KPMG

Payments developments in Africa

Emerging new technologies

Volume 3

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Foreword

Africa's payments landscape is becoming more integrated, with deliberate and concentrated efforts towards modernisation of various payment infrastructures. At the same time, the integration of national payments infrastructure into regional payments systems is setting the foundation for continental-wide payment integration. Africa's payment system continues to rapidly evolve.

In this report, the third in our ongoing series, KPMG's Africa banking leaders offer a broad perspective on payments developments in Africa. Our focus is on helping to guide and position private and public organisations as they make their next strategic leap by harnessing the opportunities now emerging across the continent.

In our previous editions, we examined a number of key payment markets in Africa, highlighting key challenges and opportunities. We also took time to explore how Africa's financial services disruptors and Fintechs are redefining the competitive landscape – driving digitisation, promoting financial inclusion and creating new markets.

In this edition, we continue our overview of key markets with a profile of Botswana and Uganda, two markets that – while at varying levels of payments maturity – are investing in scaling their electronic payments infrastructure. This report shines a spotlight on the Southern Africa Development Community (SADC) regional payments landscape, highlighting key milestones, legal and regulatory frameworks and governance structures. It also offers valuable insights and regulatory updates for markets covered in our previous editions – South Africa, Nigeria, Kenya, Ghana and the WAEMU.

Continuing our focus on digitization, innovation and transformation in Africa's payments landscape, this edition starts to take a deeper look into how emerging digital technologies are revolutionising payments in Africa. With the adoption of digital channels increasing across the continent, we also offer important considerations for managing some of the emerging cyber security threats.

This report is based on KPMG's broad regional and local experience, extensive knowledge and understanding of payment reforms, strategy and innovation in Africa. As such, we believe it serves as a valuable resource and source of inspiration for financial institutions, regulators, investors and consumers as they explore the challenges and opportunities of Africa's payments sector.

To learn more about the issues raised in this report – or to discuss the unique challenges facing your organisation – we encourage you to contact your local KPMG member firm or any of the contacts listed at the back of this publication.

Bisi Lamikanra
Partner & Head,
Financial Services Africa

Overview of the Payments Developments in Africa series

In the first two volumes of Payments Developments in Africa, we explored many of the region's biggest trends and highlighted key markets. This edition continues that tradition.

Volume 1

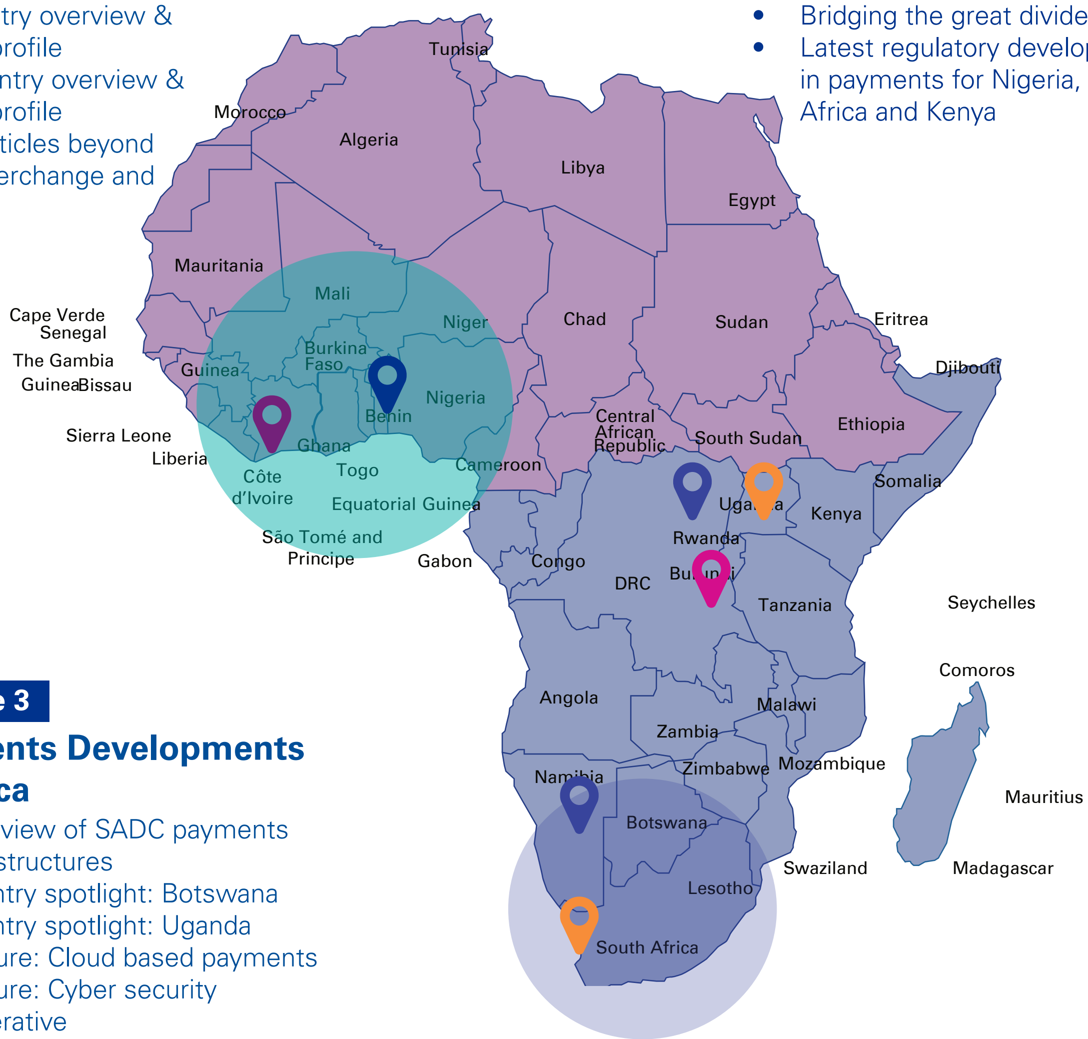
Payments Developments in Africa

- Africa overview of the study & trends
- Case study how Brazil is solving the payments puzzle
- Kenya country overview & payments profile
- Nigeria country overview & payments profile
- Featured articles beyond PCIDSS interchange and regulation

Volume 2

Payments Developments in Africa

- Country spotlight: Ghana
- Country spotlight: Tanzania
- Regional spotlight: WAEMU drives regional payments cooperation
- Bridging the great divide
- Latest regulatory developments in payments for Nigeria, South Africa and Kenya



Volume 3

Payments Developments in Africa

- Overview of SADC payments and structures
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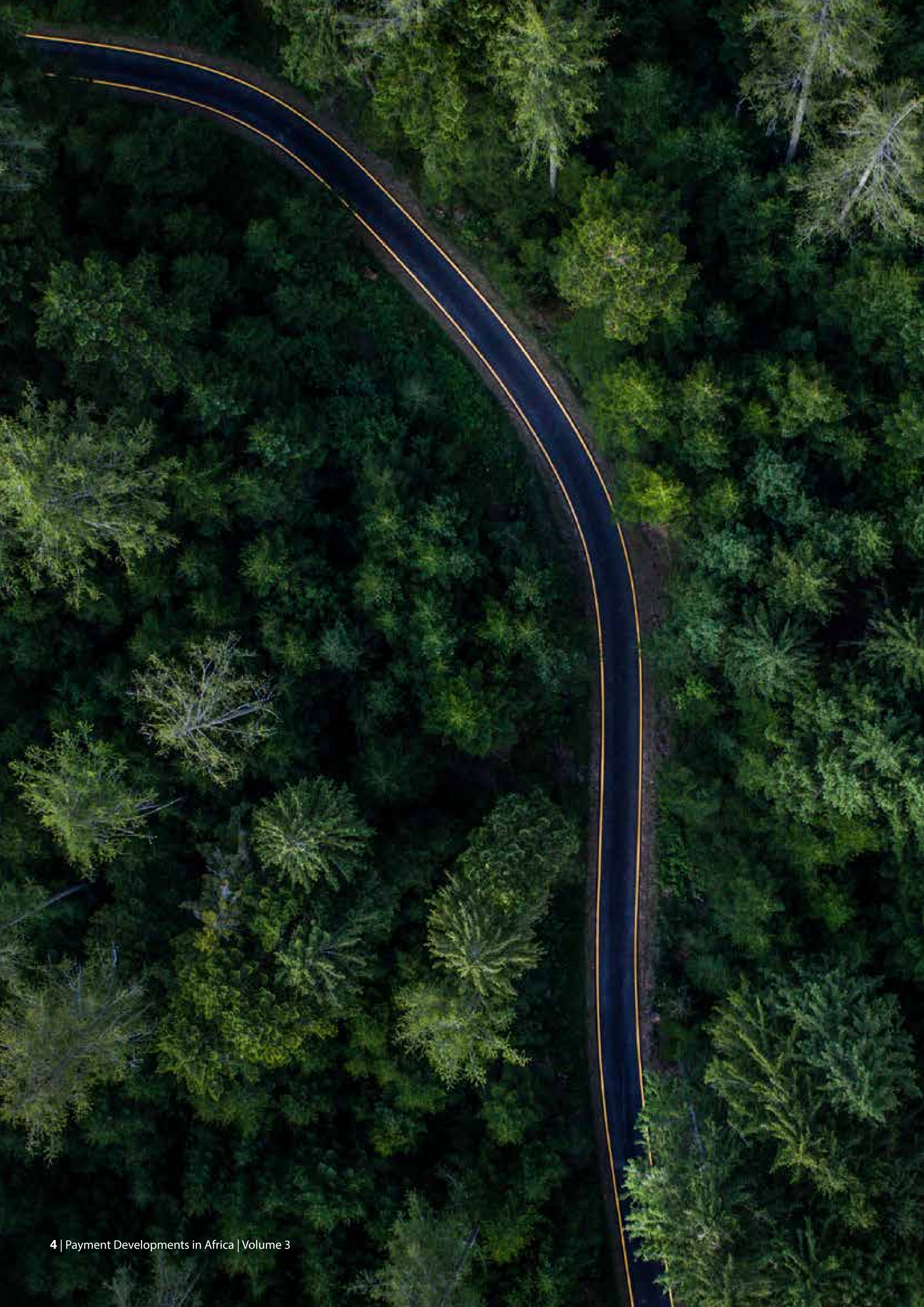

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Country Spotlight: Botswana

Botswana is widely viewed as one of the best governed economies in Africa and boasts a mature payments environment and ecosystem. In this country spotlight, we outline the foundations of Botswana's payments markets, explore some of the recent developments impacting the payments ecosystem and look ahead to the wider adoption of digital and mobile payments.

Overview: A robust payment ecosystem

When Botswana gained its independence in 1966, it was counted amongst the poorest countries in Africa. GDP per person was just US$83[1]. However, over the next three decades and more, Botswana has become a regional and global growth powerhouse. In fact, Botswana boasted the highest average economic growth rate in the world, averaging around 9 percent per year between 1966 and 1999. Private sector employment grew by 10 percent per year over the same period.

Botswana key facts	
Currency:	Pula (BWP)
Capital:	Gaborone
Central Bank:	Bank of Botswana (BoB)
Population:	2.29 million (2017)
GDP Per Capita:	US$5,068 (2017)
GDP Growth rate:	2.4% annual change (2017)

In part, Botswana's impressive economic record was built on a foundation of diamond mining, prudent fiscal policies, international financial and technical assistance, and a cautious foreign policy. And today, it is rated the least corrupt country in Africa, according to international corruption watchdog, Transparency International. By one estimate, it has the fourth highest gross national income at purchasing power parity in Africa, giving it a standard of living comparable to that of Mexico and Turkey.

Best countries for doing business: Overall ranking - 5 out of 48 Sub-Sahara African countries (2018)

Starting a business	31
Enforcing Contract	25
Registering Property	5
Getting credit	14
Protecting investors	6
Trading across border	3
Paying Taxes	6
Dealing with Construction Permits	2
Getting Electricity	17
Resolving Insolvency	7

Source: World Bank (Doing Business)[2]

Botswana's financial system includes a number of different types of intermediaries or institutions, such as commercial banks, other deposit-taking institutions, insurance companies, investment dealers and development finance institutions.

