risk to people carrying cash.

According to the Reja Consumer Report by Consumer Insight, despite new technologies in retail payment, Kenyans have remained faithful to traditional cash payment systems. There is a long way to go to move the economy from cash dependence to electronic transacting.

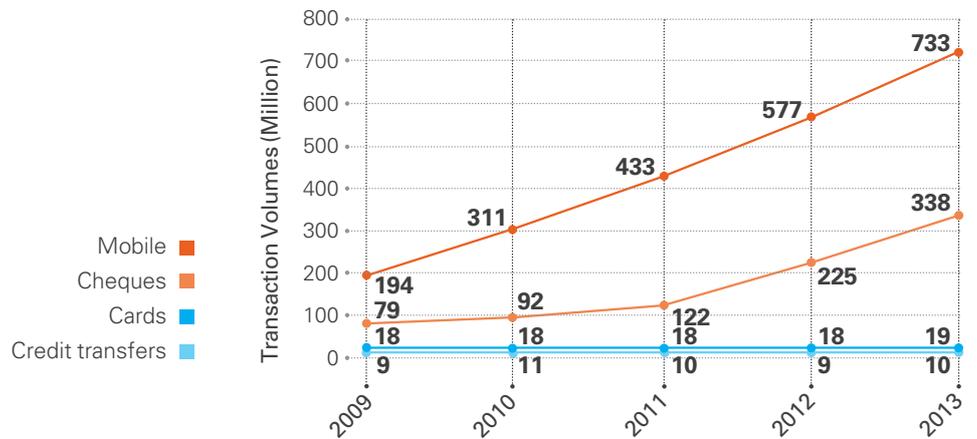
While ATMs are listed as an electronic channel, they predominantly facilitate the withdrawal of cash. Roughly 95% of transactions conducted on ATM's in Kenya are cash withdrawals.

B. Cheques

The use of cheques as a payments option has increased notable since the introduction of the cheque truncation system in 2011 as indicated in the line graph below. The cheque truncation system has delivered on improving the efficiency of the clearing process, reducing the cost associated with handling physical cheques and reducing the clearing period. While the reduction in the clearing time brings positive client experience and reduces the "open-credit-exposure" between the banks, there is still some work to be done in reducing the level of fraud and the handling / storage of the paper.

As a incentive and recognition of the cost reduction resulting from the cheque truncation, KBA waived commissions charged on cheques cleared from upcountry and remote banks branches, thus reducing the cost of clearing cheques.

Annual Transaction Volumes (2009 – 2013)



Source: Central Bank of Kenya





04.3| The Electronic Options

A. KEPSS/RTGS

Implementation of the Kenya Electronic Payments and Settlement System by the CBK has helped phase out the previous paper-based inter-bank settlement system and completely transformed the management of liquidity in the banking industry. The government requires that all transactions greater than KSh1 million be routed via KEPSS. The data shows that KEPSS accounts for the highest value of the payment transactions. KEPSS moved a volume of 2,230,049 transactions worth KSh24,311 billion in the year to June 30, 2014, compared to 1,757,482 transactions worth KSh20,686 billion in the same period in 2013. This increase is attributed to growing awareness by the public of KEPSS as a safe and efficient mode of payment for both high value and time critical payments and the continuing effects of both value capping and G-Pay system that combined to increase the daily flows through KEPSS.

B. Card payments

Card payment options in Kenya include; ATM Cards, Pre-paid cards, Charge Cards, Credit Cards, Debit Cards and POS Machines. Both the number and values of transactions have been increasing. The card values increased from KSh517 billion in 2010 to KSh1,265 billion in 2014 while the number of transactions increased from 92 million in 2010 to 265 million in 2014.

C. POS Machines

As at December 2014, the POS machines were 17,511 translating to one POS serving about 2,283 customers, limiting card usage avenues for shoppers.

Number of transactions made using plastic cards reduced from KSh338 million in 2013 to KSh265 million in 2014. The KBA attributed the drop in payments done using cards to the growing uptake of mobile money. "Mobile money alternatives are more convenient than cards" - Habil Olaka, Chief Executive, KBA.

D. ATMs

The number of ATMs increased from 2487 in 2013 to 2613 in 2014. This growth may be attributed to commercial banks business expansion strategies driven mainly by stiff competition leading them to adopt cost effective channels in offering financial services to ensure efficiency and maintain market share.

It is anticipated that banks will be using ATMs as a delivery channel for electronic transacting like purchases; bill payments; inter-account transfers and payments of normal beneficiaries

E. Mobile Money

According to the CBK statistics released in August 2014, mobile money transactions broke previous records to reach a staggering KSh1 trillion (US\$ 12.5billion) in the first half of the year, with consumers moving about KSh6,2 million (US\$ 70.5 million) daily. This is a 26 % increase from last year's KSh872,1 billion (\$9.9 billion) during the same period. The largest transactions were recorded in the month of May 2014, with transactions reaching about KSh198 billion (\$2.25 billion).

This growth has been attributed to increased competition in the mobile money market with new entrants that include Airtel Money, Orange Money, Yu Cash and Lipa Sasa by MobiKash.

Outlined below is the growth trend in volumes of channels and cards in Kenya from 2010 – 2014

Channels & Cards	2010	2011	2012	2013	2014
# ATM	1,943	2,183	2,292	2,439	2,618
# POS	18,179	16,604	18,478	21,089	17,511
# ATM / Debit Card	5,409,080	8,441,820	9,761,464	10,752,841	12,494,915
# Credit / Charge Card	112,174	119,253	134,274	133,909	188,417

03

05| Mobile Banking and Payments

Kenya currently tops the world in mobile money transfers with Safaricom being the most preferred platform.

In the period between January and June 2014, mobile money subscribers increased from 25.5 million to 26 million. Also, over 6,600 agents have opened shop since January 2014, raising the number of agents in the country to 120,781.

Mobile Payments allow users to pay for bills, purchase goods and services, buy insurance, get loans and easily transfer money among other services.

Equity Bank, which has around 8 million customers, has stirred great attention among other players and analysts by entering into this sector.

05.1| Mobile Payments and Banking

Mobile technology has revolutionised the Kenyan banking and payment system. It offers new opportunities for banks to provide added convenience to their existing customers in urban areas and reach a large population of unbanked customers in rural areas. Kenyans rely heavily on their mobile phones to access financial services due to the convenience and ease the mobile phone offers. Mobile banking offers savings services to millions of unbanked consumers. Transactions are instantaneous, secure and costs are low.

80% of the Kenyan population owns a mobile phone and 17 million Kenyans are connected to the mobile internet through a wide range of very affordable prepaid cards with both voice and data services. As a consequence, there are 21 million subscribers of mobile banking (two thirds of mobile subscribers) and among them, 5 million unbanked Kenyans. (Source: Communications Commission in Kenya).

The growth of mobile banking can be contributed to the inaccessibility of physical banks mostly in the rural areas. Kenya has 43 banks totaling approximately 2,000 branches while there are at least 120,000 mobile money agents offering more or less the same services. According to the central bank, there are at least thirty of these agents for each ATM.

Mobile Network Operators (MNO) have partnered with several banks in Kenya to offer banking services to customers. The most successful been the collaboration of M-Pesa with Commercial Bank of Africa to launch M-Shwari. M-Shwari allows its customers to open a bank account through their mobile phones without visiting a bank, save money and get interest on their savings, as well as obtain micro loans.

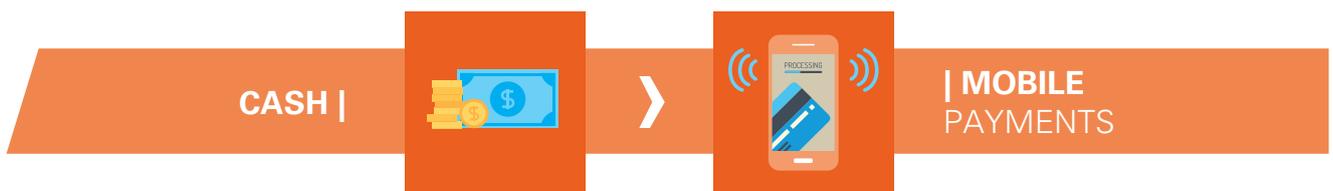
Equity Bank, one of the leading retail banks in the country, offers various mobile banking services to customers. They include: Eazzy 247, Airtel Money, M-Pesa ATM Withdrawal, YuCash and Orange Money.

05.2| Regulatory Framework for e-Money – Kenya National Payments Regulation 2014

The National Payments Regulation was launched in August 2014 by the CBK. The regulations give a formal legal framework for mobile money. Prior to this, the prudential and market conduct requirements and monitoring obligations for mobile money providers were articulated in the letters of no-objection granted by the CBK. For operators, the NPS Regulations provide much needed certainty in the market and direction for investors seeking to enter the market.

The guidelines brings many benefits for customers, such as consumer redress, disclosure of terms of service, maintenance of privacy and confidentiality of customer data.

The CBK has adopted a functional (rather than an institutional) approach to regulation where banks and non-banks – including Mobile Network Operators – are permitted to provide mobile money services.



The new regulatory framework includes measures to safeguard funds. These must be held in trust with a strong-rated prudentially regulated bank and no lending or investment of such funds is permitted. The funds are isolated from the service provider's own funds and safe from claims of its creditors.

The regulations also proposes that e-Money issuers use open systems that allow interoperability with other payment systems in Kenya and globally.

The new regulatory framework shows promise for increased collaboration amongst providers, (e.g. in shared distribution infrastructure and interoperability) as well as fostering greater competition and innovation. Over time, the net effect of the NPS Regulations on increasing financial inclusion and expanding the digital ecosystem in Kenya will be known.

05.3 | How MVNO will change the landscape?

MVNOs have promised to enhance accessibility and in a greater sense promote financial inclusion, providing masses with financial services from the convenience of their handsets. An example of this is Equity Bank's Finserve who will not only offer mobile banking services but also cheaper data and voice call rates.

"The biggest problem with accessing a bank is not bank charges, it is the cost of access, I will have to go 70km to where the bank is; I will have to pay public transport; I will have to spend the whole day to get to the bank; I have to dress because I have to go to the biggest shopping center in my district; that is what will be removed." **James Mwangi, CEO Equity Bank**

Background of MVNOs in Kenya

An MVNO is a company that sells mobile phone service by making use of another company's existing network infrastructure. An MVNO will have its own rates and calling plan features, its own billing system, and its own customer service department.

In 2014, Kenya granted MVNO licenses to three companies, allowing them to provide mobile money services without having to build new cellular infrastructure. The recipients were: Finserve Africa Limited, a subsidiary of Equity bank, Tangaza's Mobile Pay Limited and Zioncell Kenya Limited. Safaricom, who have been the industry market leaders, will now have to share their client base. In response, Safaricom has partnered with KCB to offer a new product that converges financial and communication services to take on Equity Bank's MVNO.

Impact of MVNOs in Kenya

- › **Pricing of financial services.** Each MVNO will be able to determine their own pricing of services such as data, voice and SMS, which they previously had to negotiate with MNOs. This could lead to lower prices as firms compete for market share. Equity has already said that it will charge a maximum cap of 25 shillings per transfer (M-PESA's cap is 110 shillings).
- › **A surge of product innovations.** The market will likely experience a new wave of innovation through the different products and services each MVNO develops for the market. Until now, these firms have had to use the existing MNOs' channel, which means facing challenges such as network outages and high-cost USSD sessions. With MVNO licenses, the players will be able to innovate and roll out their own products and services that will not be reliant on the existing MNOs.

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- › **Increased digital financial services uptake.** The new MVNOs could also cause more customers to start using mobile financial services. However, the extent to which new customers come into the system versus a shift from one provider to another is difficult to predict.
- › **Customer service and customer experience.** As MVNOs will have more control over their products and the channels through which they will be offered, they have an opportunity to design a better experience for customers.

Overcoming current challenges for MVNOs to Thrive

- › **Lack of Network Capacity.** The Communications Commission of Kenya 2012/2013 annual report highlighted that none of the mobile network operators in Kenya met the set quality standards for service. With Airtel supporting all the MVNO players on its infrastructure, it will be challenged to maintain a high quality of service.
- › **Short-term impact of a price war.** The entry of the MVNOs could trigger a price war in the market as each tries to gain market share and face the likely resistance from the existing MNOs.
- › **Unclear Regulatory Model.** The current regulation in Kenya is centered on mobile network operators as stand-alone business entities. With the entry of MVNOs, the operational dynamics are likely to change and become more complex with cross network services becoming a possibility. A separate regulatory structure may be needed to give the MVNOs a strategic framework to operate within.

06| Key Developments and Challenges

06.1| Developments

A. Licensing of MNOs and MVNOs

The entry of Zioncell, Mobile Pay and Equity Bank (through Finserve), is already being felt in the market, with consumers already anticipating benefits that would accrue from reduced costs of transfer, convenience as well as more platforms and providers to choose from.

MVNOs are promising to enhance accessibility, and in a greater sense promote financial inclusion, providing masses with financial services from the convenience of their handsets. For example, Equity Bank's Finserve will not only offer mobile banking services but also cheaper data and voice call rates.

B. The Launch of the National Payments Regulation 2014

The guidelines were launched by CBK in August 2014. The guidelines will regulate the mobile money market whose players include banks and mobile network operators. The regulations not only provide certainty in the market but also protect the customer and foster competition and innovations.

C. Diversification in Mobile Payments Services

Diversification in Mobile Payments Services is transforming the Kenyan Payment market. While a few years ago customers had to make trips to the bank to pay different bills, they can do that now from the comfort of their homes on their mobile devices. The "Lipa na M-Pesa" service from Safaricom allows users to pay for goods and services and pay for bills from their M-Pesa platform. Other services accessible to users are: purchase of insurance, loan services, among others. The Mobile Payment platforms are evolving into a "one-stop shop".

D. Upgrade in the payment systems

KBA is in the process of implementing a real time transaction switch. This is expected to support the evolution of Kenya's payment system by the set-up of an efficient and interoperable switch architecture for KBA members and other stakeholders.

E. Setting up of a Payment System Management Body (PSMB)

Section 7 of the National Payments Act, 2011 and the National Payments Regulation, 2014 calls for the creation of a Payment System Management Body to run all payment systems and create rules for interchange and interoperability. KBA and Financial Sector Deepening Kenya are in the process of establishing this body. The PSMB will oversee banks, mobile operators, system operators, payment clearing house operators and third party payment providers.

F. East Africa Payment System

The successful launch of the EAPS is viewed as a remarkable milestone and a key achievement by the Monetary Affairs Committee (MAC) of the EAC towards the integration of the EAC region's financial sector. The initiative has been ongoing since 2001.

EAPS is a secure, effective and efficient funds transfer system that will enhance efficiency and safety of payments and settlement within the EAC region.

The system operates on a real time gross settlement basis by utilising the linkage between the various Partner States' Real Time Gross Settlement (RTGS) systems using SWIFT messaging network for safe and secure delivery of payment and settlement messages to each other.



G. Agency Banking and the use of Post Offices

In 2009 CBK commenced measures to open up banking channels to non-bank-agents.

An amendment to the Banking Act allowed banks to start using agents to deliver financial services.

The use of the agency banking model by banks has continued to improve access to banking services since its launch. As at June 2014, CBK had authorised 15 commercial banks to offer banking services through third parties (agents). Since 2010, a total of 26,750 agents had been contracted by the banks.

These agents had undertaken over 106.1 million transactions valued at KSh571.5 billion. A recent survey by Financial Services Deepening Kenya showed that agents had significantly increased access to banking services with 52% of the population being within three kilometres of an agent, compared with only 22% within three kilometres of a branch.

The Postal Corporation of Kenya (POSTA) also provides payment services by acting as an agent. The corporation stands in as an agent of a principal to either pay dues to the principals' customers or to collect dues on behalf of the principal.

These include:

- › Payment of dues e.g. salaries, dividends, bonuses and others;
- › Collection of dues e.g. insurance payments, bills and other payments;
- › Issuing of forms for colleges and other institutions; and
- › Management of promotions and distribution of cash prizes and merchandise among others.

In keeping with the times, the Postal corporation has also introduced an electronic system for payments and collection of dues.

06.2 | Challenges

A. Lack of Comprehensive Regulation

Innovation has been at the forefront of development in Kenya, primarily through the integration of mobile telephony and retail financial services. Mobile payments have transformed the way financial services have been delivered in Kenya, by bringing a large number of 'unbanked' and 'under banked' persons into the financial realm.

These new technologies have almost always outpaced governments' regulatory responses to them. The lack of specific legislation in this area has consequently left the Kenyan regulatory environment open to various risks to consumers.

As mobile payments comprise both banking and telecommunications activities, differing perspectives exist on the appropriate regulatory framework as well as which authority should regulate it.

To enhance the potential benefits from innovations in this area, governments need to make complementary adjustments to domestic banking and financial regulations by offering specific regulation for mobile payments.

B. Reduced Pace in Implementation of Key Regulation

The existing regulatory framework for the financial sector in Kenya consists of a number of independent regulators each charged with the supervision of their particular sub sectors.

This regulatory structure has been characterised by regulatory gaps, regulatory overlaps, multiplicity of regulators, and inconsistency of regulations and differences in operational standards which leads to reduced pace in implementation of key regulation.

There is therefore a need for a more consolidated approach to implementation of regulatory frameworks in the country as multiple payment systems that are largely interoperable are implemented.

C. Fraud

According to the CBK, commercial banks lost an estimated KSh1.5 billion through electronic fraud in 12 months (April 2012 –April 2013).

The funds were stolen through ATMs, payment cards and POS.

To curb electronic fraud, the CBK has directed that all banks adopt the EMV Technology which was developed by the leading card operators Europay, MasterCard and Visa to ensure security of card systems and ease of payment globally.

The use of RTGS is also expected to reduce fraud in the country.

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The NPS is like a National Highway/Road System and is to be used by all

NPS is always available

NPS is Neutral

NPS is Scalable

Nigeria

Country Overview & Payments Profile

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01 | Payment Journey and Key Trends

01.1 | The Start

In 2007, Nigeria commenced the reform of its payment industry to strengthen this critical element of the financial services industry by launching the Payments Systems Vision (PSV) 2020. This was driven by the vision to ensure Nigeria becomes one of the top twenty economies by 2020.

Since then various components of this strategy have been implemented and are at various levels of implementation producing interesting changes to the payments landscape as shown in the line graph on the next page.

Some of these changes to the payments landscape have been boosted by positive infrastructural changes in the economy such as the availability of Global System for Mobile Communications (GSM) technology (Nigeria issued GSM license in 2001 and now has an estimated 130 million mobile phone subscribers), increased internet penetration, deployment of ATMs, consolidation of banks (resulting in the better working capital for the banks) and so on.