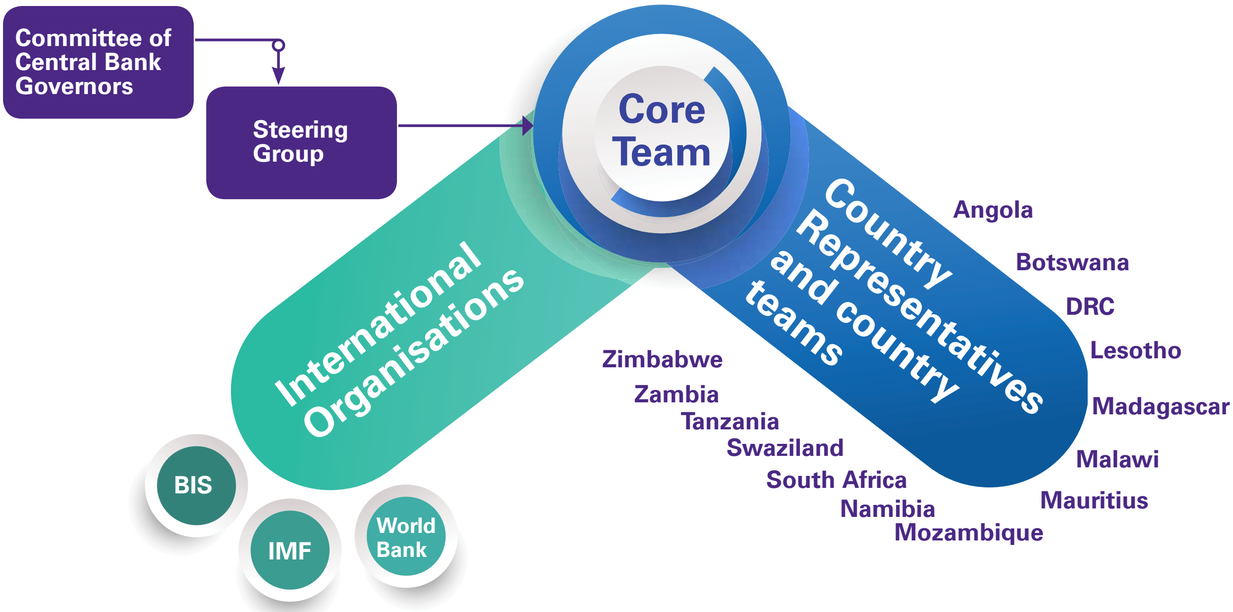
The banking sector consists of a Central Bank (Bank of Botswana) and ten commercial banks. While Barclays remains Botswana's largest commercial bank, First National Bank Botswana has grown rapidly to overtake Standard Chartered as the country's second largest[3]. Barclays is the largest bank based on deposits/ assets, whilst FNB is the biggets bank based on clients and revenue and profit.

Commercial banks are licensed under the Banking Act (1995) and are supervised and regulated by the Bank of Botswana. The banks are subject to reserve requirements, established by the Bank of Botswana. The banks also hold settlement accounts with the Bank of Botswana.

All non-banking financial entities are regulated by the Non-Bank Financial Institutions Regulatory Authority

(NBFIRA) which was established in 2006. It oversees all non-banking financial entities registered in Botswana including Pension Funds, Asset Management, Consumer/Micro lending, insurance and Collective Investment Undertakings. The principle objectives of the regulator are to ensure that investors are protected and that there is transparency in the management and operation of Botswana IFSC domiciled companies[4].

The modernisation of Botswana's payment systems started in 1995 under the umbrella of the SADC Payment Systems Modernisation Programme[5] (see diagram below).



Since then, Botswana has achieved significant progress in enhancing and strengthening its payment systems and has introduced a number of new electronic payment products including a Real Time Gross Settlement (RTGS) system, debit and credit cards, automated cheque clearing systems, smart cards and mobile payments.

Preceded by the introduction of an automated cheque processing system based on MICR7 code-line clearing, Botswana's RTGS system (the Botswana Interbank Settlement System or BISS) is now used by banks for virtually all high-value transactions while most low-value transactions tend to be processed using other payment facilities.

Botswana has focused on establishing an enabling legal and regulatory environment that better supports the operation of electronic payment products. The National Payments System (NPS) Act was passed in 2003 and the supporting Regulations were issued in 2005.

Legal and Regulatory framework: The rules and regulations supporting Botswana's payments system

Creating a robust legal framework for National Payment Systems (NPS) requires regulators to strike a fine balance. On the one hand, the legal framework should ensure that risks are adequately contained to maintain confidence in the NPS. But, at the same time, it should also promote, rather than stifle, innovation in the financial sector. Indeed, in a world characterised by electronic payment products, all markets require a legal framework that is open to innovation while providing clarity and certainty.

Botswana's legal and regulatory framework appears conducive to financial innovation. In fact, it addresses many of the major issues that are of concern in NPS policy design and implementation. For instance, the legal framework recognises electronic entries and specifically empowers the central bank to oversee retail payment systems.[6]

At the same time, the government continues to review the Bills of Exchange Act to ensure it caters to new developments in the retail banking sector. With the government's Cheque Imaging and Truncation System (CITS) project now at an advanced stage, the revised draft Bills of Exchange Act looks more specifically at the 'Duty of Care' in the new CITS environment.

The Botswana payments sector is subject to a number of key Acts and Regulations which now serve as a guide for the main function of licensing and regulating payment systems in the country[7]:

- **National Clearance and Settlement Systems Act (Cap 46.06), 2003:** The Act provides for the recognition, operation, regulation and supervision of clearance and settlement systems.
- **National Clearance and Settlement Regulations, 2005:** This regulation provides policy guidelines on the recognition of clearance and settlement system operators.
- **Banking Act (Cap 56:06), 1995:** This Act provides for the licensing, control and regulation of banks, and for matters that relate to banking sector regulation.
- **Anti-money Laundering Regulations, 1995**: In line with global AML and KYC regulatory changes, these regulations focus on controlling illicit activity within the banking sector.

The payment sector is also governed by regulation related to:

- Botswana Interbank Settlement System (BISS);
- National Payment System Oversight;
- Policy guidelines on the Recognition and Settlement systems Operators; and Electronic Clearing Rules

Evolution of Botswana's payments regulations

<1999

1995: Banking Act enacted (with associated regulations)

1996: Bank of Uganda Act enacted

2000 - 2003

2003: National Clearance and Settlement (NCSS) Act (CAP 46:06) enacted; establishment of the Electronic Clearing House

2003: Anti-money laundering Act enacted

2004 - 2005

2004: Foreign exchange regulations introduced

2005: National Clearance and Settlements Systems regulations

2006 - 2008

2006: Introduction of the Botswana Interbank Settlement System (BISS)

2006: Introduction of SmartSwitch, a universal electronic payment system

2007: Introduction of the Non-Banking Financial Institutions Regulatory Authority

2008: Introduction of the Central Securities Depository Company of Botswana

2009 - 2010

2009: Policy guidelines for the recognition of Clearance and Settlement System Operators

2011 - 2012

2011: Introduction of Mobile Money services – Orange Money

2012: Micro-Lending Regulations published

2013 - 2015

2015: Introduction of enhanced Botswana Automated Clearing House (BACH)

> 2016

2016: MFirst commercial bank goes live on the SADC Integrated Regional Electronic Settlement System (SIRESS)

A closer look: Botswana's payments ecosystem

Botswana's payment system consists of five main systems:

Electronic Clearing House Botswana (ECHB)

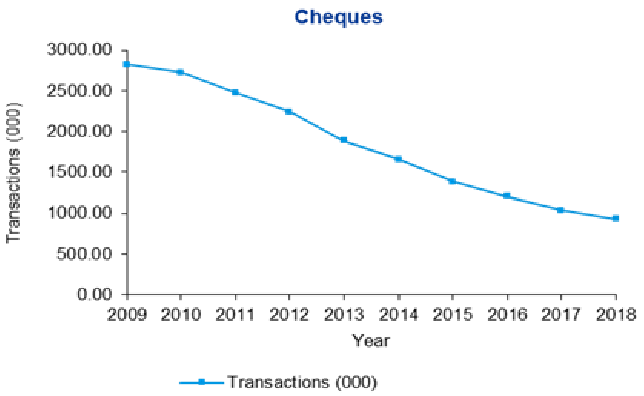
The ECHB was established in 2003 to facilitate the transfer of retail payments including cheques, electronic funds transfers and other payment orders between participants via a secure and private communications network. In Botswana, Electronic Clearing Houses (ECHs) are operated by the private sector which essentially relieves the Central Bank from incurring additional investment and operational costs. While this may be desirable for the Central Bank, it does create the potential for a time lag between the emergence of a risk, its identification by NPS authorities, and the implementation of corrective measures.

Delivery vs. Payment (DVP) Clearing System

The DVP Clearing System is operated by the Central Securities Depository Botswana (CSD), a private company wholly-owned by the Botswana Stock Exchange (BSE). The CSD's mandate includes providing clearing services for transactions undertaken through the BSE and settlements are conducted through accounts held at the Central Bank to avoid any credit, liquidity or settlement risk. The DVP system allows for a significant reduction in the errors and delays associated with paper-based manual processing and, as a result, has improved efficiency in clearing and settlements in the securities market. With investors now able to use their securities accounts in the same way as paper certificates as collateral for loans, market liquidity has improved.

SmartSwitch Botswana
SmartSwitch is Botswana's Universal Electronic Payment System (UEPS) technology platform. Accredited by the Bank of Botswana, the system allows merchant banks and cell phone companies to offer affordable financial services to the unbanked and underbanked segments of the population, particularly in remote areas. Founded in 2006, the system now boasts a network of more than 1,000 merchants across more than 240 cities, towns and villages who are able to offer cash in and cash out transactions. Merchants also act as agents for a wide range of products and services.

Botswana Interbank Settlement System (BISS)
BISS is Botswana's Real Time Gross Settlement (RTGS) system designed to allows funds to be transferred between participating institutions on an irrevocable and real time basis. As with any RTGS, the intention of BISS is to facilitate safe and secure payments, reduce risks and enable Botswana to meet international payments and settlement standards. BISS is managed and operated by the Bank of Botswana in its capacity as settlement provider mandated by the National Clearance and Settlement Systems (NCSS) Act, 2003. Membership of BISS is open to all clearing banks operating in Botswana as well as the Bank of Botswana. BISS was upgraded to the latest Montran RTGS version 3.0 in June 3, 2016, thereby allowing participants to settle payments in central bank money with immediate finality, thus reducing the settlement risk between participants in net settlement systems.



Source: Bank of Botswana

The SADC Integrated Regional Electronic Settlement System (SIRESS)
SIRESS is an electronic payment system developed by SADC member states, to settle regional financial transactions among banks within the region, on a gross basis, and in real time. The implementation of SIRESS has relied on the active participation of the commercial banks that are members of the SADC Banking Association, and facilitation by Central Banks. Botswana's banks were granted permission to join SIRESS in 2015 and the first commercial bank (First National Bank of Botswana) went live on SIRESS in October 2016. For more information on the SIRESS system, please see page 31.

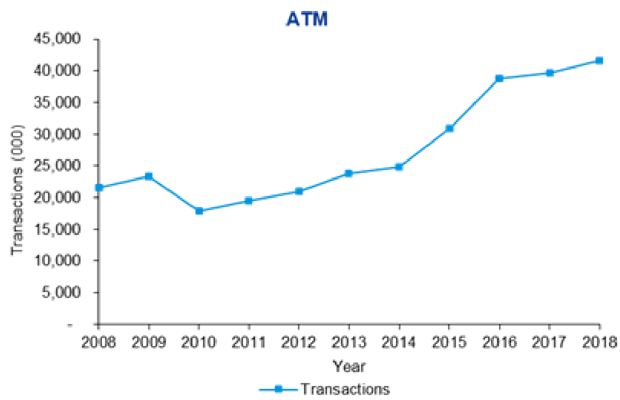
Towards e-Money: The movement from physical to electronic payments

As financial and telecommunications technologies evolve, non-cash payment initiatives are gaining momentum in Botswana. Virtually every bank now provides new and innovative mobile payment and internet banking options; two of the country's three mobile service providers have also partnered with banks to deliver money transfer services.

The need to transfer money quickly and safely from one person to another is, and has always been, important in emerging economies. And all signs indicate that these products are being widely accepted and adopted in Botswana.