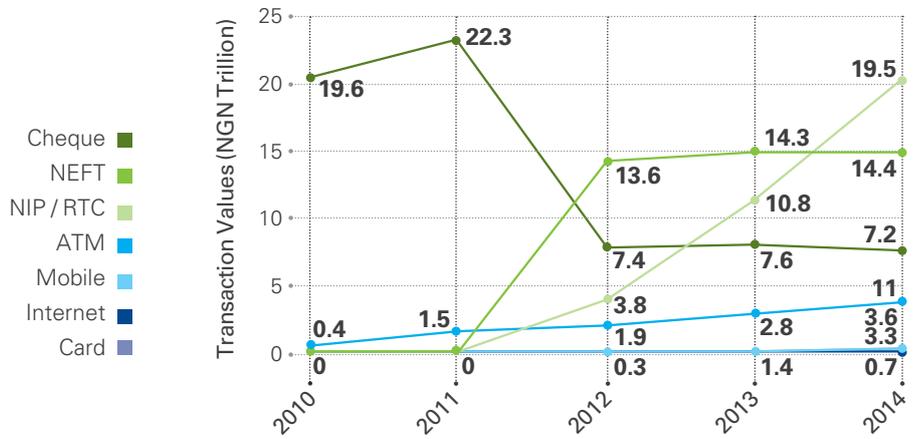
Specifically, there has been a significant increase in the volume and value of ATM transactions reflecting the increase in ATM deployments.

In the last 12 years, Nigeria has witnessed the deployment of an estimated 15,000 ATMs. Furthermore, Central Bank of Nigeria (CBN) statistics indicate that the ATM is the most utilised channel of payment in the country. The value of transactions carried out at ATMs increased significantly from ₦399.71 billion in 2010 to ₦3,619 billion [est] in 2014. However, the value of ATM transactions remains comparatively low.

Nigeria Instant Payments (NIP) and Nigeria Electronic Funds Transfer (NEFT) were introduced in 2011 and 2004 respectively and these have become the most popular modes of payment for high-value transactions, representing 42.9% and 31.7% of the total value of payment transactions in 2014.

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Annual Transaction Values (2010 – 2014)



Source: Central Bank of Nigeria

NIP service experienced increased adoption with the launch of the Cashless Nigeria project in 2012 even though the volume of transactions using NEFT appears to have stagnated, growing 0.7% between 2012 and 2014, even as NIP grew 55.5% over the same period.

There has been a steady decline in the use of cheques with a significant dip in 2012 due to the cashless Nigeria initiative. The cashless Nigeria initiative placed a limit on encashment of 3rd party cheques to ₦150,000 and in 2010, a cheque cap of ₦10 million. This has helped in reducing the use of the cheque as a preferred mode of payment. CBN statistics indicate that transaction values fell 63.27% between 2010 and 2014 from ₦19,675 billion to ₦7,227 billion [est].

POS payments grew 2,275% in terms of value and 80.1% in terms of transaction volumes between 2010 and 2014.

Mobile payments showed the highest growth in transaction values increasing by 4,934% between 2010 and 2014. This has been driven by the mobile money initiative designed to improve Nigeria's financial inclusion record from 49% to a target 71%. On the other hand, the transaction values for mobile payments still remain comparatively small at ₦335 billion [est] in 2014 compared to ₦3,619 billion [est] for ATM transactions, ₦7,227 billion [est] for cheques and ₦14,432 billion [est] for NEFT payments.



CASH |

| ELECTRONIC
BANKING

01.2 | Detailed assessment of the Nigerian NPS

In 2007, the CBN conducted an assessment of the Nigerian Payments System against the BIS Core principles. The gap analysis resulted in the launch of the Payments System Vision 2020 (PSV 2020) initiative. The initiative was designed amongst other things to achieve synergy with other government financial service initiatives such as the Financial System Strategy (FSS) 2020.

To ensure that the payment system has a well-founded legal basis under relevant legal jurisdictions, some laws were modified as follows:

- › The CBN Act of 2007
- › The Evidence Act of 2011
- › The Payment Systems Management Bill
- › The Electronic Transaction Bill

Furthermore, to ensure that participants in the industry are able to effectively understand and manage their financial risks, the following steps were taken:

- › Nigeria Bankers Clearing House Rules were revised
- › Real Time Gross Settlement (RTGS) system was deployed to ensure instant payments and eliminate some credit or settlement risks.
- › Settlement positions in the Deferred Net Settlement System (DNSS) are collateralised to minimise settlement risks
- › Payment cards were migrated to EMV to reduce the possibility of fraud.
- › 3 independent but interlinked Credit Bureaux were established.

Also, to provide prompt final settlement, new payment methods such as Nigeria Inter-Bank Settlement System (NIBSS) Instant Payments and RTGS system were implemented while the Deferred Net Settlement System was implemented to provide multilateral netting for settlement.

To ensure assets used for settlement are preferably a claim on the central bank with little or no credit or liquidity risk, the Central Securities Depository was implemented for Government debt instruments as part of the functionalities of the RTGS.

Similarly, the Central Security Clearing System (CSCS) was also set up for non-government securities.

In order to ensure practical & efficient use of the payment system by stakeholders in the industry, the government started the following initiatives:

- › A Presidential mandate was issued for all Federal Government agencies to adopt e-Payments
- › Cashless Nigeria project was implemented with the deployment of POS devices nationwide
- › 26 Mobile Money licenses were issued to mobile money operators
- › A daily cumulative limit on free Cash Deposits and Withdrawals was set and adopted by the industry
- › Cheque Truncation for cheque clearing was introduced.
- › Nigerian Uniform Bank Number (NUBAN) was implemented.

Finally, to ensure publicly disclosed criteria for participation, fairness, open access and a governance structure that is effective, accountable and transparent, the following guidelines were released by the regulator:

- › Guidelines on Transaction Switching Services
- › Operational Rules and Regulations of the Nigeria Central Switch
- › Guidelines on Stored Value/Prepaid Cards
- › Direct Debit Rules
- › Guidelines on ATM Operations
- › Guidelines for Cheque Truncation
- › Guidelines for POS Card Acceptance Services, etc.

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02 | Evolution of Payment Regulations

02.1 | Evolution of the Nigerian Payments Regulations

The CBNs overall objective, as it relates to payments, is to ensure the safety and efficiency of the NPS in Nigeria.

In Nigeria the CBN works with industry stakeholders to review; refine and develop an enabling regulatory framework that reduces systemic risk; ensures legal certainty of daily settlements and is aligned to international best practice.

<1999	2000 – 2003	2004 – 2005	2006 – 2008
<ul style="list-style-type: none"> › 1994 – Establishment of Nigerian Interbank settlement System. 	<ul style="list-style-type: none"> › 2002 – Full implementation and live operation of Nigeria Automated Clearing System (NACS). › 2002 – Reduction of clearing cycle to T+3 (local) and T+5 (upcountry). › 2003 – Definition of Guidelines for e-banking. 	<ul style="list-style-type: none"> › 2004 – New settlement framework for cheque clearing. 	<ul style="list-style-type: none"> › 2006 – Implementation of RTGS System, Temenos T24. › 2006 – Establishment of National Central Switch (NCS). › 2006 – Cheque Standard and Cheque Printers Accreditation. › 2007 – Payments System Vision 2020 (PSV 2020). › 2007 – Harmonization of clearing cycles (upcountry and local) at T+2.
2009 – 2010	2011 – 2012	2013	2014
<ul style="list-style-type: none"> › 2009 – Issuance of Mobile Payment Regulatory Framework. › 2009 – Guidelines on Transaction Switching. › 2009 – Guidelines on Stored Value/ Prepaid Cards. › 2009 – Establishment of Direct Debit Rules › 2010 – Directive enforcing a cheque cap of ₦10 million. › 2010 – Migration to EMV Cards. › 2010 – Guidelines on ATM Operations. › 2010 – Nigeria Uniform Bank Account Number (NUBAN). 	<ul style="list-style-type: none"> › 2011 – Issuance of cash-less policy circular. › 2011 – Guidelines for card issuance and usage in Nigeria. › 2011 – License of 6 PTSPs for deployment and maintenance of POS. › 2012 – Introduction of charges on cash withdrawal/deposit charges above the cash-less policy threshold (Lagos). › 2012 – Implementation of cheque truncation in Lagos. › 2012 – Reduction of clearing cycle from T+2 to T+1 in Lagos. 	<ul style="list-style-type: none"> › 2013 – Nationwide implementation of Cheque Truncation. › 2013 – Reduction of clearing cycle to T+1 from T+2. › 2013 – ₦150,000 limit on encashment of 3rd party cheques. › 2013 – Licensed 10 additional PTSPs. › 2013 – Compliance monitoring with Payment Card Industry Data and Security Standards (PCIDSS). › 2013 – Issuance of Guidelines for the regulation of Agent Banking in Nigeria. › 2013 – Payment System Vision 2020 Release 2. 	<ul style="list-style-type: none"> › 2014 – Issuance of revised Guidelines for card issuance and usage in Nigeria. › 2014 – Abolished fees on cash deposit above the Cash-Less Policy threshold . › 2014 – Implementation of Bank Verification Number (BVN) Scheme. › 2014 – Guidelines on International Money Transfer services in Nigeria.



02.2 | Current Legal Framework

The Nigerian NPS is governed by the following regulations:

The CBN Act 2007:

This law repealed the CBN Act of 1991, and it covers the objectives of the Bank as well as its mode of operation. It gave additional powers to the CBN including those of autonomy, responsibility for the development of transactions settlement systems including electronic payments, regulation of credit bureau, etc. It clarified the mandate of the CBN to oversee the payment system in Nigeria.

The Evidence Act of 2011:

The Evidence Act governs the admissibility of evidence in judicial proceedings in Nigerian Courts of Law. The 2011 Act includes an amendment from the CBN that ensures the admissibility of electronic records in the courts of law, critical for e-payment systems.

The Payment Systems Management Bill:

Drafted in 2009, the Bill pertains to payments, clearing and settlement systems in Nigeria and seeks to establish a legal framework for management, administration, operation, regulation, oversight and supervision.

The Electronic Transaction Bill:

Drafted in 2011, this bill seeks to promote e-commerce in Nigeria by eliminating legal barriers, harmonising legal rules on e-payments in the country with international rules, promoting consumer confidence in electronic payments and enabling e-payment transactions between citizens and public sector organisations.

Bills of Exchange Act, Cap. B8, Laws of the Federation of Nigeria, 2004:

The law details legal provisions for the exchange of value from between parties in a payment transaction

Dishonoured Cheques (Offences) Act, Cap. D11, Laws of the Federation of Nigeria, 2004:

The law details legal provisions on the exchange of cheques in the financial system.

Other key policies, laws and regulations for payments:

Mobile Payment Regulatory Framework.

03 | Systems and Operators

03.1 | Settlement Systems

A. Real-Time Gross Settlement System (RTGS)

- › This commenced in August 2013. The system settles across the Settlement Accounts of the banks with the CBN. The RTGS will only accept payment instruction from a participating bank with sufficient funds in its clearing account. Thus, payments are irrevocable, participating banks can give value to intra-day transactions and it eliminates systemic risks since this removes the need to reverse payments due to lack of funds.
- › The system uses SWIFT Y-copy methodology for transmission of payment instructions to participating banks. This allows straight-through-processing for payments which is a departure from the previous system that required the manual entry of transactions online.
- › The CBN does not provide credit facilities to participating banks for this activity, instead each participant uses the intra-day liquidity facility of the RTGS platform to dynamically pledge collateral – Government Treasury bills. The collateral is housed in the Central Securities Depository after which the CBN grants intra-day funding credited to each participant settlement account.
- › RTGS transactions are electronic payments instructions processed in real time. They are intended for systemically important payments, such as treasury, interbank, statutory and high-value customer payments using SWIFT infrastructure. There are no cycle restriction and all 21 Commercial banks are linked to the RTGS.

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B. Deferred Net Settlement System

- › In the DNSS payments are as a result of net positions derived from transactions by all participants in the various settlement cycles. The settlement figures for each bank are known after the netting process is complete. Netting takes place at specific points in the day as defined by the clearing house rules and guidelines.

- › Settlement exposure for each bank is collateralised based on historic information on the largest debit settlement position of the bank over a defined period of time.
- › The settlement schemes in Nigeria predominantly settle using the Nigerian Bankers Clearing house managed by the NIBSS. The settlement sessions generate settlement figures which are settled in the RTGS settlement accounts of participant in the CBN.

03.2 | Clearing Systems**A. Nigeria Inter-bank Settlement System (NIBSS)**

Provides and operates Nigeria's shared financial clearing infrastructure system for cheques, inter-bank transfers, cards and mobile payments. The first clearing house was launched in Lagos in 1961 by the CBN and as the financial services industry continued to grow a centralized automated clearing process was set up. Currently 2 systems effect clearing in the Nigerian Payments industry: Real Time Gross Settlement System (RTGS) and the Deferred Net Settlement System (DNSS).

B. Cheque

- › As part of the PSV2020, the Cheque and Automated Clearing House Working Group reviewed the Nigerian Bankers Clearing House Rules and launched the cheque truncation service in August 10, 2012. This reduced the clearing cycle from T+2 to T+1. Cheque truncation is the process where by physical clearing instruments are dematerialised into electronic format (images/MICR data) and transmitted electronically to the clearing house for clearing. Previously, there were several clearing zones for manual clearing. The Cheque truncation service resulted in the consolidation of all clearing zones into the National Clearing Centre in Lagos.
- › This payment instrument is cleared using cheque truncation in 2 cycles with an additional session for returned cheques.
- › All 21 Commercial banks use this system.

C. Government Securities

The Central Securities Depository holds government securities. With a delivery versus payment model (BIS model 1), the final transfer of funds from the buyer to the seller matches the transfer of securities from the seller to the buyer. This is done using the RTGS. The net settlement for these transaction take place through the NIBSS and the CBN Inter-bank funds transfer system (CIFTS).

D. Non-Government Securities

Non-government securities use the CSCS as the securities depository. Settlement is achieved in T+2 in a session that takes place once a day based on the BIS model 3 (settlement is done on a net basis with final transfer of funds and securities at the end of the processing cycle). Net positions are computed by the CSCS and communicated to the NIBSS for the 3rd clearing cycle.

E. NEFT - Nigeria Electronic Funds Transfer

- › NEFT is an electronic funds transfer (direct debit and credit) system between banks using the Structured Financial Messaging Solution (SFMS) application
- › NEFT payments are implemented in 2 clearing cycles:
 - Same day settlement for transaction received before clearing sessions.
 - Next day settlement for transaction received after clearing cycle.

F. POS

- › POS Card payments evolved from T+3 to T+1 clearing cycle (next day clearing) through the automated bulk clearing bureau using the NEFT service.

G. ATM, Mobile and CSCS

- › Clearing is achieved using Deferred Net Settlement in the National Bankers Clearing House in a process run by the NIBSS. ATM transactions (Inter-scheme Cards), Mobile (inter-scheme) and CSCS are cleared in the 3rd session using the RTGS settlement accounts of direct participants.
- › Collateral for these transactions is in the form of Federal Government Treasury Bills from individual banks based on historic exposure.

03.3 | NIP – Nigeria Instant Payments

Nigeria, along with South Africa, have implemented a real-time payment service which is aligned to international best practice.

This is an account to account funds transfer service that ensures instant value to the recipient. All electronic payments are real time. There are no cycle restrictions.

NIP funds transfer are categorised from low to high security. Each participating bank was given 6 months to achieve the "Highly Secured Online Funds Transfer Status".



There are no limits on the amount of money that can be received by a bank account using this service.

The table below refers to the security requirements and limits for using the NIP system

S/N	Category	Required Control	Daily Limit for Instant Value	Daily Limit for Next Day Value
1	Highly Secured Online Transfer	<ul style="list-style-type: none"> › Hardware token › Behavioral Monitoring › SMS/ Email Alert › User Name and Password › Anti-phishing solution 	<ul style="list-style-type: none"> › Individual : ₦1m › Corporate: ₦10m 	<ul style="list-style-type: none"> › Individual : ₦10m › Corporate: ₦100m
2	Moderately Secured Online Fund Transfer	<ul style="list-style-type: none"> › Hardware token › SMS/ Email Alert › User Name and Password › Anti-phishing solution 	<ul style="list-style-type: none"> › Individual : ₦500k › Corporate: ₦5m 	<ul style="list-style-type: none"> › Individual : ₦1m › Corporate: ₦10m
3	Basic Security	<ul style="list-style-type: none"> › OTP (One Time Password) › SMS/ Email Alert › User Name and Password 	Individual : ₦200k	Individual : ₦1m
4	Low Security	<ul style="list-style-type: none"> › SMS/ Email Alert › User Name and Password 	Individual : ₦20k	Individual : ₦100k

/ Settlement Risks Management

Settlement risk in the Nigerian Financial System is managed as follows:

RTGS: Exposures and risks are monitored real time and participant exposure is collateralised. Once the participants credit limit is reached, the system ceases to settle further payments from the participant.

Deferred Net Settlement Payment System: In this system, each participant has a net settlement position based on netted payments of all participants.

This requires significantly less liquidity than the RTGS system. Collateralising settlement exposures helps to mitigate settlement risk since payments are irrevocable and the final settlement position is not known until specific points in the day.

Typically, the amount to collateralise for each participant is based on historic patterns and set as their worst debit position during a defined period in addition to a safety haircut. The collateral requirements differs across the payment schemes as detailed in the table on the next page

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Tiering of Collateral Mechanisms		
Level 1	Funding through the settlement account: <ul style="list-style-type: none"> › Settlement positions covered through intra-day liquidity facility › Participant request liquidity from CBN backed dynamically pledged collateral › Funds are placed into the participant settlement account with the CBN 	Normal Operations
Level 2	If funds are not available in the settlement account: <ul style="list-style-type: none"> › Each participant in a payment scheme must pledge certain levels of collateral. Amount of collateral is either based on historic data or fixed amount per participant (dependent on scheme) › Should funds in the settlement account be insufficient CBN will collect pledged collateral and use the resulting funds to settlement obligation 	Defaulter Pays
Level 3	If pledged collateral is insufficient <ul style="list-style-type: none"> › CBN will arrange temporary loan › Loan at punitive rates to be paid within 48hours › Funds used to settle any outstanding obligation 	
Level 4	If participant cannot repay the temporary loan: <ul style="list-style-type: none"> › CBN will look to recover potential losses through claims on the bank but bears ultimate risk of non-settlement (“Lender of Last Resort”) 	Central Bank Pays

04 | Payments Moving from Physical to Electronic

04.1 | Nigerian Payments Market: Key opportunity drivers

The payments business in Nigeria continues to show significant growth, specifically in mobile and has become a key source of revenue for banks and other payment service providers.

Below, are some of the key payment trends that will drive not only the payments business in Nigeria but also see the gap narrowing between the banked and unbanked population. Payments are likely be the catalyst that will drive true “Financial Inclusion” in Nigeria.

	2014	2020
Rising Electronic Payment Adoption	<p>> 50 million</p> <p>Non-ATM transactions covering POS, Web and Mobile Payments. Annual non-cash payment transaction per inhabitant is very low (<1) compared to similar markets (India - <6).</p>	<p>> 500 million</p> <p>Mobile and POS payments are projected to have the fastest annual growth rates at over 80%. Mobile is expected to drive overall growth of electronic payment transactions.</p>
Increasing Issuance of Payment Cards	<p>> 48 million</p> <p>Estimated number of active cards issued in Nigeria as at 2014. Expected to Grow at CAGR >20%.</p>	<p>> 155 million</p> <p>An estimate of 160 – 200 million payment cards (including reissuances) will be produced between 2015 and 2020. However, innovations in payment technologies may diminish the need for physical cards.</p>
POS Deployment Target	<p>163,733 POS</p> <p>POS density in Nigeria is currently <90 per 100,000 people. CBN’s target was to reach >2,000 per 100,000 people by 2012. Current challenges include device cost, distribution, support etc.</p>	<p>> 2 million POS</p> <p>Assuming a conservative target of 1,000 per 100,000 by 2020, there is a current shortfall of > 1.8 million POS in Nigeria. mPOS has a critical role in fulfilling the current POS deficit.</p>



Payments continue to move from physical to electronic and from debit-pull transactions (e.g. cheques) to credit-push transactions (e.g. mobile and EFT).

A. Cash Payments

The Nigerian payments landscape is dominated by cash based transactions. In 2010, a review of payment transactions by the CBN indicated that 99% of customer activity in banks were cash based. Furthermore, 86% of customer transactions in bank branches were less than ₦100,000, 10% were more than ₦150,000. Also, the 10% of transactions above ₦150,000 were responsible for 71% of cost of managing these cash transactions. This insight amongst other reasons gave rise to the cashless Nigeria policy in 2012. Today the payment landscape is still dominated by cash but with recent developments in the industry, other payment types have started to feature significantly.

B. Cheques

In Nigeria, cheques play an important role in the payment system as it was for along time the only alternative to cash payments. The volume and value of cheque payments increased in 2013 due to improvement to the cheque clearing system.

Today, the Cheque Clearing Cycles have been harmonized across the country with clearing cycles reduced from 3 days (T+2) to next day (T+1). Despite these efforts, the volume and value of cheques cleared nationwide has decreased.

The value of Cheque transactions reduced from ₦29,436.03 billion in 2009 to ₦4,309.43 billion as at July 2014. This can be attributed to the increase in the use of e-payment channels which started when the cashless Nigeria project commenced in 2012. Furthermore, while the government is actively promoting the use of e-payment channels, there is still some effort to encourage the use of Cheques as a legal tender. Recently, the CBN in March 2015 issued a circular (BSD/DIR/GEN/LAB/08/016) to all banks detailing measures to curb the issuance of dud cheques and implementing stiff penalties for offenders.

C. ATMs

The ATM is one of the fast growing payment channels distributed all over the country. The number of ATM machines in the country increased from 3 in 2002 to 10,727 in 2012 and finally 15,000 in 2014. From 2012 to 2014, the cumulative transaction volume also grew from ₦1.3 trillion to ₦1.7 trillion.

The total number of ATM transactions in Nigeria increased from 109,161,646 transactions in 2009 to 295,292,940 in 2013 and by July 2014, 214,630,536 transactions had been recorded. Other services provided by ATMs include funds transfer to other banks & prepaid cards, balance enquiry, airtime purchase, bills payment, cash deposit amongst others.

D. NIBSS Instant Payment (NIP)

NIP was introduced in 2011 as a real-time inter-bank payment service predominantly used for single payment transactions (low volume). This service is offered across major banking channels in Nigeria including branch, internet and mobile banking. In 2012, NIP generated ₦13,660.02 billion in transactions, this has continued to grow especially for high value transactions. As at July 2014, the cumulative NIP transactions since 2012 had reached ₦36,597.59 billion. In 2014, NIP accounted for about 8% of non-cash payment transaction volumes and over 40% of transaction values.

E. NIBSS Electronic Funds Transfer (NEFT)

The NIBSS Electronic Fund Transfer (NEFT) is an irrevocable electronic fund transfer instruction for payment to a 3rd party bank. NEFT is usually used for high volume payments such as salaries, vendor payments, etc. and are processed via scheduled batch clearing sessions on NIBSS ACH. NEFT transactions are not real-time but beneficiaries receive same day value for transactions posted before the clearing sessions.

NEFT transactions have recorded a low growth rate over the years (<3%). They however accounted for about 6% of non cash payment volumes and about 32% of payment value in 2014.

F. POS Payments

POS terminals are deployed across the country and allow customers to purchase goods or services using debit/ credit cards. According to NIBSS report, there were about 170,000 POS terminals deployed in major cities in Nigeria in 2014 and they accounted for about 4% of non-cash payments transactions. POS payment transactions have shown a cumulative annual growth rate (CAGR) of over 80% since 2010. While transaction value has grown by about 90% year on year. According to NIBSS, pilot states for Cashless Nigeria initiative are at the forefront of driving POS transactions growth. Being the commercial hub of the country, Lagos continues to be the most dominant centre for electronic payments. The ongoing rollout of the cashless initiative to other Nigerian states is facilitating the growth of POS payments in the country. Despite the investments in promoting POS in Nigeria, less than 25% of the deployed POS terminals are active. In a survey conducted by NIBSS in 2013, the major challenges were attributable to issues such as connectivity, transaction charges, transaction failure, customers insistence on cash. There are ongoing initiatives to address the POS adoption challenges by major industry stakeholders.

04

G. E-commerce Payments

Web payments are increasingly being adopted by Nigerians. E-commerce has recorded enormous growth since 2012 from about US\$ 35 million in 2012 to over US\$ 550 million as of October 2014.

The growth is largely driven by the growing levels of internet penetration and changing consumer behavior. With the growing middle income segment, there has been relative increase in the demand for convenient shopping. During the equivalent of the US "Black Friday Sales" in November 2014, one of the largest online retail stores in Nigeria claimed to have made over 500% of its entire sales for the whole of 2012.

The introduction of multi-factor authentication tokens and other security policies have given Nigerians more confidence in using their debit cards for card-not-present transactions. Furthermore, the introduction of online gateways such as GTPay, WebPay & eWallets such as Paypal have contributed directly to the increasing security of card holders.

However, statistics show a decline in value of transactions over the web.

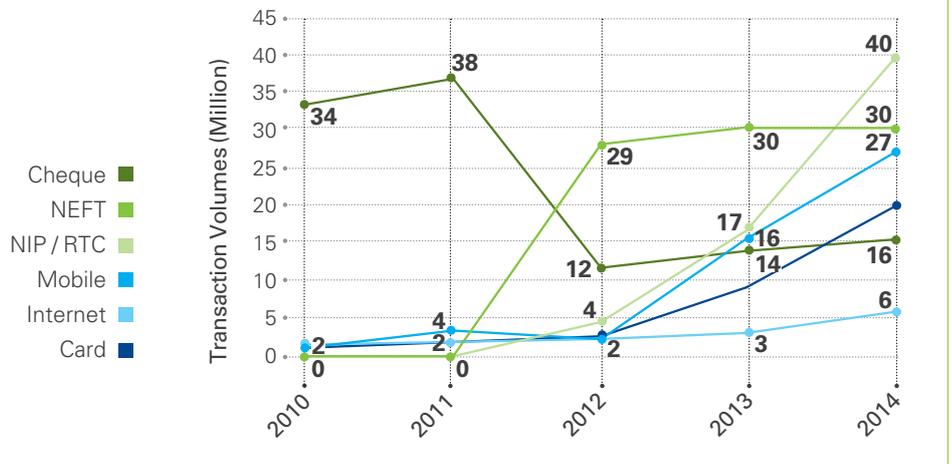
In 2009, over ₦84.15 billion was transacted over the web while as at July, 2014 only ₦36.25 billion in transactions was recorded which shows a decline in patronage of the channel.

A major challenge for e-commerce in Nigeria include lack of customers' trust for online payment channels. To mitigate this, online retailers are adopting various innovative approaches such as the "Pay-On-Delivery" model – initially started as cash receipt but now supported with POS machines to facilitate electronic payments and to mitigate increasing security risk of carrying cash.

The Graph below brings into perspective the shift in the payments from physical to electronic. The flattening of the EFT volumes are attributed to the introduction of NIP, where customers are able to send value and the beneficiary receives the cleared funds in a matter of minutes.

This being said, the largest volume of transaction is still the ATM cash withdrawals, which still stows a strong increase on a year-on-year comparison. Therefore, the large volumes in the ATM stream distort the graph and have been excluded.

Annual Transaction Volumes (2010 – 2014)



Source: Central Bank of Nigeria



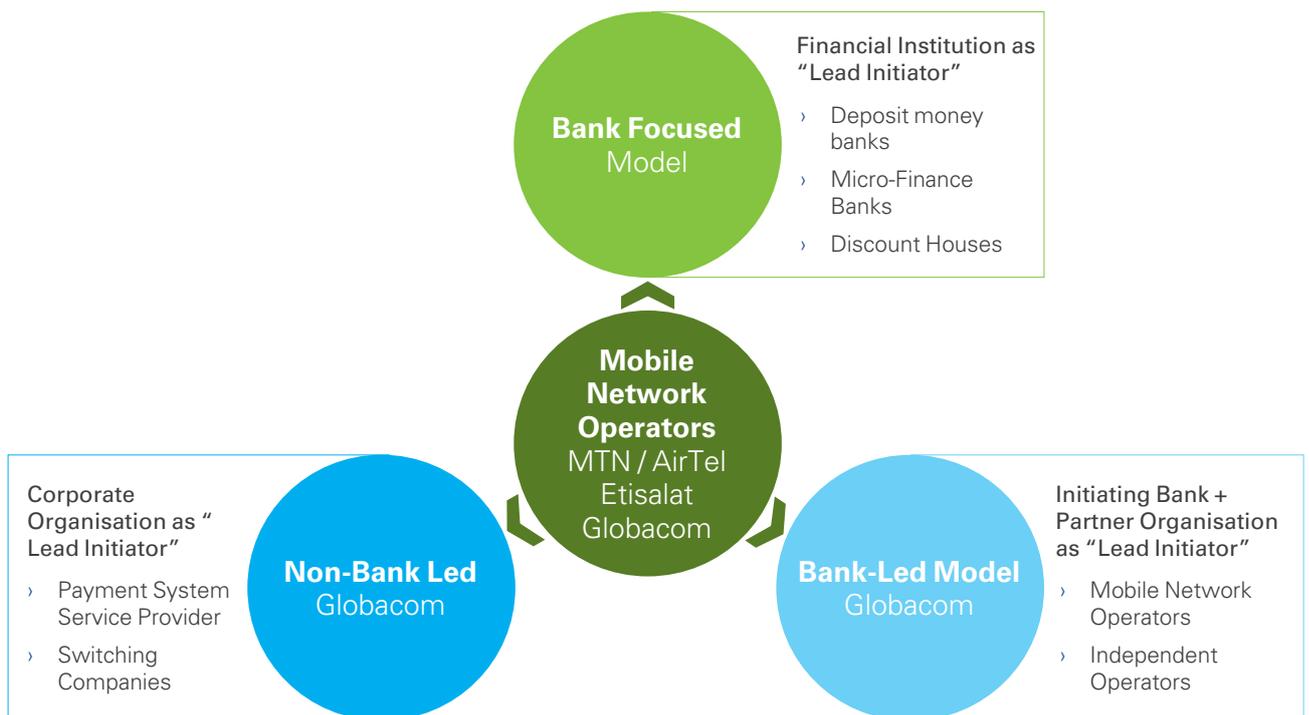


05| Mobile Banking and Payments

Mobile payments system refers to the components required to deliver payment services to the banked and unbanked using mobile platforms such as phones and tablet devices.

The CBN released the Mobile Payments Rules and Regulation Framework in 2009. The mobile money industry in Nigeria commenced with the following models:

- › Bank-focused – Financial Institution as Lead Initiator
- › Bank-Led – Financial Institution(s) and or its consortium as Lead Initiator
- › Non-Bank Led – A corporate organization as Lead Initiator.



The lead initiator, which can only be a bank in Nigeria, ensures that the various services meet the regulatory requirements stipulated by the CBN. This means that the telecommunication companies have been restricted by CBN from playing a lead role in the provision of mobile payments/banking.

The telecommunication companies are allowed to provide the following:

- › Telecommunication network infrastructure for mobile money operators
- › Secure communication based on the technology standard defined in this regulatory framework

- › Network for mobile money operators based on transparent criteria which are generally applicable to all money operators without discriminating against any operator
- › Allow its subscribers to use any mobile payments system service of their choice
- › Ability to receive deposit from the public only in respect of the prepaid airtime billing of their subscribers
- › Prevent the use of the prepaid airtime value loaded by their subscribers for purposes of payment or to transfer monetary value.

04

Mobile Money is primarily targeted at improving access to finance for the predominantly unbanked population in line with the Nigeria's Financial Inclusion Strategy (FIS). The current mobile penetration stands at over 130 million active lines while only an estimated 30 million Nigerians have access to a bank account.

These statistics have provided the motivation to provide banking services to the rural communities via a mobile phone as was done with M-pesa in Kenya.

The CBN licensed Mobile Payment operators and Banks to provide mobile payment services under the predominantly Bank-led guidelines.

The guidelines requires operators to work with a sponsoring bank with all client funds being held by the sponsoring bank and covered by a deposit insurance scheme of the Nigeria Deposit Insurance Corporation (NDIC).

Mobile Payments

- › Since its launch in 2012 mobile money has been gaining strength, with both number and value of transactions increasing significantly year to year. The number and value of mobile transactions has gone from 1.8 million transactions with a total value of ₦1.27 billion (in 2009) to over 15.1 million transactions with a total value of ₦162.8 billion by July 2014.
- › As at 2014 according to NIBSS statistics, there were about 21 MMOs, 40,875 agents and 9.1million mobile customers. Nigeria with an estimated population of 173 million has achieved about 6% penetration. However, various factors including interoperability, inadequate regulatory frameworks and awareness may have limited full-scale adoption. According to research conducted by EFINA (2014), the top uses for money include airtime purchase (42.1%), sending money (20.2%) and receiving money (14.4%) even though respondents indicated a willingness to use the service for paying school fees, transport and hospital bills.
- › According to the same research only 12.7% of the adult population is aware of mobile money and this awareness is driven by communication channels such as Television, word of mouth by friends and family, radio, banks, SMS, newspaper and the internet, with television, friends & family and radio contributing the highest at 36.8%,36.6% and 28.4% respectively.
- › According to another research by EFINA in the six states (Abia, Anambra, Kano, Ogun, Rivers and the FCT) of the Cashless Policy phase II, market visibility/ awareness of mobile money operators showed that amongst respondents there is an awareness of about 33%. The MMOs surveyed include: GT Mobile Money, Ecobank Mobile Money, Eazymoney, Firstmonie and Paga.
- › Geographically, the following statistics of respondents were aware of mobile money across various states: FCT, Abuja (56.5%) the highest percentage, and Ogun State (22.2%) had the lowest percentage. In terms of usage, Kano had the highest percentage of customers who used mobile money and electronic bank transfers.
- › In an effort to bolster the use of mobile money, CBN repealed its decision to exclude the Telcos from the Mobile Money phenomenon. In August 2014, approval was given to Globacom, Nigeria's second national operator, to create 500,000 mobile money agent outlets in the country through the Glo Xchange, a mobile money agent network in partnership with 3 commercial banks.





06| Key Developments and Challenges

06.1| Developments

Some significant achievements due to the implementation of the cashless policy include:

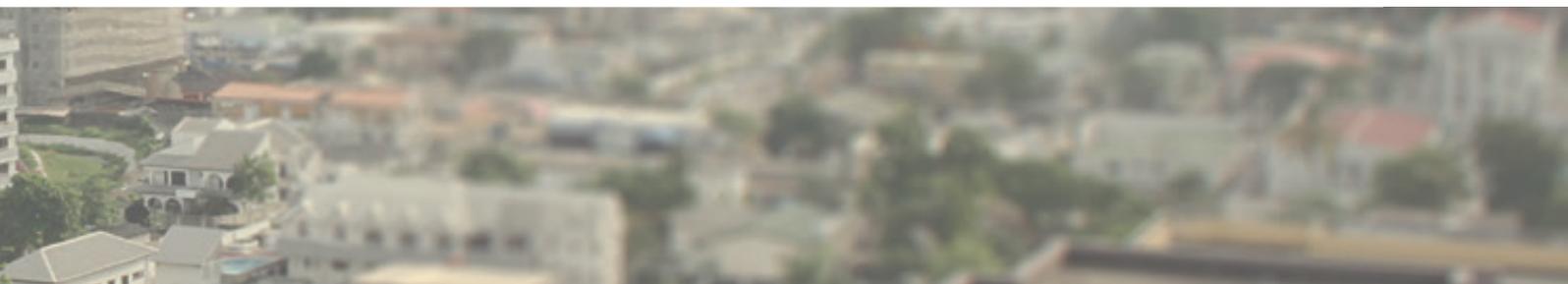
- i. Significant increase in electronic transactions in the pilot states. Some retailers have recorded growth of over 100% – 150% in non cash transactions
- ii. Increasing awareness and adoption of cards. Number of card owners in Nigeria increased from 13.5 million in 2012 to over 42 million in 2013 (> 200% growth). However, this does not represent unique individuals
- iii. Steady decline (~15%) experienced in cash/cheque transactions
- iv. CBN's intervention to address the infrastructure / network issues affecting availability of electronic payment channels
- v. Recent elimination of charges on cash deposits.

06.2| Challenges

The cashless initiative has been off to a good start with some notable improvement, however, there are still some challenges to mass adoption which include:

- i. Low literacy levels
- ii. Technology aversion (even with the literate population). Key concerns around security/ fraud
- iii. Access to financial services in the rural area. There is a huge concentration of the Banks and financial services in the urban area
- iv. Infrastructural issues – service availability and uptime
- v. General lack of trust in the Banking system
- vi. Apathy towards the merchant charge model for POS transactions (1.25%)
- vii. A significant part of the payment ecosystem is yet to adopt cashless so the need for cash is not totally eliminated
- viii. Prevalent cash culture
- ix. Challenges limiting the adoption of mobile payments.