While cash remains in high use across the economy, Botswana's customers are embracing a number of different electronic payment options including:

Automated Teller Machines (ATMs): The ATM system is relatively sophisticated in Botswana and ATMs are available and widely used in most cities, towns and some major villages. For the most part, ATMs are used for cash withdrawals and deposits. The number of ATMs nationwide continues to grow: In 2008 there were a total of 197 ATMs processing a total of 3.82 million transactions. As of the end of 2018, this had increased to 482 ATMs processing 11.26 million transactions[8]. Barclays alone boasts some 53 branches and more than 115 ATMs throughout the country[9].

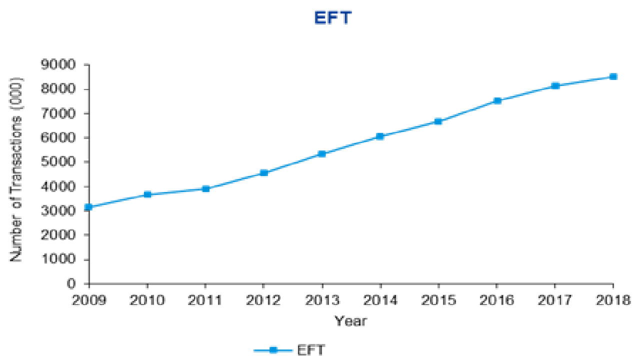


Source: Bank of Botswana

1

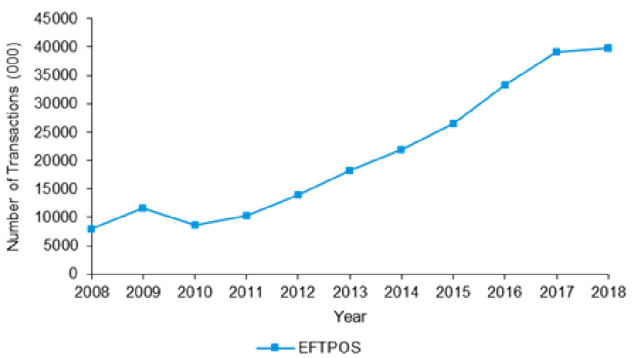
Credit cards: In 1995, only one of the four banks operating in Botswana offered credit cards; today, all 10 banks do. However, credit card ownership in Botswana appears to differ according to demographic characteristics of cardholders: low income, low education, youth, male, and married customers are more likely to own one card while those categorised as high income, high education, adult, female and single are more likely to own more than one card.[10]

Electronic banking and funds transfer: Through access to SWIFT, the Bank of Botswana and other banks use electronic transfers to transmit domestic and international payments. In addition, certain corporates are linked to their parent companies in South Africa via the VANS computer network which, in time, will permit these companies to link up with full Electronic Data Interchange (EDI).



Source: Bank of Botswana[12]

EFTPOS (Electronic Funds Transfer at Point of Sale): Most ATM cards in circulation in Botswana can be used by customers at point of sale. There has been a significant growth in the usage of the EFTPOS system from around 2.2 million transactions across 2,500 POS terminals in 2010 to about 33.3 million transactions across 4,271 POS terminals at the end of 2016.



Source: Bank of Botswana[13]

Mobile banking and payments: Great opportunities remain for Botswana's banks

Mobile money services offer an inexpensive and convenient way to bridge the gap between the banked and unbanked. And the African continent is the perfect place for its application. Not only is it one of the fastest-growing mobile phone markets in the world, it's also home to significant populations of unbanked people.

The opportunity in Botswana is particularly significant. The country is ranked higher than countries like Kenya and other East African countries on mobile telephone density. And, according to a FinScope Botswana survey, more than half of Botswana's population remained unbanked in 2009.

Perhaps not surprisingly, mobile money provision has been growing rapidly in Botswana. According to the Bank of Botswana 2014 Annual Report, the number of mobile money transactions jumped from around 5,000 in 2010 to more than 1.1 million in 2018[14].

Currently, just two banks – FNB and Barclays – have developed operational mobile money transfer service platforms in Botswana. And this has opened the door for a number of joint-venture opportunities between mobile service providers and banks.

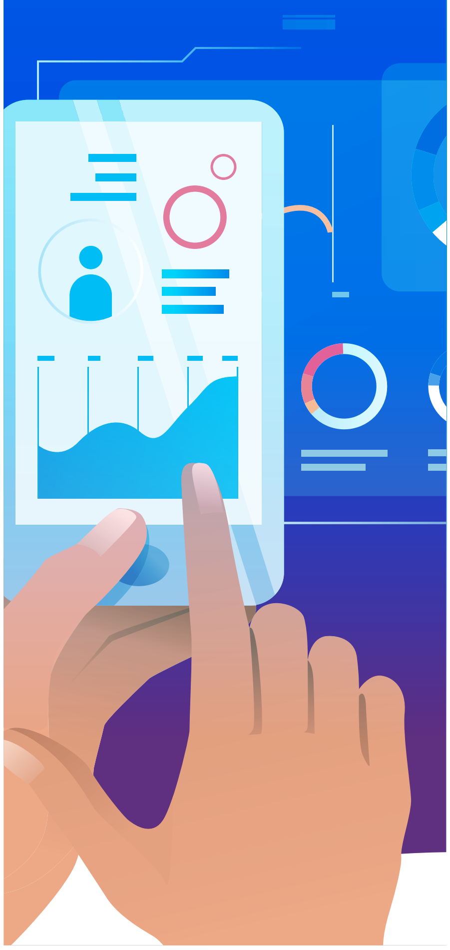
The two main joint-ventures providing mobile money services are Mascom's MyZaka and Orange's My Money. With almost twice as many subscribers as the closest competitor, it seems that Orange's service has been more widely adopted. However, given the rapid growth of the sector, it is clear that there is more room for development.

Mobile Money Subscriptions				
Year	Mar -16	Mar -16	Mar -16	Mar -16
Mascom	174,733	204,864	228,614	397,459
Orange	381,471	466,378	620,606	751,974
beMobile	2,499	2,499	2,499	240

Both service providers have evolved to include a more physical presence through the launch of the Orange Money Visa Card and My Zaka Visa Card. With the (physical) card, customers can withdraw money from any Visa ATM and swipe for goods and services at POS devices in stores. Customers can also get a virtual card that allows them to shop online. This has not only helped take these platforms to a new level, it also improves access to financial services for Botswana's unbanked.

Looking ahead, there are several factors that may influence the wider adoption of mobile banking and payments in Botswana. These include mobile network problems, high barriers to customer entry, concerns regarding security and a general lack of awareness about interoperability. Given that the top uses of mobile money in Botswana are for airtime purchases and money transfers, it seems clear that significant opportunity remains for payments players with mobile capabilities in Botswana.

Mobile banking and payments enable mobile phone subscribers to carry out a wide range of transactions including bill payments, funds transfers, mobile recharges or airtime top-ups, and micro-finance loan repayments using mobile handsets.



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What's next? A Vision and Strategy for Botswana NPS Modernisation

As part of the Bank of Botswana's efforts to further modernise the country's NPS and strengthen its oversight of NPS, the Bank is working with AFRITAC South (the Regional Technical Assistance Centre for Southern Africa) to develop the vision and strategy for the modernisation of Botswana's NPS. The resulting 'Issues Paper' offers an overview of the status of the NPS, identifies challenges and developmental needs, and recommends a range of strategic actions to address them.

The strategy proposes six key strategic areas of focus:

1. **The Payment and Securities Settlement infrastructure:** Botswana's existing large-value and low-value payment systems are generally considered to be safe and efficient. It is therefore critical that the Bank continue to assess, identify and remediate potential weaknesses and risks.

   Strategic actions include: Assessing the BISS and BACH systems; introducing a threshold for large value payments; reviewing and amending BISS and BACH system fee structures and participation; and setting up a collateral-based guarantee scheme in the BACH system to ensure timely settlements.

2. **The Retail Payments:** Botswana requires a retail payments system (RPS) that gives customers the widest possible choice of payment instruments for conducting day-to-day payment transactions across the region while also adequately protecting customers.

   Strategic actions include: Strengthening the commitment of the RPS stakeholders; incentivising the diffusion and use of electronic payment instruments; ensuring price transparency in the payment service market; and involving the Bank and NPS stakeholders in the ongoing national effort to develop a cyber-security framework.

3. **The Government Payments:** Given their scale and impact, government payments have the potential to play a critical role in the development of the NPS and in influencing people's payment habits. Innovation in government payments could help expedite the modernisation of payment systems and instruments.

   Strategic actions include: Engaging government in a dialogue with NPS stakeholders on integrating government payments in the strategy to modernise the NPS; and ensuring consistency between the 'Vision and Strategy for Botswana NPS Modernisation 2017-2021' and the 'Botswana Financial Inclusion Roadmap 2017 – 2021'.

4. **The Oversight of the NPS:** As part of its effort to maintain public confidence in the domestic currency and in the systems and instruments utilised for transferring funds, the Central Bank promotes the safety and efficiency of the NPS by monitoring existing and planned systems, assessing them and, where necessary, inducing change.

   Strategic actions include: Adopting and publishing the revised Oversight Policy Framework; drafting operational guidelines for the implementation of the Oversight Policy Framework; identifying relevant standards for the oversight of RPS; and investing in capacity building for oversight, especially in the areas of legal, market and risk analysis.

5. **Co-Operation:** Modernising the NPS and running it effectively requires cooperation between the Central Bank and other regulators and supervisors, between the NPS oversight function and its stakeholders, and among other stakeholders.

   Strategic actions include: Signing a Memorandum of Understanding between the relevant authorities; re-establishing the National Payments Council (NPC) (possibly grounded in the new payment system law); and designing an appropriate governance and organization for the NPC and National Payments Task Force (NPTF).

6. **The Legal Framework:** A comprehensive review of all relevant laws relating to the NPS should be undertaken to address gaps and inconsistencies which could potentially compromise the integrity of the infrastructure, create uncertainty regarding its use and hinder future progress.

   Strategic actions include: Undertaking a comprehensive review of all laws that are relevant to the NPS, the drafting of a National Payments System Act, and a law on e-money; expediting the finalisation and adoption of the Electronic Payment Service Regulations; and considering the need for a legal framework for government payments.

The intention of the 'Vision and Strategy for Botswana NPS Modernisation 2017 – 2021' is to formulate strategies and initiatives to achieve these six pillars. The paper encourages stakeholder discussions and inputs from various sources on the perceived reforms that must be achieved in the Botswana payments landscape. And, in the coming months and years, the Bank of Botswana intends to extract and define specific strategic actions to be pursued and incorporated into the NPSS document for formal adoption.

2

Country Spotlight: Uganda

Over the last 20 years, Uganda's government has taken significant steps to improve the efficiency and safety of the national payment systems. In this country spotlight, we provide a brief overview of Uganda's payment system, explore progress in the effort to modernise the system and then shine the spotlight on the emerging Fintech market in Uganda.

Overview: A payment system evolving

Like most other developing and developed markets, Uganda operates two types of payment systems – a wholesale system that includes Electronic Fund Transfers (EFTs) and Real Time Gross Settlement (RTGS), and a retail system that includes ATMs, point of sale devices, credit cards, mobile money and online banking.

Uganda key facts	
Currency:	Uganda Shilling (UGX)
Capital:	Kampala
Central Bank:	Bank of Uganda (BOU)
Population:	42.86 million (2017)
GDP Per Capita:	US$604 (2017)
GDP Growth rate:	4.0% annual change (2017)

The wholesale system is dominated by traditional financial institutions and is regulated by the Bank of Uganda (BOU) through the BOU Act and the Financial Institutions Act. While the BOU Act is not explicit on the regulation of some retail sectors like mobile money, the Central Bank has issued guidelines that it expects key players (namely the telecom and commercial banks) to follow.

That being said, the BOU is actively developing a comprehensive National Payments Policy which is expected to provide appropriate regulation for the retail system. Until then, however, much of the operational framework for retail systems is being defined by contract law.

A brief history: The modernisation of payment systems in Uganda

Until 1998, Uganda's economy was largely dominated by a mix of cash and cheques. At that time, few businesses paid salaries through bank accounts; it was common to see government and private sector employees lining up to get paid at the end of the month. Those businesses that did use cheques were often crippled by processing delays and limited transparency into the payment process. Few people – businesses or employees – voiced any love for cheques.

Over the past 20 years, however, the Government of Uganda has taken significant steps to improve the efficiency and safety of the payment system. In 1998, the National Payment System Secretariat (NPSS) was established to spearhead the modernisation of Uganda's payments system under the BOU. The NPSS took a number of immediate steps to catalyse the evolution towards a more modern payment system.