The CBN as well as other stakeholders (Banks, NIBSS, Card Schemes, Payment service providers etc.) are investing a lot in creating awareness of the benefits of electronic payments and have even gone as far as introducing some incentives for utilization of electronic payments. Other areas of intervention include the consumer protection, security and fraud management.



05

A Safe and Efficient NPS connects us to the Global Payments Village

NPS is a National Asset

NPS Promotes Interoperability

NPS is Safe and Reliable

South Africa

Country Overview & Payments Profile

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- 02 | The Evolution of Payments Regulation
- 03 | Systems and Operators
- 04 | Payments Moving from Physical to Electronic
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- 06 | Key Developments and Challenges

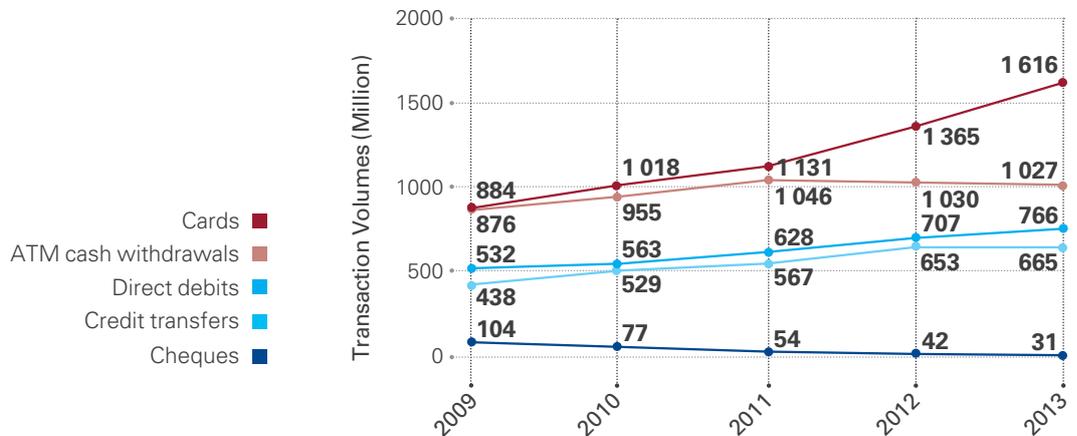
01 | Payments Journey and Key Trends

South Africa is steadily moving towards a less cash depend society. This is demonstrated by comparing transaction volumes for different payment methods from 2009 to 2013. What is clear to tell is that electronic payment transaction volumes (e.g. cards, credit transfers and direct debits) continue to increase year-on-year.

Card payments specifically increased the most with a 16% compound annual growth rate over the 5 years reaching 1.6 billion transactions in 2013, according to the BIS. This compared to cash payment transaction volumes (e.g. ATM cash withdrawals and cheques) that either had slow growth or even a decrease in the case of cheques over the same period. ATM cash withdrawal transaction volumes increased from 2009 to 2011, but then started to decrease through to 2013.

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Annual Transaction Volumes (2009 – 2013)



Source: Bank of International Settlement (BIS)

This all while electronic payment volumes had substantial increases over the same period. Cheques displayed a steady decrease in transaction volumes since 2009 and even a more notable decrease in value from R2.4 trillion (\$198 billion) in 2009 to only R500 billion (\$42 billion) in 2013.

This continuous move away from cash to electronic payments can mainly be attributed to the combined efforts of the South Africa banking industry and the South African Reserve Bank (SARB).

It started in the early 1990s when South Africa was reintegrated into the world economy and there was a need for the domestic clearing system, settlement system and risk management procedures to comply with international best practice. The National Treasury in South Africa, guided by the principles and guidelines issued by the Bank of International Settlement (BIS), delegated the authority for payments to the SARB. The SARB has two key regulatory divisions namely the Banking Supervision Department and National Payments System Department (NPSD).

In 1994 the banking industry requested the NPSD to take the lead in the modernisation process of the domestic payment system. This initial work resulted in the development of the South African National Payment System Framework and Strategy Document (Blue Book) which was published by the SARB in 1995.

During 1998 the Real-time Gross Settlement System (RTGS), namely the South African Multiple Option Settlement System (SAMOS) was introduced. This brought domestic interbank settlement practices in line with international best practice and signaled the start of a new era for payment practices in South Africa.

The National Payment System Act (NPS Act) was published in 1998 after the NPSD, consulted with the banking industry, and drafted legislation for the participants and users of the NPS. The Payments Association of South Africa (PASA) and formally established in 1996, and subsequently recognised by the SARB as a Payment System Management Body (PSMB) in terms of the NPS Act. PASA was established to assist the SARB in managing the operational safety and integrity of the NPS.

The focus then shifted to reducing risks in the system, specifically within the retail payments clearing, switching and settlement environment. In 2000 initial measures were taken to develop and finalise Payment Clearing House (PCH) agreements and the implementation of item limits in the various payment systems.

POINT OF SALE |



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A major milestone followed when the Rand (ZAR) was officially accepted as a Continuous Linked Settlement (CLS) currency in 2004. This brought the number of currencies being settled through the CLS system at the end of 2004 to fifteen. Growth in ZAR settlement in the CLS system since introduction has been substantial. In 2005 an average of R84 billion (\$7 billion) worth of trades were settled in the CLS system on a daily basis. This has increased to R408 billion (\$34 billion) in 2014, indicating a fivefold growth over a ten year period.

During 2004 the NPSD decided to perform a self-assessment of the South African NPS. The self-assessment was done according to the joint World Bank / International Monetary Fund Financial Sector Assessment Program and focused on the level of compliance of the South African NPS in accordance with the BIS Core Principles for SIPS. The results of the self-evaluation indicated that the South African NPS meets the criteria as stipulated in the BIS Core Principles for SIPS.

The Authenticated Early Debit Order (AEDO) and Non-Authenticated Early Debit Order (NAEDO) was introduced into the system in 2006. The two systems facilitated the processing of special debit orders immediately after the daily bulk credit postings to the customers' accounts, and provided a safer and more efficient methodology to enable deductions from the customers' banking accounts.

In 2006 the Banking Enquiry was established by the Competition Commission to examine certain aspects of competition in retail banking in South Africa. The final report that was published in 2008 had an impact on the banking industry and it made various recommendations around access to the payment system by would-be service providers (banks and non-banks) and charges levied by banks for payment transactions.

As the payment system has evolved, increased participation of non-banks in the clearing environment has been required. The South African Post Office Limited, through its Postbank Division, was designated as a clearing system participant in 2011.

During January 2012 the South African Social Security Agency (SASSA) awarded the tender to pay social grants to Net1, subsidiary of Cash Payment Services (CPS). Net1 partnered with Grindrod Bank who issued about 15 million debit cards that pay grants of about R9.6 billion (\$800 million) per month with CPS who provide the card technology and manage the card programme. This project took a big step towards financial inclusion in South Africa and is highlighted as one of the biggest single enrolment projects undertaken by MasterCard internationally, and the first MasterCard UEPS biometric – enabled debit card in the world. However, it has not all been plain sailing for Net1 and Grindrod. The Constitutional Court ordered SASSA in 2014 to rerun the tender. The court order stated that the original grant to Net1 was invalid. There has been various objections by CPS since then. The latest developments indicate that the tender will be rewarded again in October 2015.

In 2013 the Southern African Development Community Integrated Regional Electronic Settlement System (SIRESS) was successfully implemented in July 2013 by the Payment System Subcommittee of the Committee of Central Bank Governors (CCBG) led by the NPSD in collaboration with the SADC Banking Association. SIRESS is an electronic settlement system developed by participating SADC member states to settle regional transactions among banks within the SADC countries on a gross basis and in real time. It is meant to facilitate the increase of regional trade in SADC by providing final and irrevocable settlement, which provides legal certainty for payers and beneficiaries.

02| Evolution of Payment Regulations

02.1| Evolution of Payment Regulations

The SARBs main objective is to ensure the safety and efficiency of the National Payment System. The South African regulations has been aligned, developed and refined to provide for the domestic payment system, and at the same time adhere to international best practice.

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The scope of the South African regulations includes both banks and non-bank participants. The SARB works closely with other regulatory authorities to ensure that the initiatives and policies are implemented efficiently and that all participants adhere to the relevant regulations.

<1996	1997 – 1998	1999 – 2002	2003 – 2005
<ul style="list-style-type: none"> › 1994 – SARB NPS project to formulate long-term strategy. › 1995 – SARB publish South African National Payment System Framework and Strategy Document (Blue Book). › 1996 – The Payments Association of South Africa (PASA) was founded. 	<ul style="list-style-type: none"> › 1998 – South African Multiple Option Settlement System (SAMOS) / RTGS is introduced. › 1998 – SAMOS version 2 implemented that allowed banks to choose a specific date and time at which they require settlement instructions to be executed. › 1998 – National Payment System Act (NPS Act) was circulated and PASA was recognised as a Payment System Management Body (PSMB). 	<ul style="list-style-type: none"> › 1999 – SAMOS version 3 implemented that included the Continuous Processing Line (CPL) . › 2000 – Position Paper on Payment Clearing House (PCH) agreements and item limits in various payment systems. › 2001 – SAMOS version 4 implemented that included the Continuous Batch Processing Line (CBPL). › 2002 – SAMOS version 5 implemented that allowed the SARB to monitor bank’s usage of its funds and warnings on liquidity problems. 	<ul style="list-style-type: none"> › 2004 – SAMOS version 6 implemented and move to same-day square-off to comply with BIS Core Principles for SIPS. › 2004 – South African Rand is included in the Continuous Linked Settlement (CLS) system. › 2005 – Self-assessment by the SARB on the NPS that concluded compliance with the BIS Core Principles for SIPS. › 2005 – EMV liability shift introduced for the first time.

2006 – 2008	2009 – 2012	2013	2014
<ul style="list-style-type: none"> › 2006 – Early debit orders introduced into the payment system. › 2006 – Real-time clearing system was introduced between some banks. › 2006 – Launch of the Banking Enquiry by the Competition Commission. › 2008 – SAMOS version 6 implemented and move to same-day square-off and comply with BIS Core Principles for SIPS. 	<ul style="list-style-type: none"> › 2011 – Phase 1 of Interchange Determination Project (IDP) was launched. › 2011 – South African Post Bank Limited is designated as a clearing system participant. › 2012 – Phase 2 of IDP was launched to determine ATM and Card interchange rates. › 2012 – South Africa Social Security Agency (SASSA) award social grants contract to service provider. 	<ul style="list-style-type: none"> › 2013 – SARB publish position paper to support Principles for Financial Market Infrastructures (PFMIs). › 2013 – SADC Integrated Regional Electronic Settlement System (SIRESS) in implemented by the Payment System Subcommittee of the Central Bank Governors, led by the SARB in collaboration with the SADC Banking Association. 	<ul style="list-style-type: none"> › 2014 – 3D Secure becomes an official security standard for online transactions. › 2014 – Phase 3 of IDP was launched to streamline the process.

POINT OF SALE |

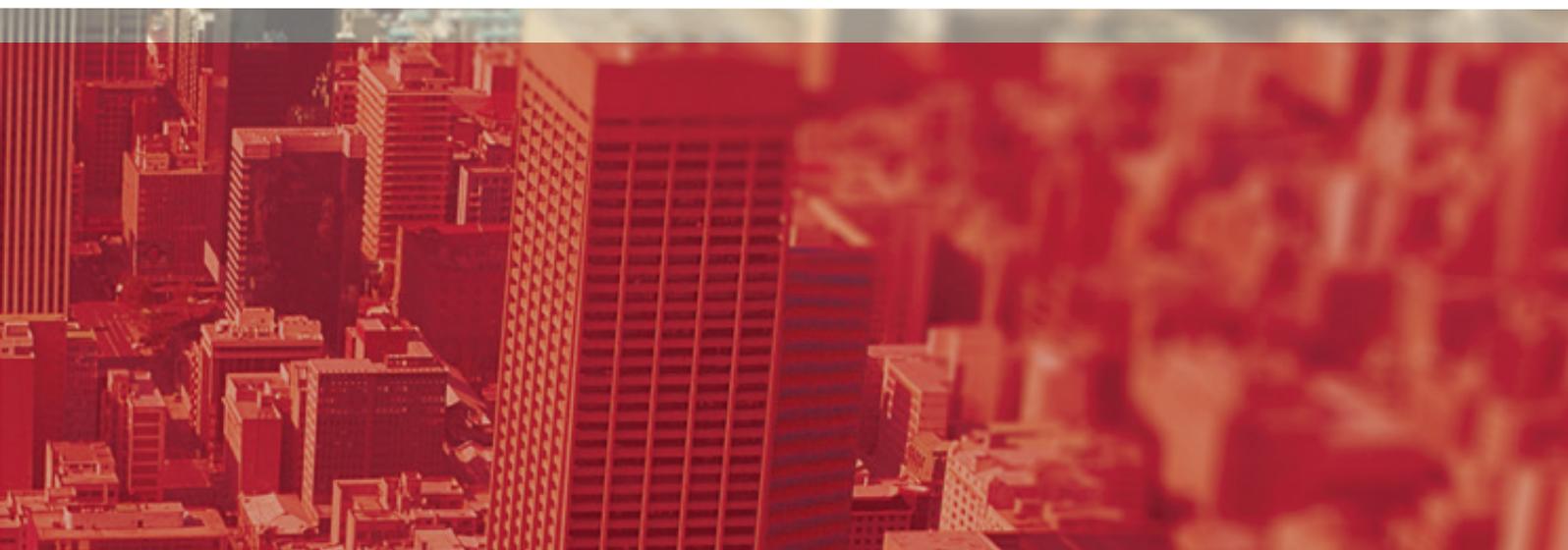


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02.2 | Current Legal Framework covering payments:

The South African Payments industry is governed by the following regulations:

1. **South African Reserve Bank Act, No. 90 of 1989**
 - › Mandates the Central Bank to create enabling legal framework & policy in respect of payments.
 - › Regulates minimum reserve balances to be maintained by banks.
2. **National Payments System Act, No. 78 of 1998**
 - › The NPS Act provide for the management, administration, operation, regulation and supervision of payment, clearing and settlement systems in the Republic of South Africa; and to provide for connected matters.
 - › The NPS Act recognised the Payments Association of South Africa (PASA) as a Payment System Management Body (PSMB).
3. **PASA Policies and Position Papers**
 - › PASA's constitution governs its functions, structures and activities, with further rules affecting its members in the form of PASA policies and position papers.
4. **Payment Clearing House (PCH) Agreements**
 - › The specific transaction types and applicable clearing rules relevant to each PCH are agreed amongst members forming part of a participant group.
 - › The PCH Participant Group (PCH PG) would also be responsible for the appointment of one or more PCH Systems Operators (PSO) for each PCH, which would be authorised by PASA to clear interbank payment instructions.
5. **Service Level Agreements (SLA)**
 - › The participation of members and the PSO is further managed through adherence to Service Level Agreements (SLA). Transactions cleared through the PSO are eventually settled at the SARB through SAMOS.
6. **Other key policies, laws and regulations for payments:**
 - › Banks Act, No. 94 of 1990 that governs the issuing of banking licenses to banking institutions and monitoring their activities.
 - › E-money position paper by the SARB, Position Paper NPS 01/2009.
 - › Exchange Control Regulations promulgated in 1961 and the Exchange Control Rulings with amendments as advised by way of Circulars issued from time to time, that govern transactions in foreign currency, executed domestically or cross-border.
 - › Competition Act, No. 89 of 1998 to control and evaluate fair competition in South Africa
 - › Protection of Personal Information (POPI) Act which regulate the processing and protection of personal Information.
 - › The Financial Intelligence Centre Act (FICA), No. 38 of 2001 introduced to fight financial crime, such as money laundering, tax evasion, and terrorist financing activities.
 - › Electronic Communications and Transactions (ECT) Act of 2002 that regulates electronic communications and transactions.



03 | Systems and Operators

03.1 | Settlement Services

The South African Multiple Option Settlement System (SAMOS) introduced in 1998 is the only settlement system in South Africa and is owned and operated by the SARB. The SAMOS has had various version upgrades since 1998 to cater for the following:

- i. **Continuous Processing Line (CPL):**
Delayed settlement facility developed to settle single transactions on a gross basis. Used to settle bonds for example.
 - ii. **Continuous Batch Processing Line (CBPL):**
Delayed settlement option that enables banks to meet only net obligations in a full batch. Used to settle equities, EFT, cheque, ATM and POS transactions.
 - iii. **Continuous Linked Settlement (CLS) System:**
Settlement system for foreign exchange trades and transactions are settled on a payment versus payment (PVP) basis.
 - iv. **Real-Time Line (RTL):**
Settling single transactions (generally high-value) immediately on a gross basis. Example is settlement of money market securities.
- The SAMOS system now caters for the settlement of individual high-value transactions, batched retail obligations, as well as financial-market obligations emanating from the bond and equity markets, thus enabling delivery versus payment (DvP). The SAMOS is in compliance with the BIS Core Principles for Systemically Important Payment Systems (SIPS).

In 2006 South Africa pioneered the first inter-bank real time clearing (RTC) payment system. This service was first launched between two banks, but has since been adopted by a number of other banks. This type of transaction is offered across select channels such as branches, call centres, the internet and cell phone banking. Prior to this, RTC payments between accounts were only possible on an intra-bank basis. **RTC requires the funds to be applied directly to the receiving account within 60 seconds.** The transaction values are limited to the item limits applicable. Real time transactions of higher value must still be routed via SAMOS.

03.2 | Payment Clearing House (PCH) system operators

The PCH system operators in South Africa are BankservAfrica, STRATE, Visa and MasterCard.

A. BankservAfrica

In 1993, the banking industry in South Africa jointly owned several companies that provided shared services to the banks through a variety of different payment channels. There was a need to consolidate all the separate systems used by the banks into a single structure. The banking industry reached an agreement in 1993 and founded Bankserv (now BankservAfrica) which is owned by the South African banking industry. BankservAfrica is the system operator responsible for clearing interbank obligations stemming from the retail payments environment.

BankservAfrica provides interbank electronic transaction switching services to the banking sector. Retail payment transactions include EFTs, cheques, card, internet and ATM transactions. At BankservAfrica the payment instructions are sorted and the interbank payment obligations of the participants are calculated. At predetermined times, the interbank obligations are submitted to SAMOS for settlement. No multilateral netting takes place within the clearing system or within SAMOS.



B. Visa and MasterCard

Cards issued by South African banks are affiliated to international payment associations such as Visa and MasterCard. South Africa don't have a domestic white label card scheme. Depending on card issuer preferences as well as the nature of the transactions, these transactions are cleared by the relevant payment association.

C. STRATE

South Africa's Central Securities Depository (STRATE) is responsible for the settlement of securities in South Africa. Equities, bonds and money market instruments are bought and sold through the stock exchange or in direct transactions between buyers and sellers. STRATE then determines the interbank payment obligations arising from these transactions, which are then settled in SAMOS.

03.3 | System Operators (SO) and Third Party Payment Providers (TPPP)

SOs are non-banks that provide services in relation to payment instructions, i.e. it provides electronic means (including the delivery to and / or receipt of payment instructions) to two or more persons to allow such persons to make payments and / or to receive the proceeds of payment instructions.

According to the SARB Directive 2 of 2007 all SOs need to be licensed by PASA and provide reporting to them. The Association of System Operators (ASO) was created in 2007 to provide for participation by non-banks in the formal payment system processes. The ASO had a total of 22 members by the end of 2014.

Clearing participants and registered non-bank TPPPs also participate in the payment system. Two types of TPPPs exist, namely Beneficiary Service Provider (BSP) and Payer Service Provider (PSP). TPPPs accept money or the proceeds of payment instructions from two or more payers. A TPPP is typically enabled by a SO, who provides the technology but does not accept the funds into their own account for on payment to another party. All TPPPs need to be registered by a sponsoring clearing participant with PASA.

EasyPay is one of the more prominent TPPPs in South Africa. Their business operates one of the largest bank-independent financial switches in Southern Africa. They focus on the provision of high-volume prepayment and value-added services to the South African market. EasyPay offers consumers a point-of-sale bill payment service which is integrated into a large number of national retailers, the internet, self service kiosks and mobile handsets.

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The bill payment service allows consumers to pay a number of bills, including municipal rates, water, electricity, Telkom, SABC, traffic fines, insurance and commercial accounts at pay-points across South Africa. Pay-points include national outlets such as Pick 'n Pay, Shoprite Checkers and SPAR. This is one of the main ways how South Africa solved the cash to electronic issue for billers.

There remains a continuous drive by the SARB to make access to the NPS easier for non-banks, but bearing in mind the additional risk they bring to the system.

04| Payments Moving from Physical to Electronic

04.1| South Africa Payments Market: Key opportunity drivers

The payments business in South Africa continues to have significant growth and has become a key source of revenue for banks and other payment service providers. Payments continue to move from debit pull transactions (e.g. cheques) to credit push transactions (e.g. EFT). Below are some of the key payment trends foreseeable in the future based on current growth rates.

	2014	2020
Increasing Issuance of Payment Cards	<p>> 99 million</p> <p>Estimated number of cards issued in South Africa as at 2014. Expected to Grow at 13% per year.</p>	<p>> 200 million</p> <p>An estimate of 80 – 120 million payment cards will be produced between 2014 and 2020 comprising of new issuances and renewals (due to loss, expiry, deactivation etc.).</p>
Rising Electronic Payment Adoption	<p>~ 76 %</p> <p>Electronic transactions (EFT, Direct debits and Card payments) make up about 76% of all transaction volumes (electronic plus cash withdrawals and cheques).</p>	<p>~ 85 %</p> <p>If the current increase in electronic payments continue > 85% of transaction volumes will be done electronically by 2020.</p>
POS Deployment Target	<p>400 000 POS</p> <p>POS density in South Africa is currently 760 per 100,000 people. This is relatively low when compared to developed markets.</p>	<p>> 600 000 POS</p> <p>Assuming the current growth trend in POS terminal deployment continues, South Africa will have > 600,000 terminals by 2020.</p>

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04.2 | The Physical Options

Although it is difficult to estimate the value of cash payments, a recent study of consumer spending approximate that 90% of retail payments in Africa are in cash, with the remaining 10% using electronic payment systems. South Africa as a more advanced economy is in a transition phase towards a “cash-light” society, with about 45% of retail payments electronic and 55% cash payments.

A. Cash Payments

Banknotes and coins in circulation outside banks in South Africa as at the end of December 2009 and December 2013 amounted to R61.8 billion (\$5 billion) and R87.0 billion (\$7.25 billion), respectively. This 9% compound annual growth over the 5 years indicates that the demand and usage of banknotes and coins remain relatively high by the general public in South Africa.

B. Cheques

The current view in South Africa regarding cheques is that they are outdated, expensive to process and vulnerable to fraud.

This is illustrated in the line-graph on the next page, with the value of cheques settled through SAMOS decreasing from R2.4 trillion (\$198 billion) in 2009 to only R500 billion (\$42 billion) in 2013. The cheque item limit reduced from R5 million (about \$400 000) to R500 000 (about \$40 000) in 2012 due to the fraud losses on high value cheques.

There are still a number of companies that prefer to pay by cheque, because the delay in clearing allows for cash float management. Cheques are used on a regular basis by the government to make payments. The challenge will be for the banking industry to convert its remaining cheque-using customers off cheques onto alternative payment methods.

04.3 | The Electronic Options

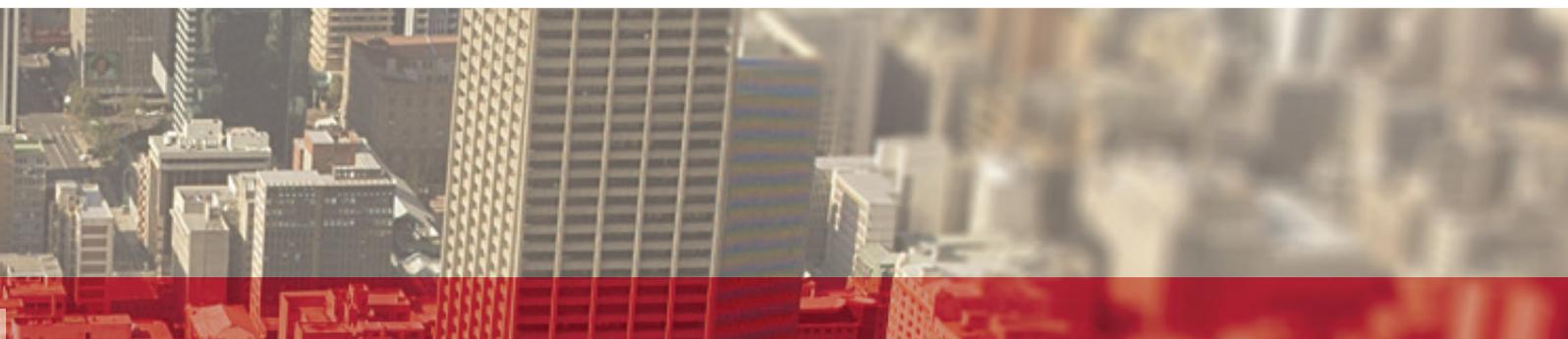
A. ATMs

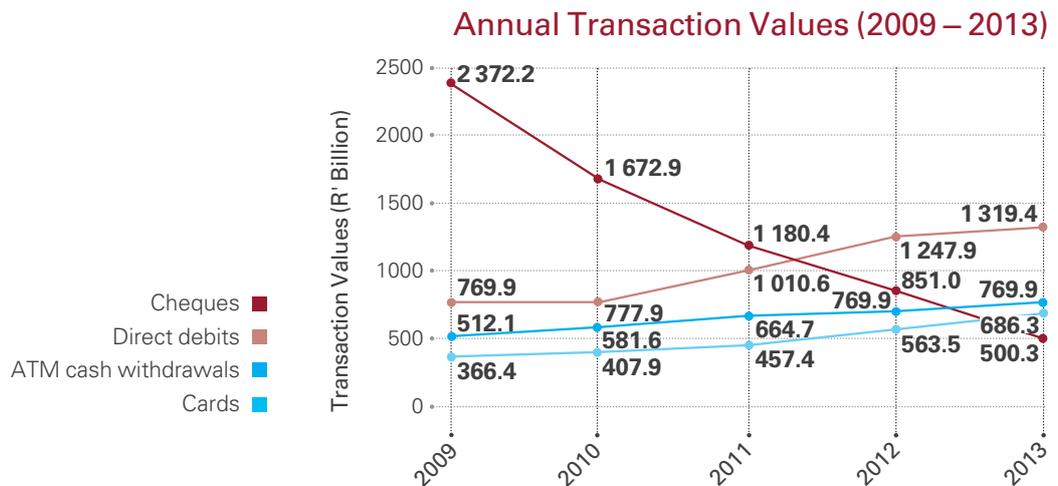
ATMs in South Africa are distributed throughout the country and are used extensively to effect numerous banking transactions, e.g. cash withdrawals, deposits, bill payments, fund transfers, balance enquiries, air-time purchases, etc. Cash withdrawals make up about 65% of all transactions performed on ATMs with balance enquiries, declined transactions and value added services making up the remaining. The total values withdrawn increased from R512 billion (\$43 billion) in 2009 to R764 billion (\$64 billion) in 2013. This increase is slightly higher than the expected inflation increase and could be a result of the increase in the number of ATMs, allowing more people to make cash withdrawals at remote locations.

The number of ATMs increased from 21 025 to 26 588 in the same period. This include bank-owned and bank-supported ATMs. The ATM market is dominated by Absa Bank, FirstRand Bank, Nedbank and Standard Bank. Capitec Bank is the challenger and has deployed a significant number of ATMs.

B. EFT credit

EFT credit payments are widely used by employers to pay salaries and are increasingly being used in place of cheques. The transaction values were not included in the line-graph due to the pure size when compared with the rest of the payment streams. The value of EFT credit transactions settled in SAMOS in 2013 was R6.7 trillion (\$558 billion) and increased by 57% since 2008.





Source: Bank of International Settlement (BIS)

C. Real Time Clearing (RTC)

The RTC is used by customers doing internet banking and selecting to accelerate payments by selecting the RTC payment stream option instead of the standard EFT credit. The payment instruction is immediately processed and the payee credited within 60 seconds. This option is more expensive to customers, but still had significant growth over the last 6 years, increasing from R13 billion (\$1.1 billion) in 2008 to R140 billion (\$12 billion) in 2013.

D. EFT Debits

EFT debits are used to collect monthly premiums, such as insurance policies, mortgage, medical aid contributions and hire-purchase payments. This payment option provides the payer with an economical and convenient way of making recurring payments. The value of EFT debit transactions increased by 48% from 2008 and the total amount settled through SAMOS in 2013 was R718.3 billion (\$60 billion).

E. AEDO & NAEDO

These two transaction types are an enhancement and variation of a basic debit order, allowing these transactions to be processed much earlier in the day than would be the case with other debit orders. The main difference between the two is the mandate, AEDO mandates are authenticated and therefore disputes are minimised. NAEDO does not support the card and PIN authentication like AEDO and therefore provides a weaker mandate and automatically more disputes. AEDO transactions settled through SAMOS increased from R3.4 billion (\$280 million) in 2008 to R6.6 billion (\$550 million) in 2013. During the same time NAEDO increased much more from R20.6 billion (\$1.7 billion) to R82.8 billion (\$6.9 billion).

F. Cards

Cards are widely used by South Africans and the fastest growing non-cash payment instrument in terms of volume of transactions. South Africa has 17 issuing participants (16 banks and one designated clearing participant, i.e. Postbank) in the NPS. South African banks offer Visa, MasterCard, American Express, Diners and Fleet cards. Transaction values increased from R366 billion (\$31 billion) in 2009 to R686 billion (\$57 billion) by 2013. The number of cards increased from 52,729 to 87,316 in the same period. Cards that are EMV compliant has increased over the years, but there is still a large number of debit cards in the market that are non-EMV compliant.

G. E-commerce

Card-not-present transactions have experienced good growth in South Africa. The card-not-present transaction values increased from about R12 billion (\$1 billion) in 2012 to over R24 billion (\$2 billion) in 2013. This made up about 3.5% of all purchase transaction values in 2013 and initial estimates indicate that it further increased to about 10% in 2014.

H. POS terminals

The acquiring business in South Africa is not as popular as the issuing side and this is demonstrated by the fact that there is only 6 acquiring banks in the NPS. POS terminals are deployed across the country and allows customers to purchase goods or services using their card, as well as withdrawing cash at the merchant's till. Most of the terminals are owned by the banks but some of the big retailers own their own terminals. The total number of bank-owned POS terminals increased from 236,626 in 2009 to 307,793 in 2013. Almost 100% of these terminals are EMV compliant.



I. Remittances

There are various remittance services available to customers in South Africa. Most of these are partnerships between a bank and retailer allowing customers to send money between retail stores. Some of the partnerships include Capitec Bank and Shoprite Checkers, Absa Bank and PEP, Standard Bank and SPAR. The different offerings are generally the same except for the verification methods of the payer and beneficiary that differs. The charge to send money is generally around R10 (\$0.8) per transaction.

J. Near-Field Communication (NFC)

NFC is a technology used by local banks that

has not had as much traction as expected. NFC technology allows a smartphone or card that is NFC enabled to communicate wirelessly with other devices by tapping them together. Numerous banks have issued cards with the capability but there remains a shortage of acquiring devices that except these payments.

The success stories have been in closed-loop systems, e.g. Absa Bank provides contactless NFC services to two transport networks namely ReaVaya (City of Johannesburg) and MyCiti (City of Cape Town) and Standard Bank deployed the Muvo card in the city of Durban that allows clients to make purchases and pay for public transport.

Outlined below is the growth trends in channels and cards in South Africa from 2009 - 2013:

Channels & Cards	2009	2010	2011	2012	2013
# ATM	21,025	23,259	24,063	25,471	26,588
# POS (Bank-owned)	236,626	273,798	277,478	276,448	307,793
# Cards	52,729	57,828	62,211	77,104	87,316

05| Mobile Banking and Payments

The SARB’s Position Paper on Electronic Money only allows registered South African banks to issue e-money in order to reduce the risk in the NPS. This means that South Africa follows a bank-led model unlike some of the other Africa countries like Kenya that follow a MNO-led model.

Various initiatives for mobile banking and payments have been undertaken in South Africa. There are three main ways South Africans use their mobiles for banking, the first is a mobile call to give a payment instruction (e.g. private banking), the second is a EFT credit (e.g. airtime purchase) and the third is logging onto their internet banking platform through the internet or by using a banking App.

Unfortunately the transaction volumes and values are not readily available because all the afore mentioned transactions are processed through an existing payment stream and there is no separate mobile stream.



05

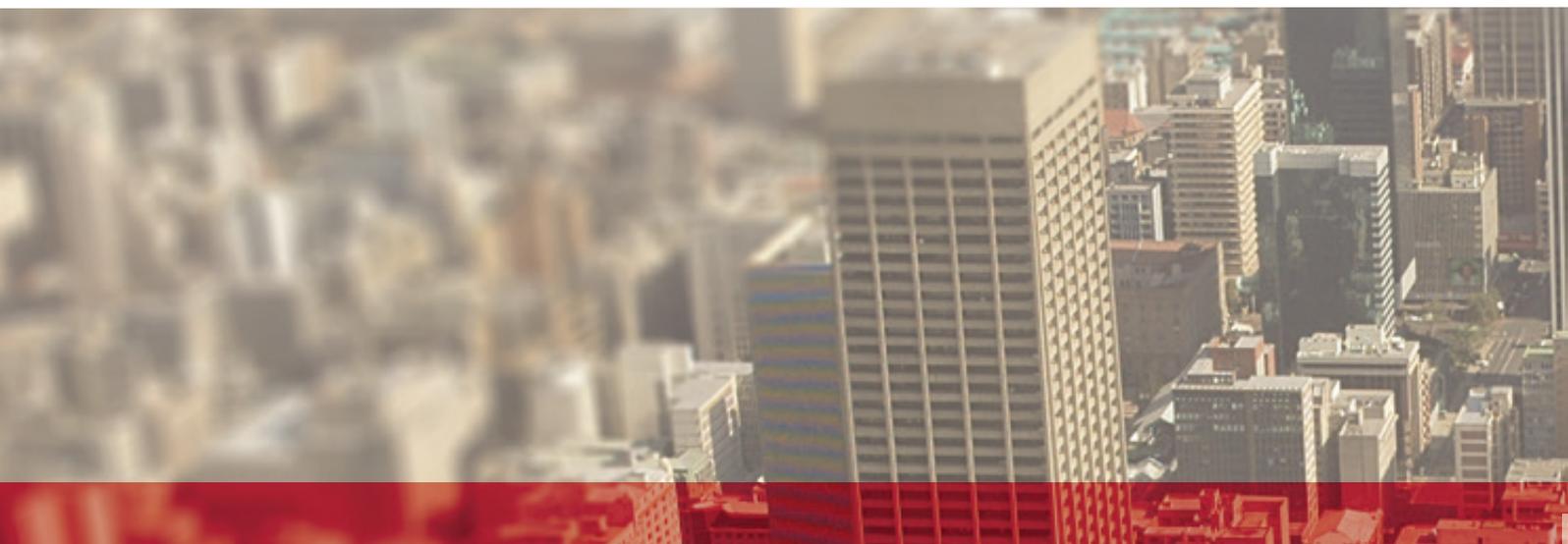
Despite the success of M-Pesa as highlighted in the Kenya country profile, the same model has not shown attraction in South Africa. Vodacom launched M-Pesa in partnership with Nedbank in 2010, targeting the unbanked population and expecting to sign up 10 million M-Pesa customers within three years. By the end of 2014 it was reported that the platform only had about 600,000 customers with very low transaction volumes.

Some of the key reasons highlighted for the failure was the lack of distribution and marketing, high transaction costs and the fact that the South African banking industry is more advantaged and already offered numerous other electronic payment methods (e.g. cards). Since then Vodacom has re-launched M-pesa in partnership with Bidvest Bank and the refurbished model now includes a prepaid M-Pesa Visa card, a chip-based card connected to the mobile money wallet which can be used at ATMs and POS terminals. Since South Africa follows the bank-led model having the physical card attached helps to facilitate transactions, given the ecosystem is not in place to accept mobile payments. It will be interesting to see if the re-launch has more success in the future.

Numerous other banks and MNOs came up with their own mobile banking features, for example Absa's Payment Pebble and Nedbank's PocketPOS that allows business owners to accept card payments through a smartphone or tablet. MTN has partnered with 10 banks for mobile money to transfer money using a mobile phone. Standard Bank partnered with SnapScan that allows consumers to download an app and add their credit card details by taking a picture of their card and creating a PIN. They can then use the app to scan a QR (quick response) code (type of barcode) in a store and make payments.

While individual banks have undoubtedly developed some great technology solutions, these can typically be used only by their own customers, i.e. bank focused models. This lack of interoperability is one of the key constraints preventing South Africa's banking industry from reaching every corner of the country.

One of the more successful mobile stories in South Africa is the mobile money transfer system that allows a customer to initiate a payment instruction to a beneficiary who does not have a bank account but owns a mobile phone. The beneficiary may then collect the funds from selected collection points or ATMs using their mobile phone.