The first was to articulate a clear strategic approach by developing and establishing the National Payment System Council (NPSC) which, to date, remains Uganda's highest policy-making authority on matters related to payment systems.[15]

At the same time, the NPSS also conducted a survey that found Uganda's payment system heavily weighted towards debt instruments over credit instruments. This led the government to start to phase out cash transactions for payments and require suppliers to have valid bank accounts for payment via cheques. While there were still a number of challenges (largely related to errors in the cheque process and stale cheques), this led to a significant shift from cash to cheque payments.

The three years from 2002 to 2005 saw significant change sweep across Uganda's payment system, largely spearheaded by the BOU. In May, 2002, the Bank introduced the Electronic Clearing System (ECS) to support automated cheque clearing. In August 2003, the Electronic Fund Transfer (EFT) system was introduced to support smaller transfers such as utility payments. And in 2005, the BAU launched the Real Time Gross Settlement (RTGS) system – known as the Uganda National Inter-bank Settlement (or UNIS) system – to enable the transfer of larger sums of money.

During these years, the Bankom switch technology was also launched to help support inter-bank electronic payments. As of June 2016, the switch network (which was rebranded as InterSwitch East Africa Limited in 2011) included ten banks, two credit institutions and one microdeposit institution.

A new era: The introduction of mobile money

Few technologies have influenced Uganda's payments systems like mobile money. Indeed, since its introduction in 2009, it has been credited with bringing millions of people into financial inclusion through mobile money accounts.

Largely dominated by MTN Uganda (the company was the first to introduce mobile money in Uganda and held a virtual monopoly over mobile money services until 2012), the mobile money market has enjoyed rapid growth.

According to the BOU, there were 21.6 million mobile money accounts by the end of 2016, conducting some UGX43.8 trillion (US$12 million) in transaction value.[16]

While mobile money usage continues to be dominated by person-to-person (P2P) transfers and airtime top-ups, the technology is also creating new benefits for customers and the economy. For example, mobile money now forms the basis for other innovative financial products (such as MTN Uganda's MoKash small business micro-loan product). And it has seen significant uptake as a channel for cross-border money transfers, especially within the region through new remittance platforms that enable funds to be sent directly to a person's mobile wallet or bank account.

The market is now fairly competitive with a number of mobile operators (including MTN, Airtel, Uganda Telecom and Africell) offering services to banked and unbanked customers. Not to be outmanoeuvred, the established banks – recognising that mobile money is rapidly replacing some of their traditional services – have partnered with Fintechs to create new propositions. These include M-cash, PayWay and Eeezy Money which are also gaining strong traction in the market.

A closer look: The rise of ATMs and POS in Uganda

Automated Teller Machines (ATMs) were first introduced into Uganda's payment system in 1997. Since then, they have seen rapid adoption across the country. In fact, by December 2013, there were more than 835 ATMs located around the country, with the highest concentrations in the major cities of Kampala, Entebbe and Jinja[17].

While ATM services were initially focused on providing cash dispensing services, they have now been integrated with other international card payment systems including Visa, MasterCard, Maestro and Union Pay which have enabled their ATM cards to function globally. The ATM technology is now capable of offering a much wider range of services including deposits, funds transfers, account information and so on.

Point of Sale (POS) adoption has been somewhat slower. Limited to terminals at select supermarkets, hotels and fuelling stations, most POS devices are concentrated in Kampala with only a few scattered in the other major cities such as Jinja and Mbarara. Ugandans have also yet to warm up to the 'spend now, pay later' culture of credit cards.

A closer look: International money transfers

For a country with a sizable diaspora, the ability to make international money transfers quickly and easily is key. Yet, in the past, transferring money in and out of Uganda was a challenge, largely due to the slow development of the nation's payment system. Options for transferring money internationally were limited and costs for transactions were high. Most people (and businesses) struggled to get the required letters of credit or cash-in-advance vehicles that were often required.

Over the past two decades, however, the economy has opened up to international payment systems. And, today, businesses and individuals have a wide range of options to choose from. New technologies have certainly spawned a number of fairly efficient and effective ways to make payments and transfer remittances internationally. Uganda's banks have also developed the necessary correspondent bank relationships to support international investments and foreign exchange-related transactions.

This modernisation process has also played a key role in driving improvements in controls within Uganda's banks. Cross-border transactions now go through rigorous checks to ensure security and mitigate the potential for money laundering. Relationships with correspondent banks oblige Uganda's banks to comply with international standards. And international payments are still regulated by the BOU through commercial bank and money-laundering regulation.

Uganda's payment systems are subject to a number of laws, regulations and guidelines that have been established by the Bank of Uganda (BOU).

2

Legal and Regulatory framework:

The rules and bodies that govern payments in Uganda

Through its oversight function, the BOU focuses on mitigating risks in the payment system to ensure the safety of transactions and an efficient process. In implementing its oversight policy, the BOU observes international standards and undertakes a range of activities that allow it to ensure compliance.

Some of the BAU's main activities include:

- Registration of all institutions that apply to be payment institutions and system operators, ensuring that their operations will not compromise or pose a threat to the safety and efficiency of the Ugandan payments system.
- Ongoing monitoring to get a good understanding of how inter-bank systems function and interact, and how the use of non-cash payment instruments is evolving.
- Assessing systemically important payment systems to determine their compliance with international standards. The oversight activities conducted by the BOU include monitoring the usage and operational performance of Uganda's Real Time Gross Settlement System (RTGS) and the Electronic Clearing System (ECS) as well as observing payment instruments and channels such as mobile money and Automated Teller Machines (ATMs).
- Inducing change through moral suasion and the exercise of its statutory powers.

The main laws, regulations and guidelines governing Uganda's payment system include;

- **The Bank of Uganda (BOU) Act:** This Act was first enacted in 1969 and subsequently amended in 2000. The Act mandates the central bank to supervise, regulate, control and discipline all financial institutions.
- **The financial institutions (FI) amendment Act 2016:** This Act replaced the FI Act 2004. The Act consolidates the law relating to financial institutions, providing for regulation, control, and discipline of financial institutions. The amendment provides for Islamic banking, banc assurance, agent banking, and special access to the Credit reference Bureau by accredited credit providers and related purposes.
- **The micro finance deposit-taking institutions Act, 2003:** The Act provides for the licencing, regulation and supervision of microfinance businesses in Uganda.
- **The Anti-money laundering Act, 2013:** This Act seeks to provide for the prohibition and prevention of money laundering.
- **The Uganda Communications Act, 2013:** Telecommunication companies in Uganda are regulated by the Uganda Communications Commission which was constituted by this Act. This Act essentially provides oversight of the operations of telecom companies.
- **Financial Institutions (Agent Banking) Regulations, 2017:** These regulations effect the 2016 amendments to the Financial Institutions Act, 2004 which introduced agent banking as a new delivery channel.
- **Mobile money guidelines 2013:** These were interim guidelines issued by the BOU to guide the operational framework for players in the mobile money space.

While there is currently no regulation over mobile money payments or electronic financial transactions, the BOU is in the process of amending the BOU Act to include explicit regulation over mobile money and other e-payments and digital currencies, among others[18].

Evolution of Uganda's payments regulations

<1999

1951: Exchange control Act enacted

1969: Bank of Uganda Act enacted

1990: Foreign exchange Bureaus introduced

2000 - 2003

2002: Implementation of the electronic clearing system

2003: The micro finance deposit-taking institutions Act enacted

2003: Implementation of the EFT for both direct debits and credit transfers

2004 - 2005

2004: Financial Institutions Act enacted

2004: Foreign Exchange Act enacted

2005: Interbank payment electronic system implemented

2005: Financial institutions (licensing) and credit reference regulations adopted

2006 - 2008

2006: Foreign exchange regulations introduced for forex bureaux and money remitters

2007: Real time Gross transfer system implemented

2009 - 2010

2009: Introduction of MTN mobile money services

2011 - 2012

2011: BOU financial consumer protection guidelines issued

2012: Airtel Money services launched

2013 - 2015

2013: Mobile money guidelines issued

2013: The Uganda Communications Act enacted

2013: Anti-money laundering act enacted

> 2016

2016: Mokash mobile borrowing and saving platform launched

2016: Financial Institutions (FI) Amendment Act 2016 enacted

2017: Agency banking regulations introduced

A closer look: The role of Fintechs in Uganda's payments system

It is still early days for financial technology (Fintech) in Uganda. True, there are a growing number of Fintech's active in the market who are now leveraging technology and innovation to find a new niches in the financial services sector (see sidebar). And this, in turn, is creating challenges and opportunities for the banking sector.

Whereas in the past, most banks, insurers and mobile operators tended to develop their mobile and technology products in-house in order to achieve their growth and profitability goals, the development of new technologies and business models has opened the door to new forms of collaboration. Indeed, many of Uganda's banks are now collaborating with Fintech's to improve their competitiveness and create new propositions.

A recent collaboration between the Uganda Bankers Association (UBA) and Eclectics International (a Kenya-based Fintech), for example, aims to create new opportunities for players to make the most of the recently passed agency banking regulations in Uganda. The agreement will see UBA's member banks leverage the Eclectics agency banking platform to extend their services through more than 10,000 remotely-located shops across the country.

Equity bank is also making news by developing an open API platform that allows software developers to test innovative products within a safe and monitored environment.[19]

While collaboration between banks and technology firms are creating opportunities, there are signs that these collaborative efforts are being hampered by a number of challenges. In particular, many banks are trying to rationalise their desire to get their full return on their existing core banking systems, distribution channels and human resources against the need to upgrade – or possibly even write-off – these assets while incurring further cost outlays as they shift to digital.

Partnerships are also facing challenges aligning operating models, business models and culture. The reality is that traditional banks are focused on regulatory compliance and risk management, while Fintech's tend to thrive on the flexibility of fast-changing environments with little regulation. Finding alignment between these two cultures has proven difficult.

Nonetheless, all signs suggest the Government of Uganda is keen to encourage greater innovation. Many Ugandans have, in the past, found themselves financially excluded simply due to a lack of secure and efficient banking infrastructure and high transaction fees. The introduction of a new mobile infrastructure network allows these people to access financial services for the first time. The further development of potential synergies – such as encouraging the interoperability of mobile payments to better facilitate remittances – would help drive deeper financial inclusion.

However, it must be noted that the regulators have been slow to move on developing appropriate regulation to govern these new players and models. Fintech players are dynamic, rapidly evolving and innovative; current methods of regulation are insufficient in this type of environment.

Spotlight on 5 key FinTechs operating in Uganda

Smart Credit: This business intelligence engine processes SME transactional data to create individualised credit data and financial statements.

Useremit: This is a mobile payments service that allows people from all over the world to make real time money transfers from debit or credit card to registered mobile-money users in Uganda, Kenya and Rwanda.

Awamo: A mobile, biometric banking solution (SaaS) for unregulated microfinance providers in sub-Saharan Africa. The biometric technology gives additional security and protects businesses from fraud.

Beyonic: This player reduces cash risk and helps businesses go mobile across operations. They digitise payment workflow for businesses to pay people with mobile money. Users can also start collecting funds via mobile money.

Payway: This is a brand of African Vending Systems Ltd that started operating in 2009. Its current focus is to facilitate payments ranging from event ticketing, utilities, airtime top-up and internet data. It is an internet-based solution for collecting and managing customer payments.

A closer look: Will crypto-currencies disrupt Uganda's payment systems?

There has been a lot of discussion about the role crypto-currencies will play in delivering a 'cashless economy' to Uganda. It is certainly true that some individuals in Uganda are trading in crypto-currencies (One Coin seems to be the most popular, but Bitcoin is quickly gaining ground).

However, recent signs from the government suggests that their inclusion into mainstream payments will not be happening any time soon. Uganda has no current plans to create or adopt a taxation mechanism for crypto-currencies. And, based on a recent warning issued by the Central Bank[20], it does not seem likely to be embraced as a form of legal tender any time soon.

The Bank is generally concerned about how crypto-currencies operate and how they are to be regulated given that they are internet-based and therefore flow around traditional third party controls at banks and other institutions.

Given the limited capabilities and understanding of crypto-currencies in the market, it seems that most of the talk about these currencies are being influenced by speculation. Any investment decisions being made on these currencies in Uganda are likely being driven by promoters rather than expectations of widespread acceptance within the market.

Looking ahead: Opportunities and challenges for Uganda's payment systems

While, in comparison to more mature markets, Uganda's payment systems may seem far from standardised, it is clear that Uganda's Central Bank and Government have made great strides in modernising the country's payment systems over the past two decades.

New innovations like the interactive voice messaging service being developed by Airtel and Viamo (a social enterprise focused on information sharing), the partnership between the Uganda Bankers Association and Eclectics International (discussed above) and the plan to launch e-payments for government services seem set to provide a continued catalyst to payment system modernisation in Uganda.

At the same time, the availability of improved infrastructure and delivery channels will also play a significant role in helping Uganda's payment system evolve. The further adoption of ATMs coupled with increased education and promotion around POS devices will be key in pushing debit card use beyond simply cash withdrawals. Improved telecom connectivity in areas outside of the major centres will also be critical to improving Uganda's payment infrastructure.

The presence of payment aggregators such as World Remit are making it possible to send money quickly, easily and cost effectively across borders. And regional payment systems have been improved. For example, time lags in cheque clearing across the East African Payment System have been reduced from 21 days to just 4 days (albeit from a fairly low volume level).

While the adoption of mobile money solutions has certainly been impressive, further growth may be hampered by the lack of interest-bearing options to encourage savings, concerns around liquidity for the operators and the potential for a high number of fraudulent transactions. Research indicates that between 2013 and 2015, at least 53 per cent of mobile money agents in

Uganda had reported fraud cases[21]. Trust in agents will need to improve for the system to grow effectively.

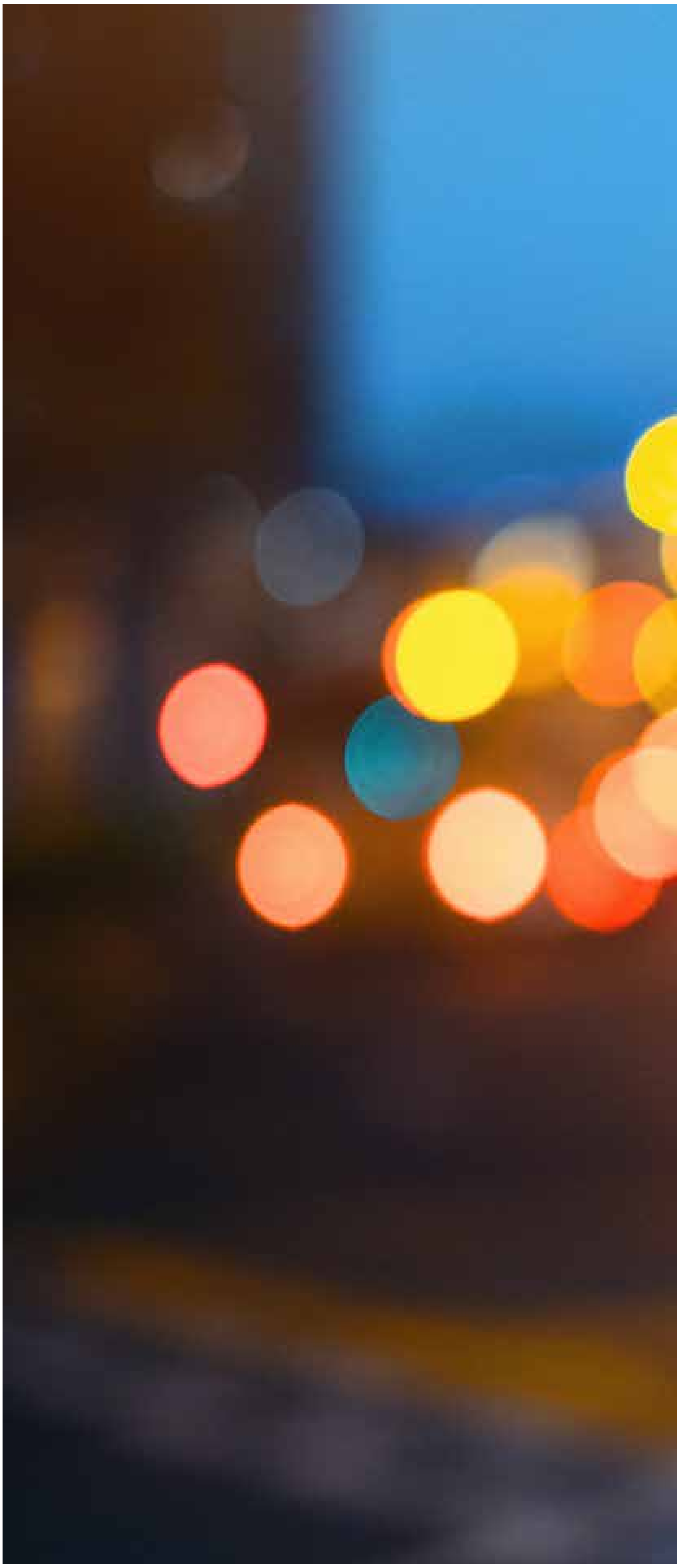
Within the traditional banking sector, our work suggests that a large percentage of the banked population are still experiencing the continued high costs of electronic transactions, delays in processing and settlement of payments. Traditional financial institutions will need to carefully consider how they strike the right balance between investing into new technologies and writing off existing technologies in order to remain profitable and maximise returns over the medium to long-term.

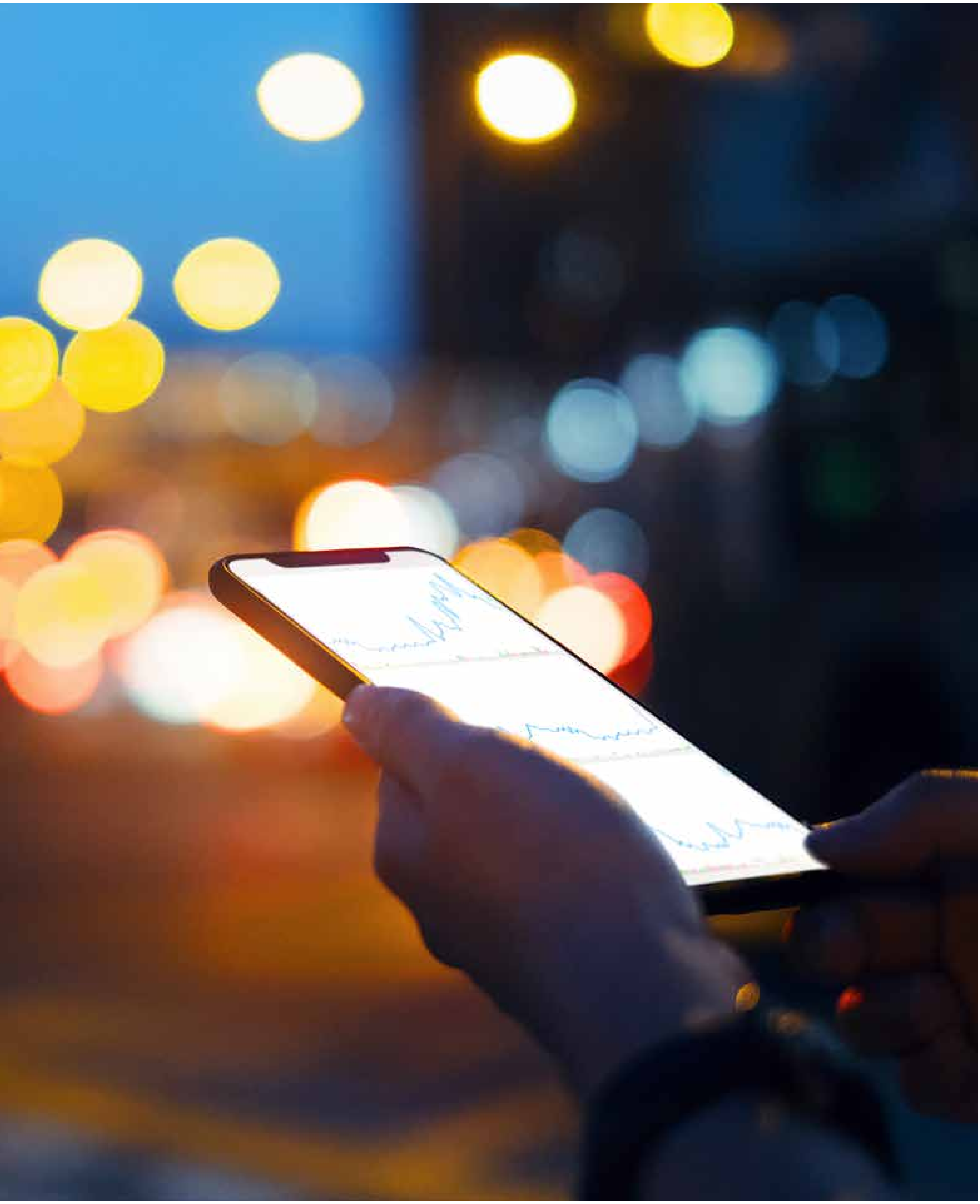
Digital literacy is another major challenge that will need to be addressed. Smart phone adoption has been growing, in part due to the lack of payment functionality on traditional mobile phones. And this is creating opportunities for players to find new ways to help customers access financial services. Improving relationships between agents and customers will be central to driving literacy and product awareness.

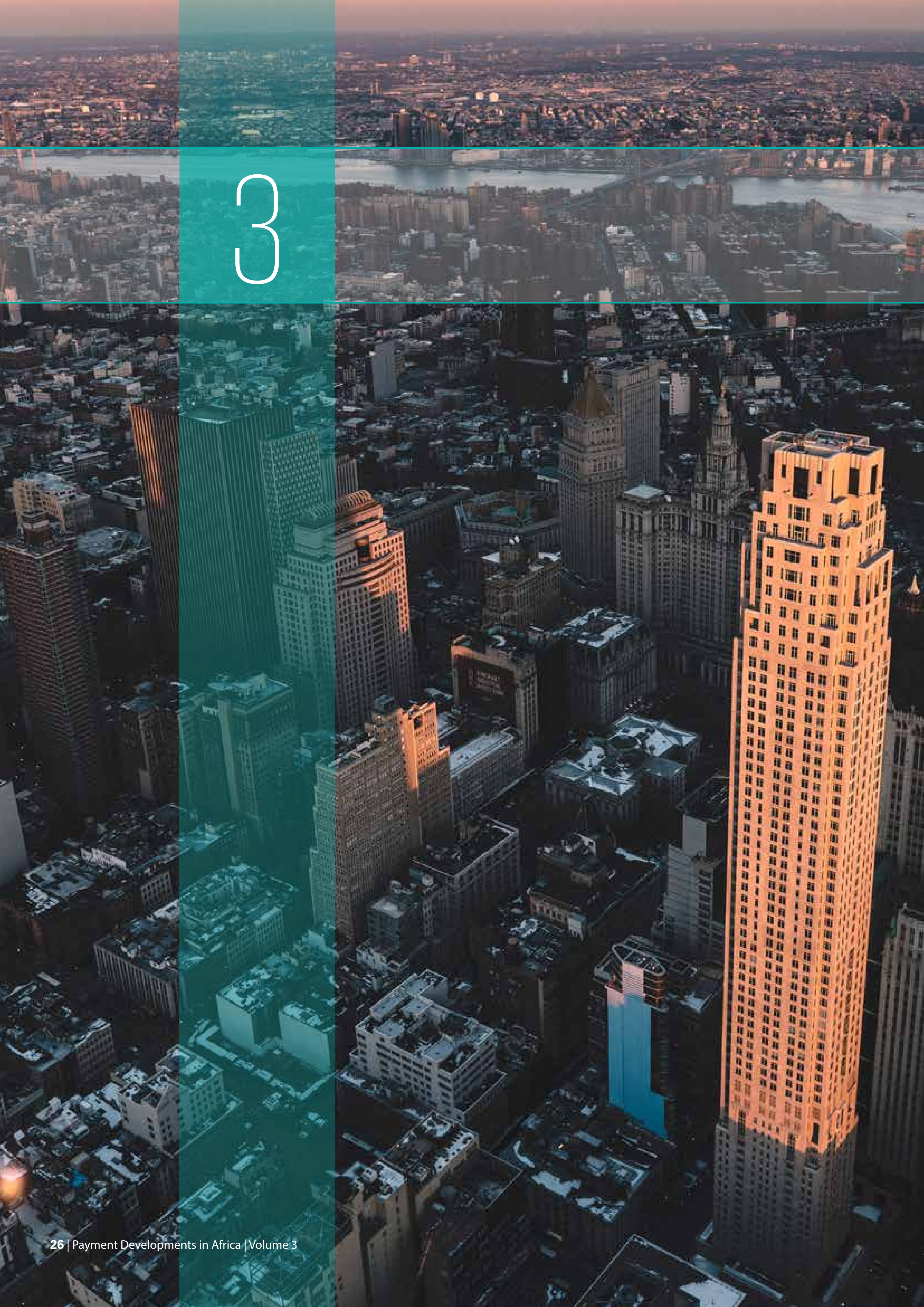
For their part, the Bank of Uganda has largely embraced all of the changes in the market and seem eager to provide a flexible framework that would encourage innovation while driving greater financial inclusion. The Central Bank continues to encourage partnerships between Fintechs and financial institutions as a way to drive efficiency in the payment system at low costs of operation. Greater interoperability between telecom players in the mobile money space and the Fintech partnerships could help create a more solid platform for future development.