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06| Key Developments and Challenges

06.1| Developments

A. New Card Interchange Rates

On 17 March 2015 the new card interchange rates became applicable as determined by the Interchange Determination Project. The biggest changes are the collapse of the hybrid card category altogether and a move from 3 different rates to 12 rates.

The hybrid card that previously attracted interchange fees of 1.09% will now mostly fit into the debit card category and attract lower fees. The debit card interchange fees came down from 0.55% to an average of about 0.44% and the credit card fees from 1.71% to an average of 1.48%.

The end result is a big reduction in fees earned for the banks and this will now be saved by the merchants through the merchant service charges. It will be interesting to see how the banks change their strategies and if the merchants pass the savings onto the consumer in the future.

B. Cross-border Remittances

The National Payment System Department (NPSD) is working with other regulators e.g. Financial Intelligence Centre (FIC), Financial Advisory and Intermediary Services (FAIS) and SARB Excon to introduce a cap on the value of remittances.

The rationale for this move is to ensure that domestic, regional and international remittances become cheaper and easier to use. The provision is that the remittances are initiated from a bank account and know your customer (KYC) is performed on both the sender and receiver of the money.

Balance of Payments (BoP) regulations for cross-border remittances would still apply, banks would need to do "bulk-reporting" of remittances for BoP.

06.2| Challenges

A. NAEDO Exploitation

Since the mandate for NAEDO transactions are weaker than AEDO, some rogue collectors exploit this option to prolong their bad practices.

This is evidence in the growth difference between the two noted earlier. There are various reports of unsuitable behaviour by collectors and their agents in this domain. This issue has led to the SARB launching a project with PASA to review practices within the early collections domain in the past.

The result of the review was an increase in the item limits for both AEDO and NAEDO from R5 000 to R10 000 in September 2013 and subsequently to R15 000 in March 2014.

The SARB also provided PASA with a terms of reference that focused on the enhancement of the authentication and mandate to address some of the shortcomings.

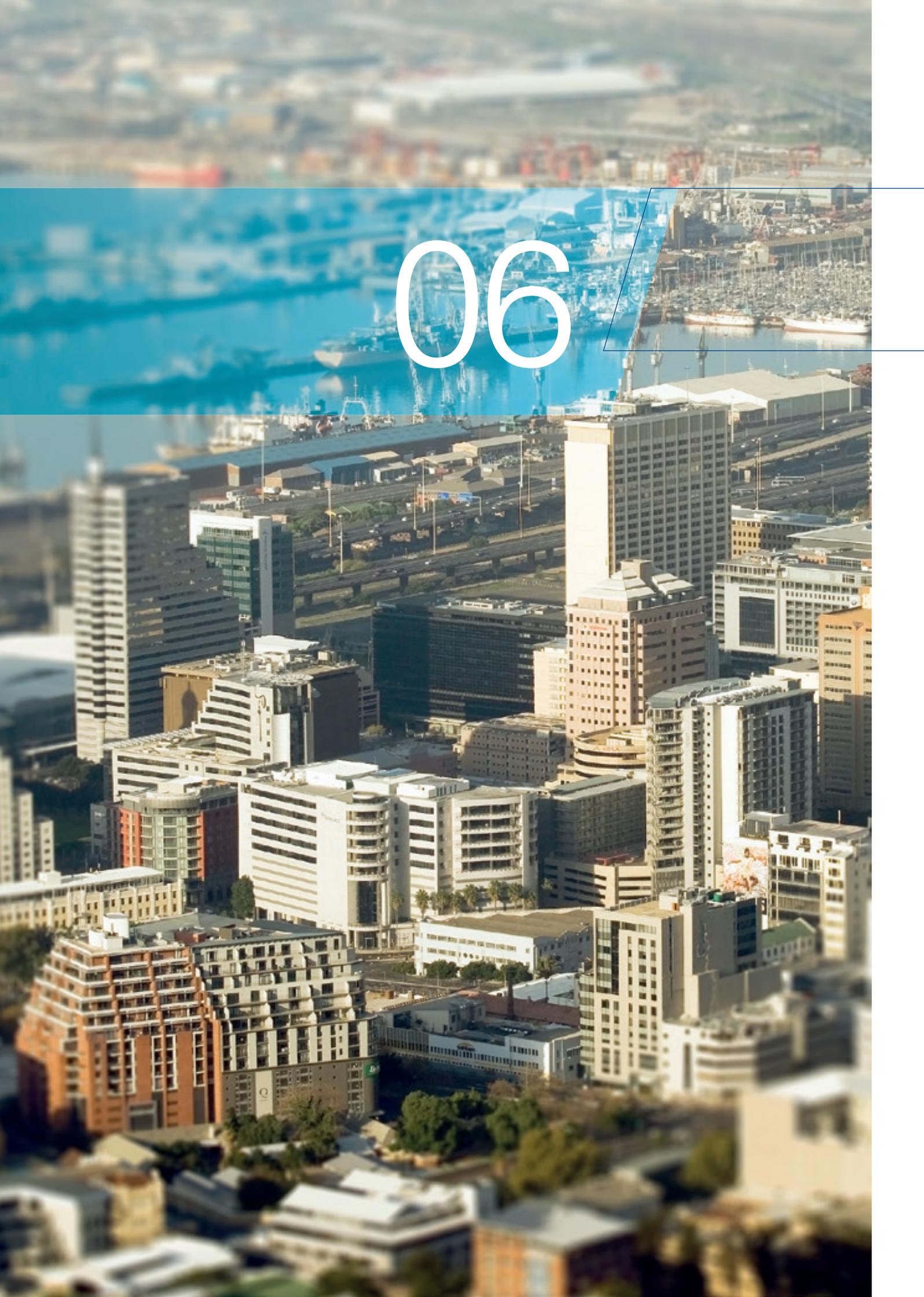
Progress has been made and a new solution with enhanced technology and standards is expected to be implemented in June 2015.

B. 3D Secure Compliancy

During March 2014 3D Secure became a recognised security standard for online transactions. 3D Secure is an additional security layer for e-commerce transactions

Most of the banks in South Africa comply with the requirement, however the uptake of 3D Secure at merchants remain relative low (especially for the airline industry). The reason often given by merchants for non-compliance is the fact that the 3D Secure screen display is not user friendly and could put customers off from processing the payment.

According to PASA the compliance penalty approach was recently finalised and a uniform approach to non-compliance will be followed with penalties being imposed on all non-complaint acquirers from 1 May 2015. A compliance incentive is also included in the new card interchange rates.

An aerial photograph of a city skyline, likely Cape Town, South Africa, featuring a harbor with numerous boats and a dense cluster of modern high-rise buildings. A semi-transparent blue overlay covers the upper portion of the image, with a white number '06' centered within it. The number is rendered in a clean, sans-serif font. The background shows a mix of urban architecture, including a prominent tall, thin skyscraper and several large, multi-story office buildings. The harbor area is filled with various vessels, and the overall scene is captured from a high-angle perspective, looking down on the city.

06

Featured Articles

Beyond PCI DSS and Interchange and Regulation

Beyond PCI DSS: Embedding Compliance in Banks DNA...

(Key lessons from the PCI DSS compliance, a Nigerian story)

Saying fraud has increased at an alarming rate in the Nigerian banking industry in the last few years would be stating the obvious. Not only have the losses increased but also the fraud types (See NDIC Fraud Statistics). Traditionally, fraud types were restricted to cheque kiting, cheque forgeries, outright cash theft etc. However, the increase in electronic payments has resulted in new fraud types such as Internet Banking Fraud, Counterfeit Cards/Skimming, Payment Application Fraud, Social Engineering, Phishing, Card Not Present (CNP) fraud etc. The common denominator (in many instances) for these frauds are Payment Cards.

NDIC Fraud Statistics

- » According to NDIC Fraud Report (released Nov. 2014), the banking sector recorded a total number of 3,756 fraud cases involving the sum of ₦21,79 billion (\$136.2m) [representing a 21 % increase from 2012] within the 2013 financial period
- » Report further stated that actual loss for 2013 is ₦5,8 billion (\$36.3m)
- » Some Industry observers opine that the NDIC fraud figures are significantly under-stated as fraud is not properly reported in Nigeria

PCI DSS Quick Facts

- » PCI DSS is a set of technical and operational requirements set by the PCI SSC to protect payment account data – Cardholder Data (CHD) and Sensitive Authentication Data (SAD).
- » Consists of common security best practices
- » PCI DSS v1.0 released Dec 2004
- » Current PCI DSS 3.0 released Nov. 2013

06

The Regulator's Response to the Fraud Issue

As expected, the Central Bank of Nigeria (CBN) was concerned with the level of fraud in the banking industry. In April 2010, the CBN issued a statement directing all ATM deployer's / acquirers (including banks) to comply with Payment Card Industry Data Security Standards (PCI DSS).

Banks initially did not take the directive seriously as only a few banks took necessary steps towards compliance. Realising this, CBN issued another statement in February 2011 re-emphasizing the need for compliance and also imposing penalties (with immediate effect) on non-compliance.

What happened next is similar to the confusion that ensues when a lion roars in the jungle (especially a loud roar). With the imposition of weekly fines as long as non-compliance with PCI DSS continued, banks ran helter-skelter looking for consultants to assist them. When banks run, their consultants also run with them. Some consultants had multiple appointments at the same time at different banks. At this stage, the requirement of the banks was simple: understand the 'monster' called PCI DSS and know the costs of compliance. At the end of the 1st set of presentations, most banks were confronted by two key challenges: high cost of compliance and project duration.

The Desperate Search for a Solution

Most banks were desperate for a solution, a low-cost solution that delivers PCI DSS in an unprecedented timeframe, which may never hitherto have been achieved in any part of the world. Subject Matter Experts (SMEs) from other parts of the world shared their PCI DSS experience: PCI DSS projects were major enterprise projects that not only impact different

functions in the organisation but also involve lots of system and process change/implementation. The SMEs opined that it took an average of 2 to 3 years for banks to comply with PCI DSS. Nigerian banks were not going to buy that; they wanted PCI DSS certification and they wanted it fast.

The Incredible Achievement, or not?

Months following CBN stipulation of penalties for non-compliance with PCI DSS, banks started announcing their achievement of PCI DSS certification in Newspapers. Some banks even bragged in the Newspapers of achieving PCI DSS compliance in just 3 months. Incredible!

No doubt PCI DSS consists of common security best practices (baselines), which when properly applied can improve the level of security of a bank. Achieving PCI DSS certification is potentially a big step in the war against fraudsters and hackers.

However, PCI DSS is card-focused and provides only a minimum level of security. Several high profile cases such as Heartland and RBS WorldPay where these companies had PCI DSS certification, yet suffered card data breaches have resulted in debates about the effectiveness of PCI DSS. Banks must realise that PCI DSS is just the beginning of having a robust security model, not the end.





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The Lingering Problem

Unfortunately, in the case of Nigeria, most banks were in too much of a hurry to achieve certification in order to avoid fines from the Regulator. It also became a veritable marketing tool to retain and attract customers.

Thus, a good number of banks reduced PCI DSS compliance to merely a paper box ticking exercise, which has everything to do with gaining a certificate and little to do with information security.

Performing a Penetration Test in some of the PCI DSS certified banks tells a worrying story of the state of information security. Highlighted below are some common security vulnerabilities (pre and post PCI DSS era) in Nigerian banks, derived from over a decade of performing Vulnerability Assessment and Penetration Tests (VAPT) for banks. Many of the issues have lingered for years for several reasons. One of the reasons for this is the attitude of implementing certifications mainly to satisfy regulatory requirements and as a marketing tool.

Some common Information Security Vulnerabilities in Banks

- » Sensitive information (such as log-in ID and passwords of customers) are stored in unencrypted files on certain e-payment systems server. The e-payment application is used by several banks to service important corporate clients for staff salaries and vendor payments.
- » Hundreds of payment cards linked to wrong accounts numbers on the core banking application. Consequently, ATM transactions were being debited to wrong customers account.
- » Critical patches from vendors are not applied to Operating systems resulting in compromise of key servers.
- » Bank website vulnerable to cross-site scripting. Consequently, customers could be redirected to fraudulent website and their log-on/card details stolen.
- » Default and easy-to-guess passwords used to administer critical operating systems and databases. For instance, Internet banking server is secured with a weak password (i.e. 'Jesus').
- » Fraudulent transactions due to non timely resolution of ATM related claims made.
- » EFT capture file which is uploaded into the core banking application was editable and prone to fraud.
- » Unlimited access to emails of staff including executives.

06

Embedding Compliance in Banks' DNA

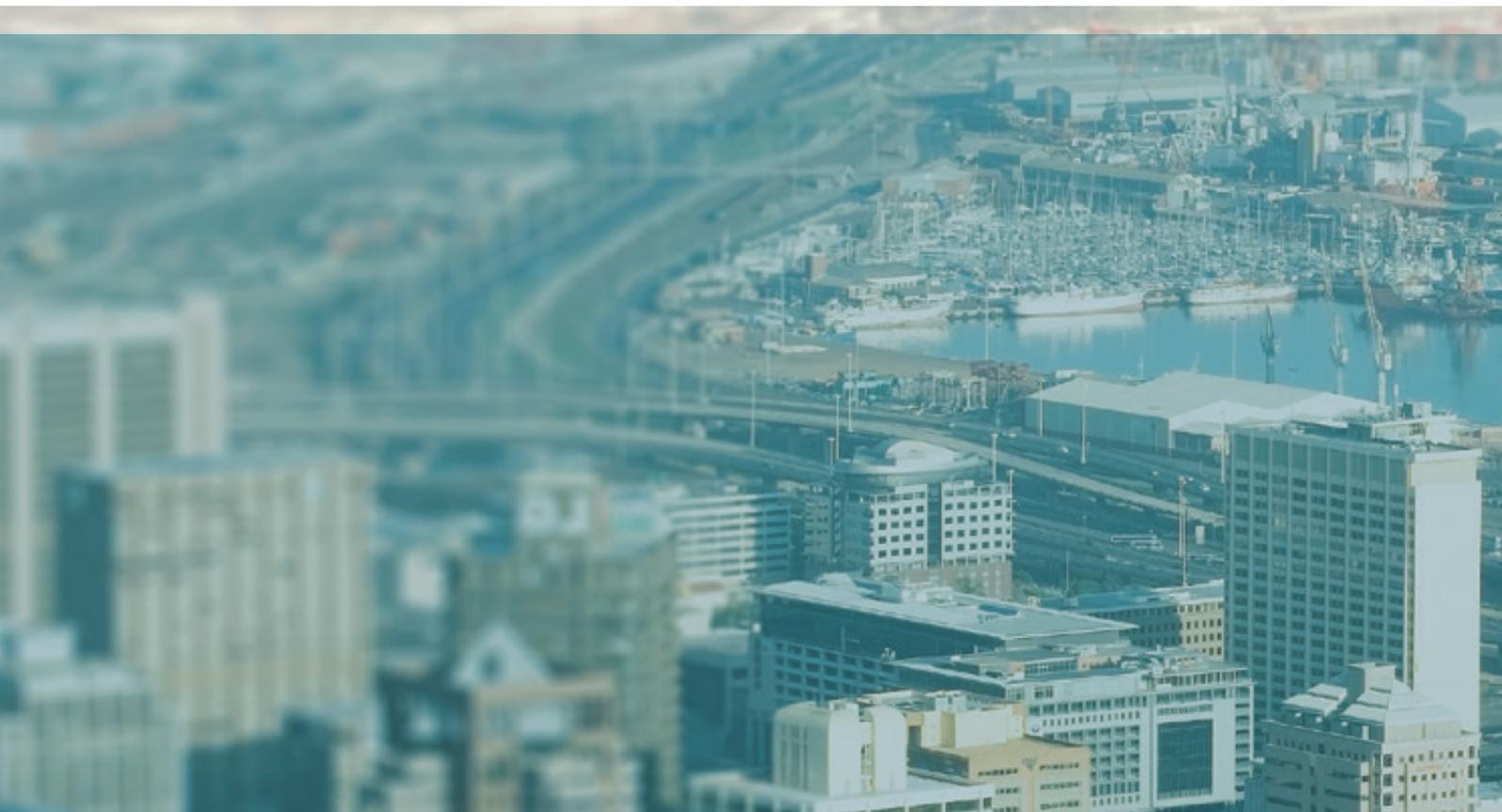
Beyond PCI DSS (and other certifications), banks must critically evaluate and seek to improve the overall information security environment. Compliance must be in the DNA of banks. They must seek to implement good security standards, whether or not driven by the Regulator.

To start with, they must ensure that information security is properly governed and managed in the organisation. Information security management seeks to protect a company and its assets (including customer information). It includes risk management, information security policies, procedures, standards, guidelines, baselines, information classification, security organisation, and security education.

Risk analysis identifies organization's assets, discovers the threats that put them at risk, and estimates the possible damage and potential loss an organisation could incur if any of these threats were to become real. Information security education and awareness takes this information to each and every employee within the company so everyone is properly informed and can more easily work toward the same security goals.

Banks must recognise that information security management is a continuous process which includes monitoring and evaluation of the systems and practices involved. One way to evaluate system and practices is through regular Vulnerability Assessment and Penetration Tests (VAPT).

It is pertinent to mention that banks must endeavor to select reputable consultants for penetration testing to avoid exposing themselves further to hackers.





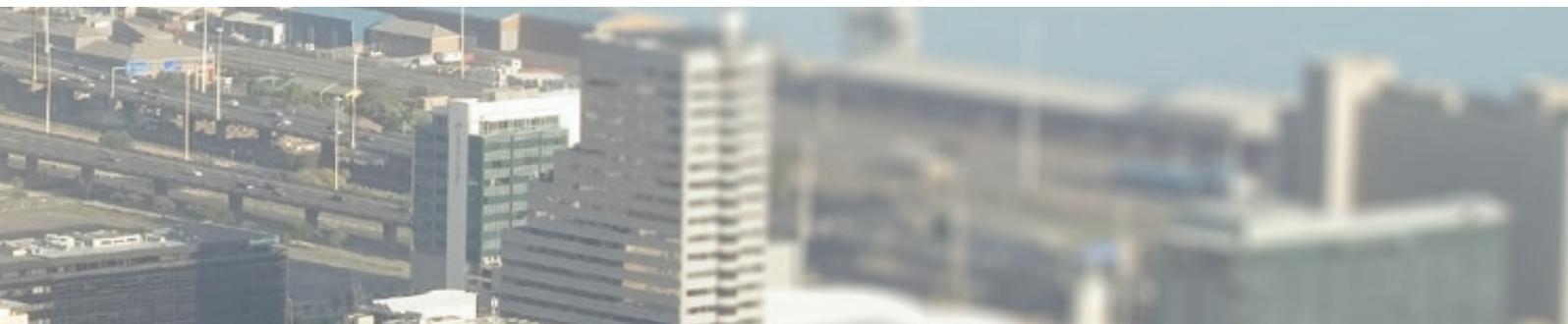
| SECURITY IN THE PAYMENTS VALUE CHAIN

/ Choose Your Penetration Testing Consultant wisely!

As a loving and caring husband, would you allow an 'unknown or untrusted gynecologist' perform an invasive procedure on your wife? Definitely not! The situation is similar when organizations buy penetration testing services. A penetration test is by far the most 'invasive' service you can buy from a consultant, as the consultant can potentially see 'everything' in the organisation. From IT configurations files and diagrams (such as firewall, router and switches configurations, network security diagram etc) to sensitive information (such as management accounts, staff cost, investments, customer transaction and balances, emails of C-level staff etc) to trade secrets, all these information may be accessed by the Penetration Tester in a matter of hours!

In view of the foregoing, it is very disturbing that banks use boutique firms for penetration testing thereby potentially exposing themselves and their customers to hackers and fraudsters. The reason usually given for this is cost. But the risk is just too high. First of all, most boutique firms do not have risk management practices that ensures confidentiality of the sensitive information they may obtain while performing a penetration test. Most of them do not have basic safeguards such as hard disk encryption to protect client data, in case their laptops get stolen.

In addition, most people know of black hackers and white hackers but not all of them are aware there is another class of hackers called 'gray hackers'. They are individuals who work defensively and offensively at various times. These individuals are very dangerous because they could work for banks as white hackers, obtain information and later use this information to hurt the banks. Please don't expose yourselves to consultants that could abuse you. Choose your PenTest consultant wisely!



06

Information Security – How Should it be Governed?

Information security has become a significant governance issue as a result of increased dependence on IT, increased sophistication of threat agents and exploits, increased regulations and legislations, rapid technological innovation and change, and an extension of banks beyond their traditional boundaries.

The framework for information security governance will consist of the following amongst others:

- › Guiding policies approved by the board of directors that provides direction for information security activities and responds to changing risks in banking (for example news risks associated with mobile payments).
- › Institutionalized process for information security operations that ensures compliance with policies and provides feedback (and escalation where necessary)
- › Effective security organizational structure that ensures the bank thrives and critical security issues are brought to the attention of the senior management and board of directors.

The last point raises a question which this article will focus more on: Should the IT department be put in charge of information security?

Putting the IT department in charge of information security responsibilities may have stunted the growth of information security in many banks. Information security is NOT the same as IT security. Information security has a much broader scope, where technology is not the focus but a means to the end. The priority of information security being the application of appropriate protection to the organisation's various types of information whether that is stored electronically (including on portable media) or on paper or even in individuals' heads.

In the past, there were discussions around who should be in charge of information security management. Some posit that the IT department is strongly placed to take this responsibility. But a review of what the function entails may suggest otherwise.

To be responsible for information security means taking the lead enterprise-wide in topics such as risk management (defining how to evaluate risk and what protection to apply), information security policies, procedures, standards, guidelines, baselines, information classification and security education and awareness.

This is not the forte of IT professionals, as they are not trained Risk Management professionals. Furthermore, more often than not, putting the IT department in charge of protecting the information assets they setup usually puts them in a situation of conflict.

For instance, when an external consultant is engaged to perform a Penetration Test and grave security issues are discovered, the IT department would typically 'sit on' the report and try to manage it 'in-house'. They typically would not permit the consultant to present findings to those charged with governance.

The consequences of this are far reaching for the banks as critical issues don't get the attention they deserve to ensure speedy resolution and prevent reoccurrence. Negligence in this regard not only diminishes the organization's capacity to mitigate risks but also ability to take advantage of IT for competitive advantage.





| SECURITY IN THE PAYMENTS VALUE CHAIN

Information Security – Driven by a C-Level Officer

The most important point is that information security is driven by a C-level officer who understands the risks and issues involved and has no conflict of interest. Given the structure in most banks in Nigeria, the information security function is better led and driven by the Chief Risk Officer (CRO).

In this case, the CRO either holds the Chief Information Security Officer (CISO) role or has a direct report that holds the position. Some bank CROs shy away from this responsibility because they feel they do not understand Information Technology.

They feel more comfortable with credit, liquidity and operational risk. Bank CROs must wake up to the reality that not only have IT and Payment Systems risks come to stay, they will keep on growing. IT and Payment Systems risks may in the future pose more threats to the organisation than credit, liquidity and operational risks.

Any CRO that does not have IT and Payment Systems risks on his/her dashboard or include it in Board packs is sitting on 'a keg of gun powder', which could explode anytime.

Like the 'protective layers of the onion skin', when information security governance is addressed, technical issues will be resolved because they will always get boardroom attention.

It is noteworthy to mention that a few banks already recognised Information security as a journey and not a destination. They did approach their PCI DSS compliance the better way- putting in place the right governance structure, ensuring a reputable consultant was selected to assist them and ensuring that controls were properly implemented in line with security requirements.

Certain banks even commenced their journey to ISO 27001 certification many years ahead of the industry with the goal of improving the information security environment.

Even at that, they must not become complacent, as Fraudsters continue to seek innovative ways of compromising an organization's information security. So a bit like a game of chess, banks have to try and second guess what the fraudsters will do next and ensure they and their customers are well protected.



06

Interchange and Regulation

Interchange fees have gained substantial focus around the world, as legislators and regulators try to reduce and / or cap the amount of fees financial institutions and the global card networks can charge merchants for accepting payment card transactions.

An examination of international developments showed that countries have adopted different approaches in addressing the interchange issue, ranging from legal / regulatory action to moral persuasion. In understanding the interchange dynamics you need to grasp the economics of interchange, and how this has been applied differently across the globe and how this is relevant to Africa.

Interchange in Context

The Bank of International Settlement defines interchange as “Transaction fee payable in the context of a payment card network by one participating financial institution to another, for example by an acquirer to a card issuer in respect of a card payment by the cardholder to the card acceptor.”

Interchange is a transfer of value paid or received by banks for the switching and clearing of transactions between banks. In contrast with payments in cash, where the payer pays the payee directly, other payment methods require an interoperable system when one or more banks are involved. The cost of this service needs to be charged and interchange becomes a charging mechanism.

By examining card payments the need for interchange is explained. With reference to the 4-party card model diagram, card payments are typically made when a cardholder buy goods or services from a merchant.

In order to utilise a card for payment, an issuing bank would first need to put a card in the hands of a cardholder. The issuing bank needs to incur numerous costs and follow various business processes to enable this. The merchant that sells the goods or services needs to have enabling infrastructure (provided and supported by an acquiring bank at a fee) in order to accept this electronic transaction. This is often referred to as the two-sides of the card market, namely issuer / cardholder and acquirer / merchant sides.

Interchange in this model is paid by the acquirer to the issuer. The rationale for this is partly to compensate issuers for the higher risks and costs they require for the commensurate benefits that retailers receive from accepting electronic payments (in the case of credit cards, the payment guarantee against fraud and cardholder default, the free-funding period, and the processing of incoming transactions).

“The risk of carrying and using cash is reduced in the card payment model”

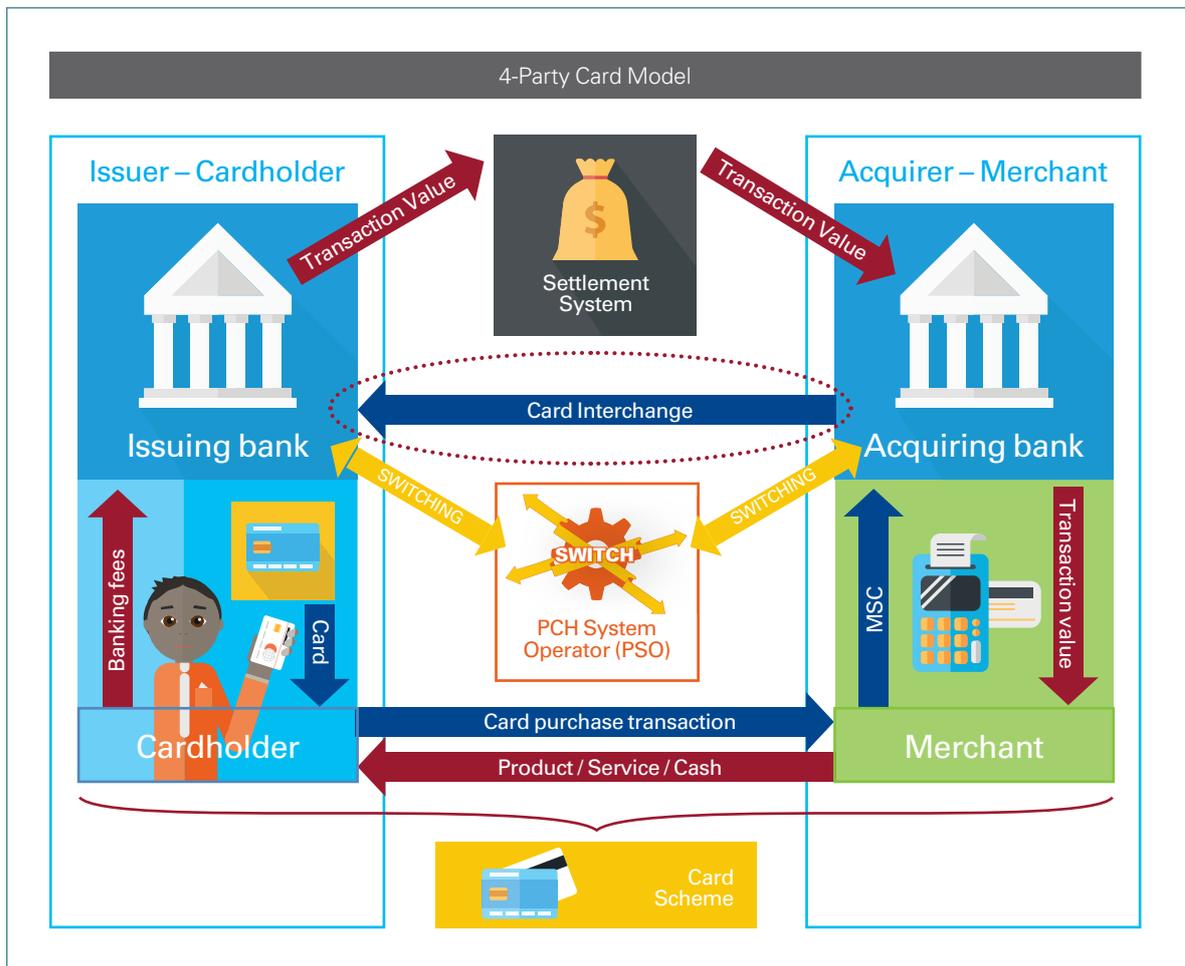




| INTERCHANGE AND REGULATION

Interchange therefore needs to compensate the players in the market for the cost and risks incurred and thus needs to balance the two-sided market, so as to maximise the number of electronic transactions versus cash / physical payments.

This model is in the best interest of all stakeholders as it moves the risk away from a cash dominated economy to more efficient electronic payments such as card payments at POS.



Interchange assists and promotes interoperability. Interoperability means that the cardholder from one bank (issuer) can make a payment to a merchant contracted by another bank (acquirer) and accept the cards of the relevant card scheme. Interoperability greatly expands the scope and flexibility of card-issuing, acquiring and usage by allowing acceptance of cards across the card network from different issuers and acquirers. Internationally interchange is mainly used in connection with card payments.

However, in some jurisdictions it is also used as a payment to a provider for the service which it delivers. The best example to explain this is by referring to an ATM transaction. If the customer of bank A (issuer) uses the ATM infrastructure of bank B (acquirer), also known as an off-us transaction, then a fee is payable by bank A to bank B for providing the infrastructure. This fee is often referred to as carriage fees rather than interchange.

06

Impact of Interchange

Considering that banks and, where applicable, service providers, charge for most transactions, be it cash withdrawals, payment card purchases, credit transfers, payment collections, etc, it implies that a payment ‘charge’ is in effect applied on every payment that takes place in the economy. These charges can either be in the form of banking fees or customer pricing. Banking fees are generally paid for services provided by your bank, while customer pricing is included in the price of goods and services sold by merchants.

“Retailers recoup the MSC through increases in the products or services they sell”

In the card model, interchange is recovered by banks through the merchant service charges (MSC) levied by acquirers onto the merchants (refer to the 4-party card model diagram). The interchange level inadvertently sets a floor / minimum level for the MSC. The acquiring bank will not allow themselves to be in a negative position where it can't cover the interchange payable to the issuing bank through the MSC. This results in the merchant including the MSC in their prices for goods and services sold and therefore the consumer ultimately bears the cost of interchange through the MSC that is included in goods and services prices. Because the issuing bank receives interchange every time their cardholder swipes his card, no additional bank fees should be charged by the issuing bank to their cardholder. Banks have packaged this very cleverly by offering certain customers “free card swipes”. By understanding the economics, the more card swipes the more interchange received and thus the offering of “free card swipes” is a justifiable business decision by issuing banks.

In order for the 4-party card model to operate effectively, the system needs to be of benefit to all participants. What is an ideal interchange level? An ideal interchange level will compare the value generated by card payments (such as savings in overall cash handling cost, additional sales, higher ticket value per transaction) with the cost to provide a card service.

“High” interchange fees will automatically cause high MSC, that results in unsatisfied merchants, reluctance to accept card payments and eventual lawsuits (as highlighted in the case studies later in the article). Similarly, if interchange fees are to “low” there will not be enough incentive for issuing banks to continue to issue cards and promote the reduction of cash usage. This normally results in higher cardholder fees and a reduction in benefits as issuers attempt to compensate for any reductions in interchange fees.

A similar principle applies for carriage fees. If the carriage fee is set to low or non-existent then there will not be an effective means of compensating the ATM service provider in off-us transactions.





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This could result in banks not allowing other bank's customers to use their ATMs and discourage further investment in expanding ATM services and infrastructure. If carriage is set to high, then the customer could potentially be penalised with high bank fees to compensate for the significant fee and banks could also decide to invest further in their ATM infrastructure and services because of the potential revenue benefit. This leads to inefficiencies in the payments market and an overall increase in costs to the consumer.

“The right level of interchange is used to balance cost, risk and rewards for merchants”

In the process of interchange determination, and subsequent regulations and / or policy frameworks, we should not lose sight of the primary objectives, to reduce the dependence on cash (due to associated risks) and increase the use of cards to promote electronic transactions, thereby reducing the risks and costs in the payments value chain and promote the safety and efficiency of payments.

International Developments on Interchange Regulation

Interchange reform initiatives have taken place in numerous and diverse economies over the past decade. By the end of 2014, at least 38 countries were reported that the Public Authority became involved in either steps to reform interchange practices or had initiated investigations into interchange practices. The following four international case studies are reviewed: Australia, United States, European Union and United Kingdom.



06

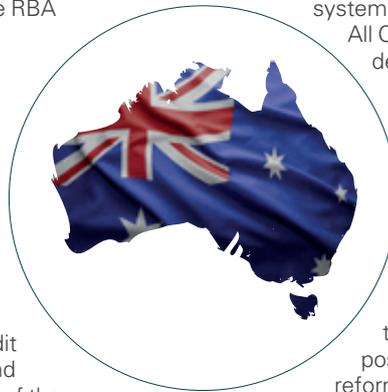
Australia

The payments system reforms in Australia have been progressively implemented over a number of years. The Reserve Bank of Australia (RBA) has gone to great lengths to bring payment system interchange fee structures to order. This has resulted in Australia being one of the most referenced case studies when it comes to interchange regulation.

The first notable study in Australia was the Wallis Inquiry in 1997 that concluded that Australia's payment system fell short of international best practice in terms of efficiency, and that the overall cost of their financial system was high when compared to other countries. In light of this, the RBA and the Australian Competition and Consumer Commission (ACCC) completed a study called "Debit and Credit Card Schemes in Australia - A Study of Interchange Fees and Access" (also known as the Joint Study).

Based on the results, a number of important initiatives have been introduced since then, with the two major reforms for credit cards (The Reserve Bank's Reform of Credit Card Schemes in Australia - 2002) and debit card interchange fees (Reform of the EFTPOS and Visa Debit Systems in Australia - 2006).

The credit card reforms mandated that a cost based methodology for setting interchange fees would become effective from November 2003, merchants were allowed to surcharge¹ on credit cards and access to card schemes was opened to non-financial



organisations. The debit card reforms were introduced in November 2006 and included revised interchange fees for both scheme debit and EFTPOS (Australia's domestic debit card) designed to bring the difference between the interchange fees of these two debit systems closer. It also eliminated the "Honour All Cards Rule²" as it applied to scheme debit and scheme credit cards. In 2013 the RBA implemented the new EFTPOS interchange fee standards.

The result of interchange regulation in Australia is well published with mixed opinions on whether it had a positive or negative impact on the market as a whole. The RBA themselves generally present a positive view of the consequences of the reform process for the following reasons: the efficiency of the payments system that has improved by providing better price signals to cardholders, card usage continued to increase, card issuers improved their efficiency, and the merchants' lowered their costs which are now evident in the lower consumer prices due to the competitive environment in which most merchants operate.

"Regulation now governs card interchange in Australia"

¹ - Refers to the practice whereby the merchant charges the cardholder a fee, in addition to the transaction amount for the use of a payment card.

² - The "Honour All Cards Rule" states that if a card brand is accepted, all cards issued under that brand must be accepted.





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United States (US)

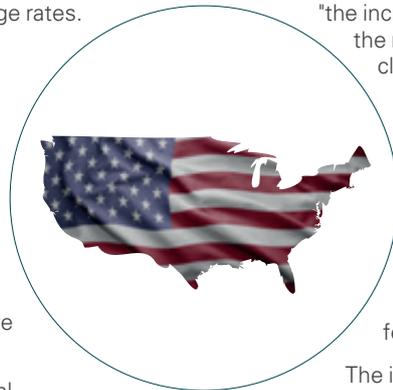
“Big merchants carry heavy weight in the US”

The first developments in the US was in 1996 when Wal-Mart and other merchants brought a class action lawsuit on behalf of all merchants against Visa and MasterCard, alleging violations of the antitrust laws. Despite the ongoing litigation, Visa and MasterCard continued to raise their debit interchange rates in the late 90s.

After seven years, Visa and MasterCard finally settled the litigation and agreed to pay merchants \$3 billion. They also allowed merchants to accept credit cards without taking debit cards and temporarily lowered their debit card interchange rates.