Clearly, the delays and challenges in developing regulation over e-payments and Fintech players creates concerns about cyber security and money laundering. Supportive regulation is also critical to the growth of the sector. However, it is also clear that the Central Bank intends to play a significant role and has taken important steps to enhance supervision and speed up the formulation of regulations over the changes in the payments value chain.

Uganda, like many countries in Africa, is working hard to meet the challenges being created by recent evolutions in payment systems, particularly where these changes are evolving quickly. The BOU will need to examine the experience of other African and international markets where payment systems are standardised in order to adopt relevant strategies for financial inclusion while ensuring a safe and efficient payments environment.







3

Regional Spotlight:

Southern Africa Development Community (SADC) - The journey towards regional payments integration

Overview: The SADC journey

Introduction

- The Southern Africa Development Community (SADC) was created through the SADC Treaty signed in 1992 by the Heads of States of Governments of Southern Africa.
- The SADC's focus is on bringing about sustainable, collaborative development in several important areas—including financial services—with the ultimate goal of poverty eradication.
- The SADC currently includes 15 Member States: Angola, Botswana, The Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, The Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. It covers a population of more than 300 million people.

Key milestones in the SADC payments journey

The development of the SADC Finance and Investment Protocol

The Finance and Investment Protocol (FIP) aims to help harmonise Member States' financial and investment policies. The aim of the protocol is to build stronger regional integration, grow trade within the region and encourage regional economic development.

The definition of legal frameworks and regulation

Supported by the mandate provided within the Finance and Investment Protocol, the SADC was positioned to define the regulations required to create appropriate governance structures and the guidelines that would underpin the SADC Payment Ecosystem.

The creation of the Committee of Central Bank Governors

In 1995, the Committee of Central Bank Governors was launched with the intention of helping all SADC Member States develop a Real Time Gross Settlement System (RTGS). All Central Banks committed to undergo the required regulatory and system changes to support a RTGS and, by 2010, most SADC Central Banks had achieved that goal.

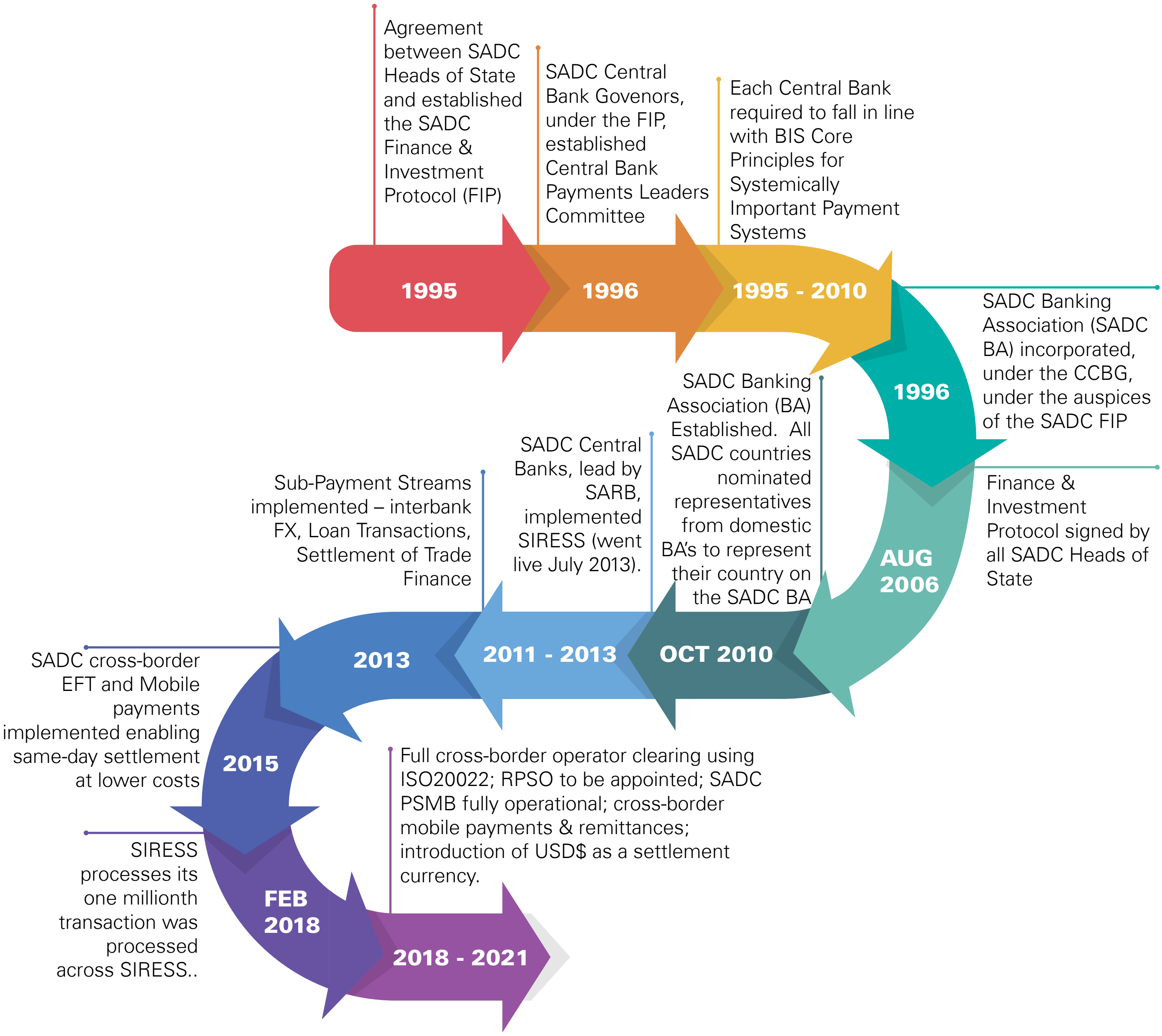
With South Africa's RTGS system considered the most advanced in the region, the Committee of Central Bank Governors asked the South African Reserve Bank (SARB) to take the lead in developing the system for the SADC.

The development of the SADC Integrated Regional Electronic Settlement System (SIRESS)

Funded through the South African Multiple Option Settlement (SAMOS) system, SIRESS has been in operation since July 2013. While the system currently offers only credit push transactions, system operators are also considering and evaluating the potential for debit pull transactions as well.

All SADC banks are eligible to participate and must hold South African Rand (ZAR) denominated settlement accounts with the SARB. Using the RTGS has allowed cross-border transactions (denominated in ZAR) to be conducted on the same day and at much lower costs than were previously available. Standard cross-border remittances using standard EFT and mobile channels were introduced in 2015.

The SADC journey



Legal and Regulatory Framework

The SADC's model is the EU's Single Euro Payments Area (SEPA) framework which has resulted in an integrated trans-European payment environment. Payments integration in Europe was enabled through the creation of a harmonised legal and regulatory framework which is currently unavailable in the SADC region.

The basis for cooperation and coordination between central banks on payments, clearing and settlement systems within the SADC exists through the Finance Investment Protocol – Annex 6. Furthermore, SIRESS' operational activities are regulated and managed in terms of the South African legislation, as the payments system is hosted and operated by the South African Reserve Bank (SARB).

SADC Member States participating in the SIRESS Proof of Concept project tended to structure their legal arrangements on a contractual basis through a number of multilateral agreements. However, these were widely viewed as short-term solutions aimed at providing legal certainty until a more appropriate SADC-wide legal and regulatory framework could be developed and adopted.

At the same time, Article 4(1) (e) of Annex 6 of the FIP explicitly requires Member States to "monitor, on an ongoing basis, international payment system best practices and align the payment system developments in that State Party in accordance therewith". This includes several documents published by the Bank for International Settlements (BIS) Committee on Payment and Settlement Systems (CPSS)*, The Basel Committee and the Financial Action Task Force (FATF). Best practice benchmarks include:

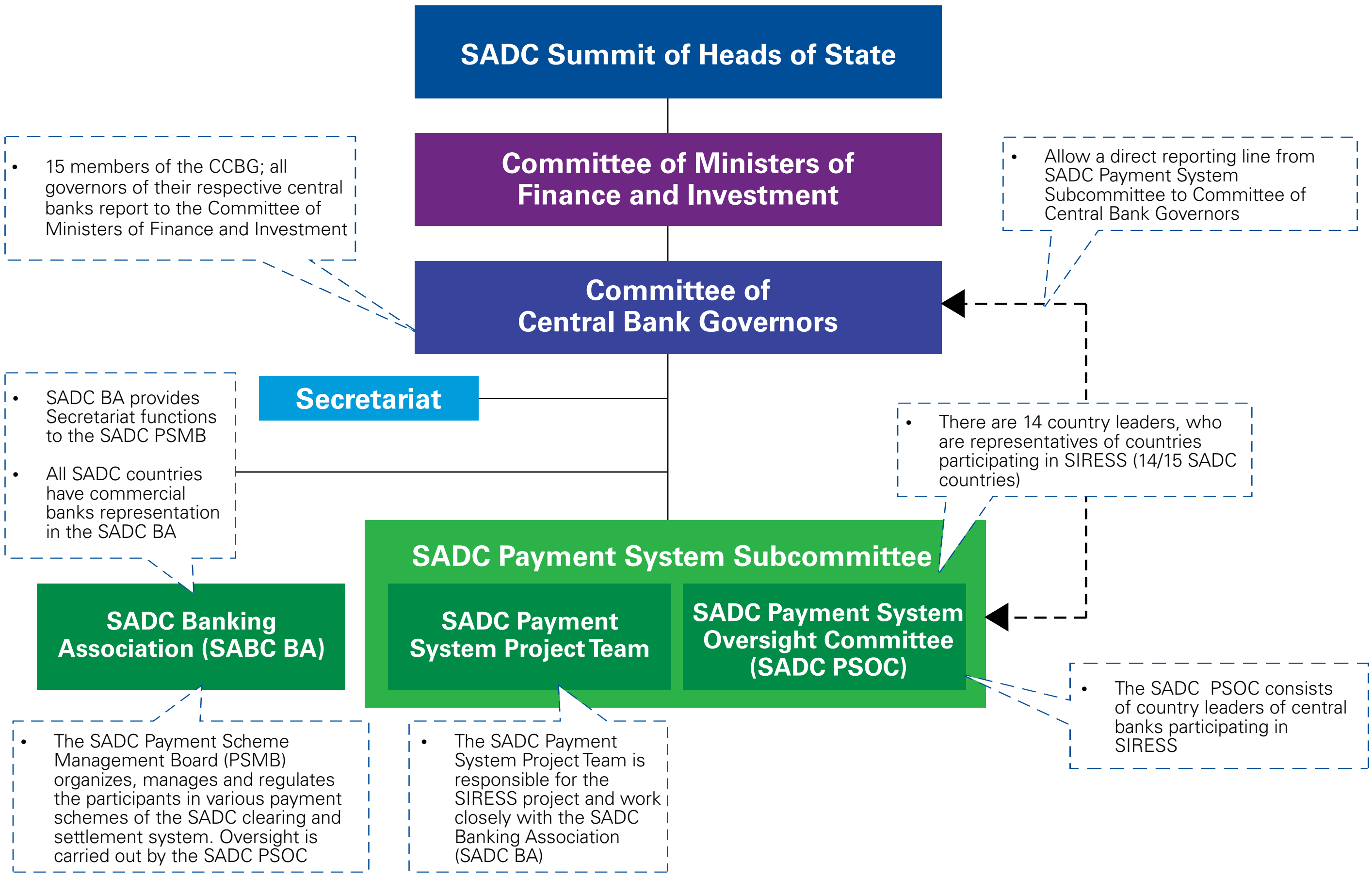
- The Principles for Financial Market Infrastructures (PFMIs)
- The United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce (1996)
- The FATF Recommendations (2012)
- The BIS/World Bank General Principles for International Remittance Services.
- Developments in other mature markets in Europe, the Americas and Asia.

As a vital piece of financial market infrastructure (FMI), SIRESS is expected to adhere to the 'Principles for financial market infrastructure' (PFMI) standards issued by the International Organisation of Securities Commissions (IOSCO) and the Committee on Payments and Market Infrastructure (CPMI).

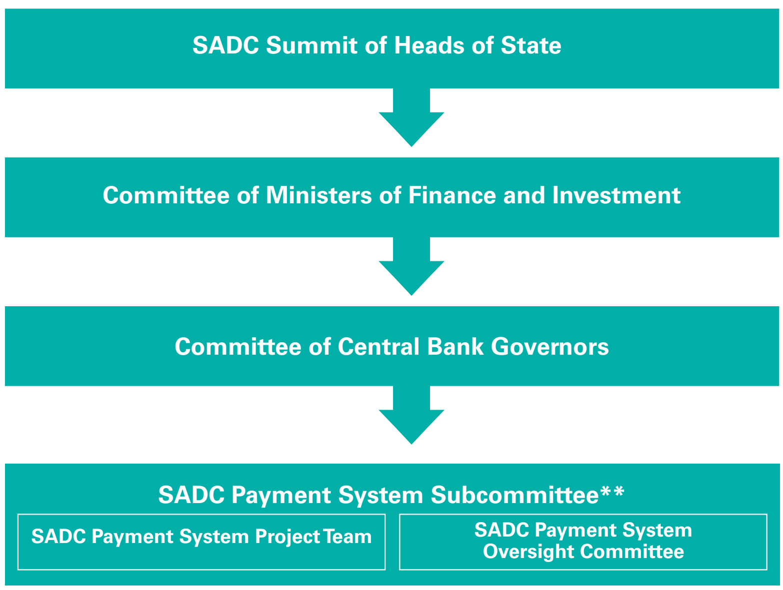
Limitations in achieving a harmonised legal and regulatory payments framework within the region are largely influenced by the absence of a regional institution (such as a Central Bank or parliament with legislative powers such as the East African Community, EU or ECOWAS) and the varied payments system maturity within each member country's jurisdiction – member countries are at various stages of development of their national payments legal and regulatory frameworks.

While Annex 6 of the Finance and Investment Protocol establishes a framework for cooperation and coordination between Central Banks on payment infrastructure, there are no specific SADC Regulations and or Directives on Payments. SADC member countries' commitment to attaining a harmonised legal and regulatory payments framework, depends heavily on their willingness to amend their local laws in order to establish institutional and organisational structures required for a fully operational and efficient payments system. The amendment will be supported by the creation of a regional payments system model law.

Governance Structure

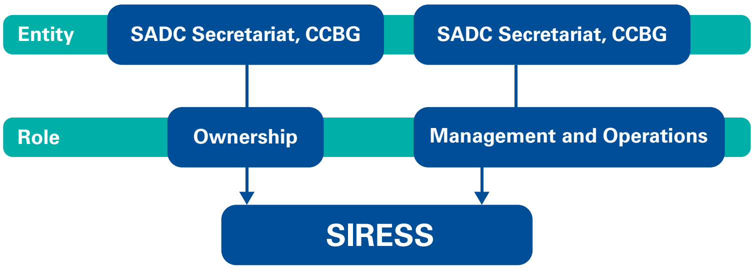


SADC Payment System Governance Arrangements



SIRESS is owned by the SADC, through the Committee of Central Bank Governors (CCBG). The SADC Payment System Subcommittee is accountable to the CCBG and is comprised of the SADC Payment System Project Team and the SADC Payment System Oversight Committee (SADC PSOC).

SIRESS ownership and operations structure

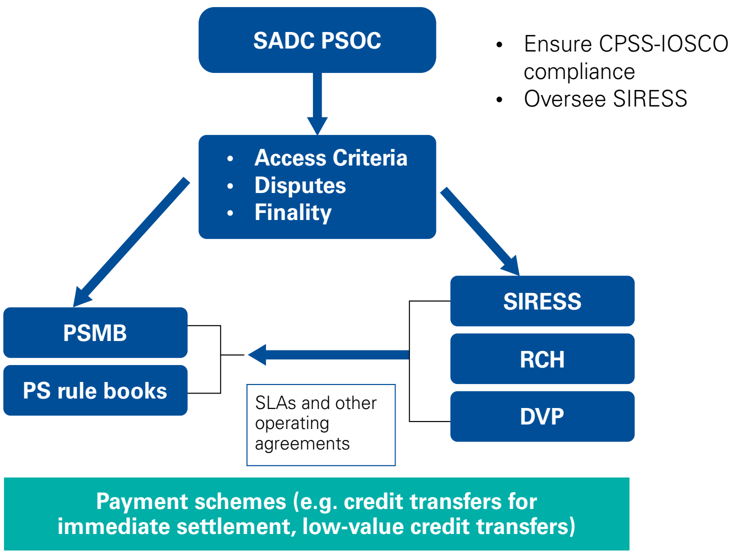


The SADC PSOC comprises of country leaders appointed by the Governors of taheir respective central banks and are accountable for SIRESS and payment system oversight-related matters. The SADC PSOC works together with the SADC Payment System Subcommittee to advance the payment, clearing and settlement systems of the SADC.

SIRESS is hosted and operated by the South African Reserve Bank (SARB), thus its operational activities are regulated and managed in terms of South African legislation. However, the SADC PSOC, in collaboration with the SARB, fulfils the oversight function (cooperative agreement between SADC members) with SARB as the lead overseer. The SARB executes the roles of Chairperson of the SADC PSOC, the chairperson of designees, and the secretariat.

Regulation of participants within SIRESS (payment schemes) is carried out by the SADC Payment Scheme Management Board (PSMB) – the self-regulated, autonomous body of the SADC Banking Association (SABC BA).

SADC PSOC and PSMB governance structure



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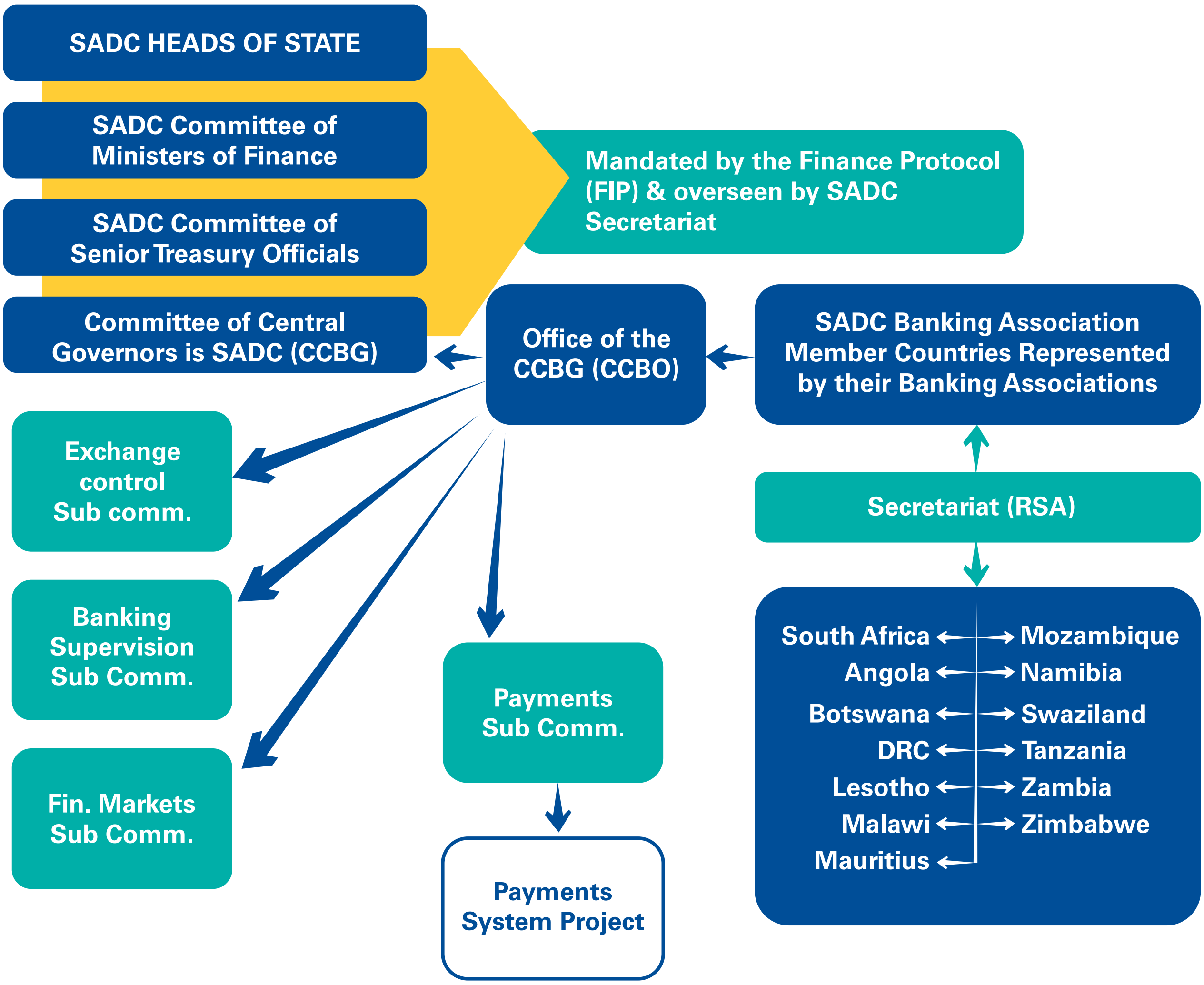
The SADC Payments Scheme Management Body – SADC Banking Association

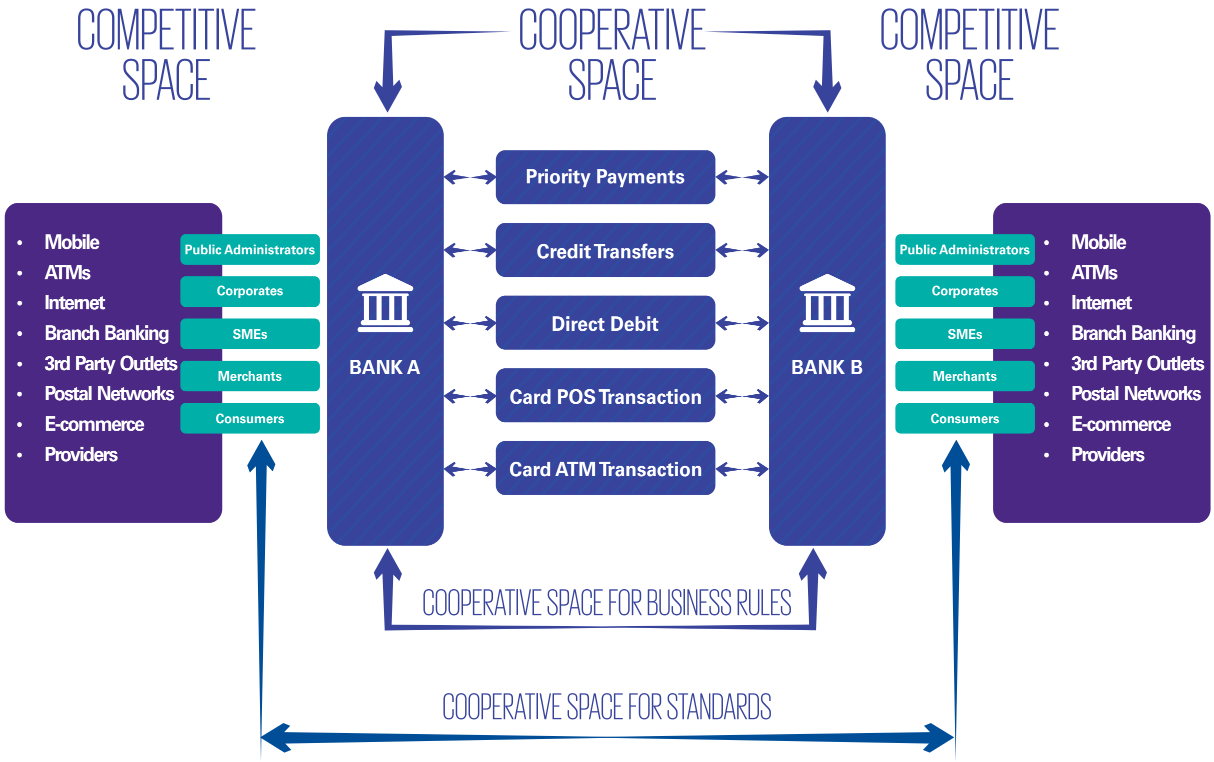
Founded in 1998, the SADC Banking Association (SADC BA) was created to serve as an interface with the Committee of Central Bank Governors (CCBG) on matters related to regional financial integration in general and the SADC Finance and Investment Protocol in particular.