The Welch-Shuster Credit Card Interchange Fees Act of 2009 followed and required credit card companies to disclose their swipe fee rates, terms, and conditions. The bill also empowered the Federal Trade Commission to review these rules and prohibit any practices that are found to be anticompetitive, unfair or deceptive to consumers.

In the summer of 2011, the Federal Reserve Board (FRB) of Governors stepped in and issued a final rule governing debit card interchange fees. This regulation, named Regulation II (Debit Card Interchange Fees and Routing), was required by the Durbin Amendment to the Dodd-Frank



Act. The Durbin Amendment instructed the Board to adopt rules that would ensure the interchange fees banks received were "reasonable and proportional" to cost. The amendment said the FRB should consider "the incremental cost incurred by an issuer for the role of the issuer in the authorisation, clearance, or settlement of a particular electronic debit transaction" but should not consider "other costs incurred by an issuer which are not specific to a particular electronic debit transaction." The regulation, which went into effect in October 2011, limited the maximum permissible interchange fee on debit card transactions. This cap resulted in about a 45% reduction in interchange fees for debit card transactions in the US.

The impact of the intervention by the Federal Reserve Board is described in a similar fashion as to the RBA intervention with mixed views on the success thereof. Interestingly, credit card interchange fees remain unregulated in the US and the MasterCard and Visa interchange fees are some of the highest in the world.

“Under Dodd-Frank Act interchange fees should be reasonable and proportional”

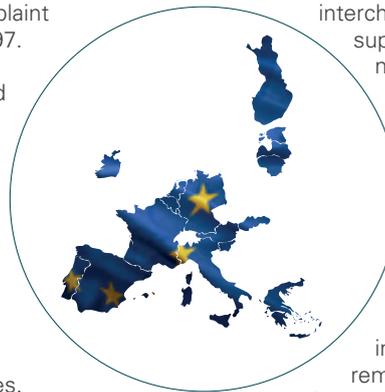
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European Union (EU)

“EC ruled MasterCard’s multilateral interchange fees were in violation of the EC Treaty rules”

Over the last 20 years, the European Commission (EC) and national competition authorities have conducted a number of antitrust proceedings addressing anti-competitive practices in the card payment market.

The EC’s investigation was initially based on a series of notifications that MasterCard’s legal predecessor, Europay International S.A., submitted between 1992 and 1995, as well as on a complaint submitted by EuroCommerce in 1997. After two statements of objections and a hearing in 2006, the EC agreed to do additional fact-finding and analysis. In 2007 the EC decided that MasterCard’s multilateral interchange fees (MIF) for cross-border payment card transactions violated EC Treaty rules on restrictive business practices. The Commission concluded that MasterCard’s MIF inflated the cost of card acceptance by retailers without leading to proven efficiencies. MasterCard had six months to comply with the Commission’s order to withdraw the fees. In 2008 MasterCard filed an appeal to the decision of the EC.



At the same time the EC reached an agreement with Visa in 2002 to reduce its cross-border interchange fees by 2007. The benchmark set for Visa interchange fees was at the level of the cost of supplying Visa payment services and could not exceed the cost of the services which issuing banks provide, wholly or partly, to the benefit of merchants.

In November 2009, the “Guidance for the Implementation of the Payment Services Directives (PSD)” was implemented across Europe. The PSD applied to firms providing payment accounts; executing payment transactions; issuing payment instruments and providing money remittance services. It required firms to become an authorised payment institution or a registered small payment institution, and to be subject to regulatory capital requirements and conduct of business rules.

“PSD implemented to authorise and register firms providing payment services in the EU”





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A General Court judgment in 2012 confirmed the EC's finding in its MasterCard Decision of 2007 that MIFs restrict competition. The Court rejected the argument that MIFs were indispensable for the functioning of

a payment card system. To address the competition concerns, the EC has accepted commitments by Visa and MasterCard to charge lower MIFs for cross-border (and some domestic) transactions.

“The EC capped interchange fees in the hope of merchants passing on their savings to consumers”

In 2013 the EC published its proposals for a revised Payments Services Directive (PSD2) which will cancel and replace the existing PSD and a Regulation on Multilateral Interchange Fees (the Interchange Fee Regulation). The proposals will prohibit surcharging and impose a cap on interchange fees of 0.2% for debit cards and 0.3% for credit cards (except for 3-party schemes such as AMEX and commercial cards). The caps are expected to become effective during 2015 and apply to cross-border card payment transactions at first. The next step is then for the caps

to apply on domestic card transactions. The proposal was approved by the European Parliament in 2014.

The EC expects this to result in significant cost-savings for merchants and, due to the prohibition on surcharging, cheaper goods and services for consumers. It also expects that reduced bank revenue from interchange fees should be offset by increased payment volumes using methods other than cash.



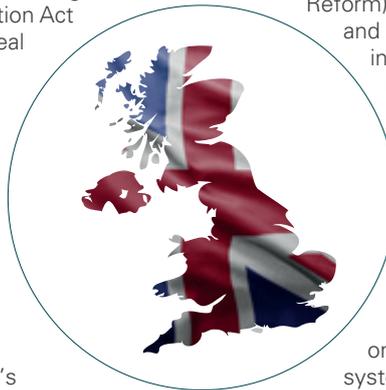
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United Kingdom (UK)

To date, interchange fees have not been subject to regulation within the UK. However the Office of Fair Trading (OFT) has been relatively active in this field during the past decade. In 2005 it ruled that the agreement between members of MasterCard UK Members Forum on interchange fees infringed both the EC Treaty and the Competition Act 1998. In 2006, the Competition Appeal Tribunal (CAT) overruled the OFT's decision. During the same time the OFT launched an investigation against MasterCard's new arrangements for setting fallback interchange fees that were introduced in 2004.

After this the OFT, on behalf of the UK government, intervened at the General Court and the Court of Justice to support the EC to defend its decision in 2007 that MasterCard's European interchange fee arrangements infringed competition law, thus setting an important legal precedent. After 2007 the OFT and CAT awaited the outcome of developments between the EC and Visa / MasterCard.

The OFT also played an important role in making a case for the establishment of the UK Payment



Systems Regulator (PSR), which became fully operational on 1 April 2015.

The PSR was incorporated on 1 April 2014 and became fully operational on 1 April 2015. The PSR has the powers, under the Financial Services (Banking Reform) Act 2013 (FSBRA) to give directions and impose requirements on participants in regulated payment systems, including operators and payment service providers. It will also have the power to vary the fees, charges, terms and conditions provided for in agreements relating to payment systems. The PSR is also the concurrent competition authority with powers under the Competition Act 1998 and the Enterprise Act 2002. There is currently consultations on the designation of those payment systems to be regulated by the PSR, but this is expected to include the MasterCard and Visa card payment systems. It is also expected that the PSR will be the competent authority for the enforcement of the Interchange Fee Regulation (IFR). The PSR will assess what, if any, actions it might need to take regarding domestic interchange fees using its powers.

“OFT set an important legal precedent by declaring MasterCard’s interchange fee arrangements infringe on Competition Law”

There is a number of similarities between the four case studies, with the most important one being the need for transparency and fairness in interchange fees. Generally, the issue of interchange first appears as card payments displace cash payments and the MSC becomes a burden for merchants. The consequence is various reports on interchange and complaints by merchants that ultimately leads to a formal investigation by a regulatory authority.

The regulatory authority then typically recommends an independent, objective and transparent regulatory process for determining appropriate interchange rates. Most central banks take this responsibility upon themselves and put the required regulation in place to formally regulate interchange rates. The method used to determine the appropriate interchange rates differs, the RBA and FRB both used a cost-based methodology, whereas the EC selected to use the Merchant Indifference Test¹.

¹ - The 'Merchant Indifference Test' identifies the fee level a merchant would be willing to pay if he were to compare the cost of the customer's use of a payment card with those of non-card (cash) payments.





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Africa Case Study

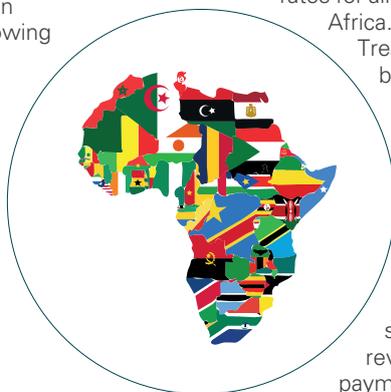
Interchange fees and regulation is also evident in Africa. The only current example in Africa is South Africa. In South Africa it started in 2003 when a Task Group was established by the South African National Treasury to undertake a study on the competitiveness of the South African banking industry. This report entitled "Competition in South African Banking" was released in 2004. Following on the recommendations of the Task Group, the Competition Commission (CC) reached a decision that a more comprehensive and comparative study into the issues around the payment system was essential. FEASibility (Pty) Ltd, an economic research company were appointed to provide such a study. FEASibility's report entitled "The National Payment System and Competition in the Banking sector" was completed in 2006.

Based on the findings and recommendations of the two reports, the CC initiated the Banking Enquiry in 2006. The enquiry included a review on access to the payment system by would-be service providers (banks and non-banks) and charges levied by banks for payment transactions. The Banking Enquiry Report made various recommendations, of which the following relates specifically to interchange: "We recommend that an independent, objective and transparent regulatory process for determining

interchange in the payment card and other relevant payment streams be effected and enforced as soon as practicable."

The South African Reserve Bank (SARB) proposed a Bank-facilitated and overseen revision of interchange rates for all relevant payment streams in South Africa. This was supported by National Treasury and the CC and was endorsed by the SARB's Governors' Executive Committee.

The first step in the Interchange Determination Project (IDP), namely Phase 1 started in 2011 and was conducted by Dr. Philip Tromp. The main aim of the initial study was to provide information that would enable the SARB to finalise the overall scope of the project. This included a review of interchange rates applied in all payment streams in terms of whether they are feasible and / or justifiable in the particular stream and are set at realistic and appropriate levels based on acceptable parameters; and to make the components of interchange transparent. The Phase 1 report concluded that interchange rates were a necessary part of the incentives to roll out and maintain the infrastructure required to provide the various payment services, thereby creating interoperability and efficiency within the payment system. In addition, the study recommended that ATMs and Cards be addressed first.



"Competition Commission recommended that an independent body investigate and determine interchange fees in South Africa"

The SARB's National Payment System Department (NPSD) contracted KPMG in 2012 to facilitate Phase 2 of the IDP under the direction of the SARB. The overall objective of the project included the evaluation and determination of costs to provide payment services in a particular payment stream, from which appropriate interchange rates were determined. Phase 2 followed a very consultative approach with numerous interactions between stakeholders, including participant banks, payment system operators, payment system providers and merchants. This was done to ensure that all stakeholders had an equal opportunity to provide recommendations and inputs.

Stakeholders provided positive feedback on this approach and appreciated the opportunity to voice their opinions. The project was structured to include a survey (with both qualitative and quantitative information requested), data collection and analysis, stakeholder interviews, building of a costing model (including option analysis) and implementation planning. Phase 2 of the IDP was completed in 2014 and the revised interchange rates for ATMs ("Interchange Determination Project, Phase 2 ATM results") and Cards ("Interchange Determination Project, Phase 2 Card Results") have been implemented by the industry.

06

Conclusion and Pointers for other African Countries

Other African countries can benefit from the journey taken by the central banks highlighted in this article in their efforts to address the interchange process in terms of the following:

01| Independence and Transparency

Reform initiatives, based on economic fundamentals need to be driven by a neutral party whose objective is the safety and efficiency of payments, therefore the Central bank would aptly fit this role. This could benefit the economy, the safety and efficiency of the

payment system as a whole and merchants, as well as the consumers. Most central banks in Africa are already responsible for determining interbank fees and therefore are in the best position to take ownership of an interchange determination project.

02| The Approach Adopted

The SARB's case study has demonstrated the positive effect of a comprehensive and consultative approach to interchange reform. To effectively resolve the interchange determination issue and introduce interchange fees that are fair and widely accepted as being so, requires the participation of all stakeholders.

This approach improves the transparency of payment instrument pricing in order to provide the consumers and merchants with the necessary information to make informed decisions, including banking fees associated with payment transactions and interchange fee levels with the rationale for such fees.

03| The Methodology Adopted

There are numerous schools of thought to the methodology or approach to be used for accurately calculating interchange. The economics behind interchange is that of issuing cards and using them at merchants which talks to the basics of economics with demand and supply. There are costs to supplying and meeting the demand of users. These costs need to be covered in order for the system to function optimally.

Therefore it is no surprise that the cost-based methodology is the most used internationally and has the approval of competition authorities. This methodology aims to determine industry norms for the different costs associated with each particular payment instrument and consolidates these costs into an interchange rate per instrument that applies across all clearing participants and merchants.





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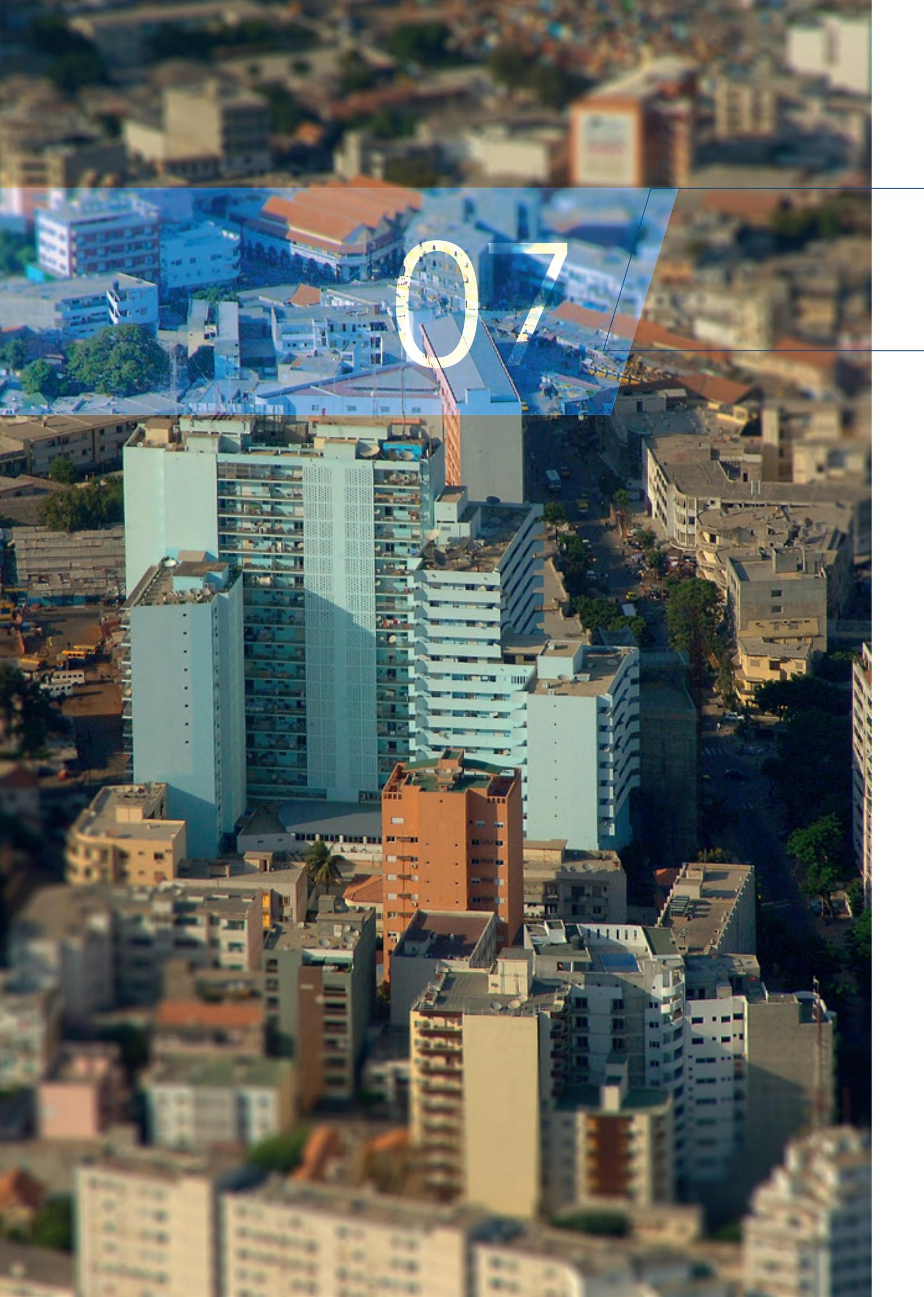
04| Qualitative and Quantitative Analysis

An interchange reform or review exercise needs to be relevant to the market it operates within as well as the players and their associated banking models. Thus, it is imperative that data needs to be collected and analysed from a quantitative perspective. Further to this qualitative factors do need to be considered, the economic growth of the country, the players, the nuances of each market. Once an interchange fee is determined it can have a huge impact on the system operations, this can be negative or positive. Having

clearly defined principles and following a fact based analysis approach, not only keeps the reform aligned to the original principles but also creates buy-in and support from the stakeholders. Once interchange is set it does need to be monitored across the relevant payment streams. As a central bank the interchange data collected aids them in their oversight role to assess the market, the behaviours, the innovations and to regulate interchange.

As the Africa continent continues to move towards electronic payments and away from the more expensive and risky cash payments, it is important that central banks are pro-active in dealing with interchange. This promote the safety and efficiency of the payment system and will prevent onerous and expensive enquiries, as well as ensure that all stakeholders understand the foundations that interchange is based on.





07

Conclusion, Acknowledgements and References

07.1 | Conclusion

We have come to an end of our 1st edition where we have profiled three prominent African countries payment system developments. The study of each profiled country demonstrates the key payment trends and what the respective central banks are focusing on. Undoubtedly, there is still a long way to go, but looking at the developments over the past five years, the writing is on the wall... "Africa is on the rise".

The featured articles provide valuable insights into two key areas where most central banks, across the world, are shining the spotlight on. We see these topics becoming a bigger focus for central banks on the continent as they grapple with the ever-changing technology, fraud, cyber-crime, pricing and consumer protection.

As seen from our study there are three key themes emerging from the current payments environment:

- › This is truly a silent revolution for financial services as we know it and, as in other environments, will challenge retail banks.
- › Africa has the unique ability and opportunity to leapfrog legacy systems by leveraging new technologies and payment delivery channels.
- › The developments in payments will challenge regulators just as M-Pesa did, to be more proactive and provide a framework which enables growth and aligns with their agenda of moving from cash to electronic; more efficient services and financial inclusion.

KPMG will continue to monitor and provide the latest thought leadership and guidance to our clients in order for them to take advantage of the changing face of payments.

Insights on, bridging the great-divide between remittances, financial inclusion, regulation and de-risking.

07.2 | Acknowledgements

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