Over the years, the SADC BA has increased its participation on various CCBG sub-committees and – today – the organisation plays an active role in the payments, financial markets, banking supervision and exchange control subcommittees. As such, the SADC BA is a key actor in the SADC Payments Project and views it as both strategic and necessary for the advancement of the banking sector in the SADC.



Beyond the CCBG agenda, the SADC BA also provides a regional banking leadership platform on matters related to the transformation of the banking sector. Recognising their collective duty to promote and transform the SADC into a dynamic and well-integrated economic block, the organisation is working with its member banking associations to encourage:

- The creation of an environment that encourages the development and expansion of harmonised, inclusive and sustainable banking services across the SADC
- Greater cooperation with national regulators to align goals in order to improve the integrity and credibility of banking services in the region
- Improved member association technical and regulatory capacity aimed at making their financial markets more attractive to both regional and international investors.

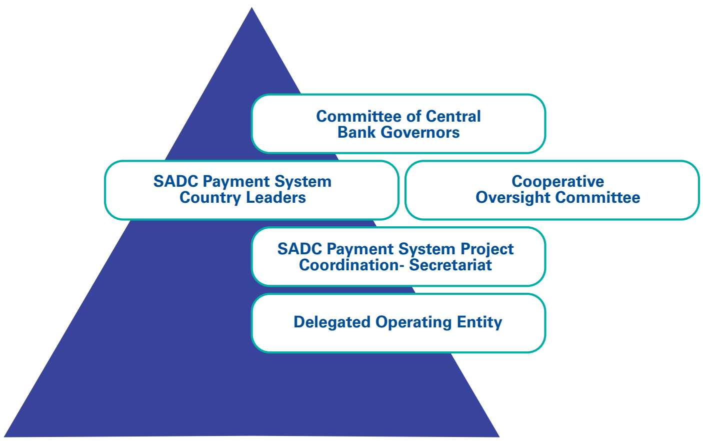


Core work themes for the SADC BA Secretariat include financial literacy regulatory compliance issues and the SADC BA Payments Training program.[22]

At the same time, the SADC BA is also the channel through which commercial banks are able to inform the development of financial market infrastructure to support inter and intra-regional trade. As a non-competitive association, the SADC BA is focused on defining payments instruments, business rules and messaging standards in the interbank space. The SADC BA Board views this as an opportunity to improve overall customer service, deliver cost reductions and improve efficiency (through higher levels of automation) in the cross-border payments environment[23].

The SADC BA's mandate with regards to payments is to:

- Set and implement regional standards for payments messaging aligned to international standards
- Define and develop regional payments instruments
- Promote the development of interoperable systems
- Develop the business processes, rule books, operating manuals, messaging guidelines and formats required to support regional payments processing and settlement
- Assume the role of Payment Scheme Management Body for the SADC Integrated Real Time Electronic Settlement System (SIRESS) environment reporting in to the Payments SADC Oversight Committee (PSOC).



What is the SADC Payments System Management Body (PSMB)?

The PSMB is an autonomous sub-structure of the SADC Banking Association. It is governed by the SADC Payments Oversight Committee (PSOC) which is made up of one representative from each Member State live in SIRESS, as well as representatives from the SADC BC and observers from the POC and the Payments Association of Namibia.

(The SADC Banking Association)

Currently, the Association is working on a number of payments related initiatives including:

- **Supporting the introduction of a bank-to-bank low value credit transfer payment scheme.** The SADC BA is helping the various Payment Associations access the intellectual property to support this scheme. This will enable them to comply with a Common Monetary Area PSOC Directive that aims to enable transfers to clear in batches through a SADC Regional Clearing and Settlement Operator (RCSO) and settled over the SADC SIRESS system.
- **Implementing a retail real-time clearing scheme for low value credit transfers.** Working closely with both banks and non-banks, this effort aims to create a retail version of the real-time clearing scheme using SADC RSCO for clearing and SIRESS for settlement. While settlement via SIRESS must be conducted by banks, non-banks can be approved by Central Banks to be accepted into the scheme (as was the case with ADLA's bank in South Africa when it received an Authorised Dealers in Foreign Exchange with Limited Authority licence).
- **Harmonising Balance of Payment codes throughout the SADC.** In an effort to ensure a uniform output of data across the regions and to assist banks who operate across several SADC markets, the SADC BA is working closely with regulatory authorities to harmonise the IMF Balance of Payments (BoP) codes across Member States. This will enable the STP of payments by ensuring the codes inserted into payments at initiation can be used by the receiving country to report upon receipt.

Payments System Infrastructure

SIRESS: An overview

The SADC Integrated Regional Electronic Settlement System (SIRESS) is a regional cross-border payment and settlement system. Operational since July 2013, the system provides automated interbank settlement between participating banks, either on a real-time or a delayed basis.

SIRESS is operated by the South African Reserve Bank on behalf of the SADC Central Banks. Currently, the system only settles payments denominated in South African Rand (ZAR), but efforts are underway to include additional currencies in the near future.

Participants in the system include Central Banks and those financial institutions authorised by the relevant Central Bank to participate in their country's settlement system.[24] There are currently 14 countries participating in SIRESS (Angola, Botswana, the DRC, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe) with 83 participating banks, made up of 7 Central banks and 76 commercial banks.[11]

The benefits of SIRESS

The benefits for customers

SIRESS essentially provides customers with a cost-effective way of transferring money between participating banks in the SADC. Rather than using traditional cross-border systems that are US Dollar based, the use of ZAR means customers only need to make one currency exchange on transfers in the region. Customers can leave their deposits in ZAR to further control their exchange rate. And, at some banks, exchanges conducted via SIRESS carry no commission fees.

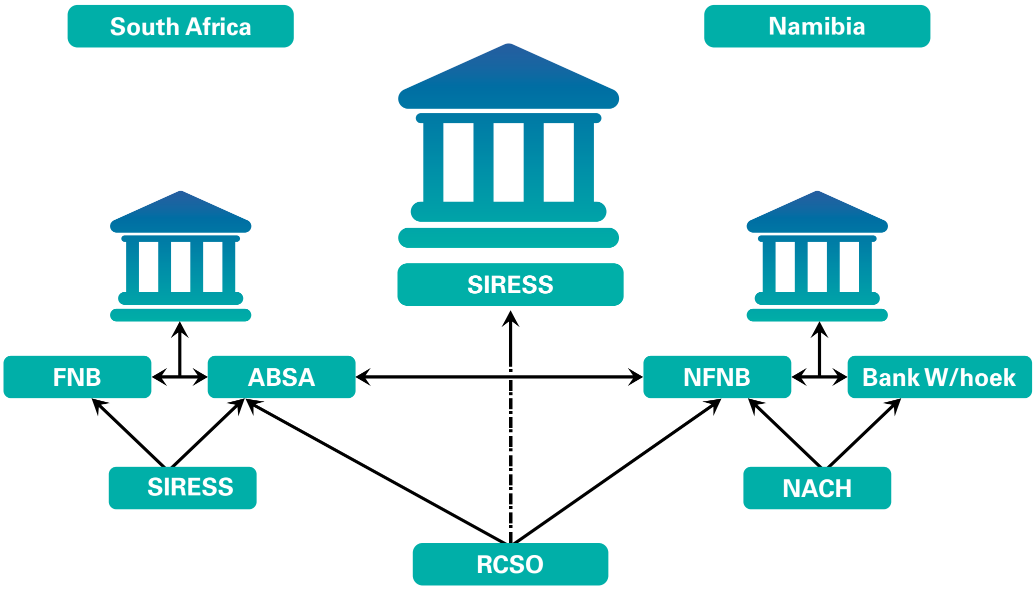
The benefits for Member States

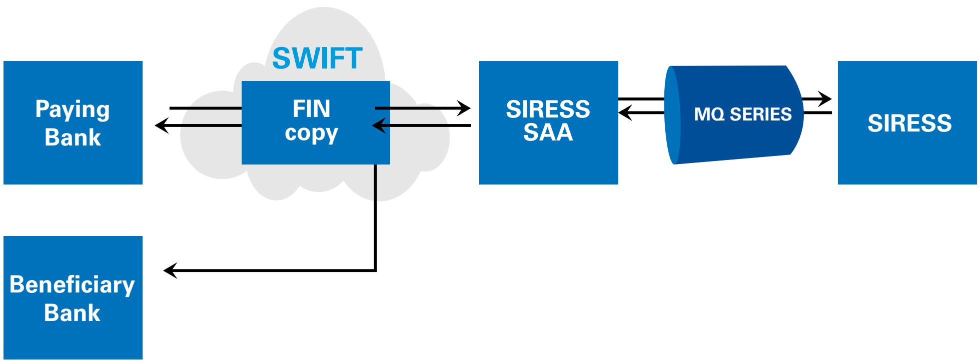
The introduction of SIRESS delivers significant benefits to participating banks and Member States, including:

- Improved risk reduction through Central Bank
- settlement Increased competition due to a more level playing field
- Enhanced transparency and regulatory oversight
- Strengthened resilience within the regional payment system
- The elimination of cross-border cheques
- Increased settlement process efficiency
- Better customer value
- Faster settlement and payment
- More simplified processing
- Standardised processes and formats
- Standard regional approaches to making payments
- More predictable payment timeframes and expectations
- Improved payment and access to social benefits and tax refunds
- The introduction of e-reconciliation and e-invoicing
- Enhanced business-to-business trade
- Increased service provider competition
- Improved development of the SADC Mobile Payments.

A look at the SIRESS ecosystem

A deeper look at: The SIRESS technical architecture

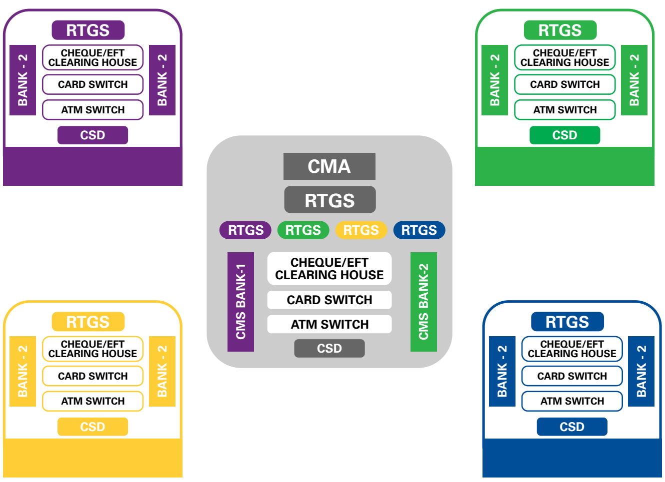




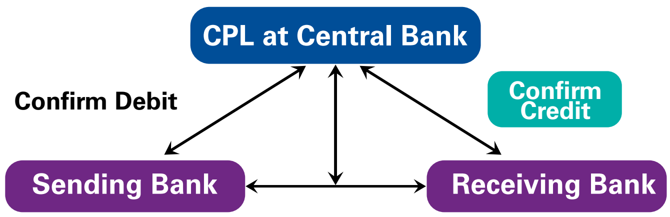
(Source: SIRESS – Functional Presentation, 2014, Bank of Mauritius)

A deeper look at: The SADC payments infrastructure

For banks within the CMA:

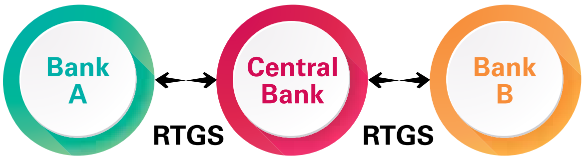


For banks outside the CMA:

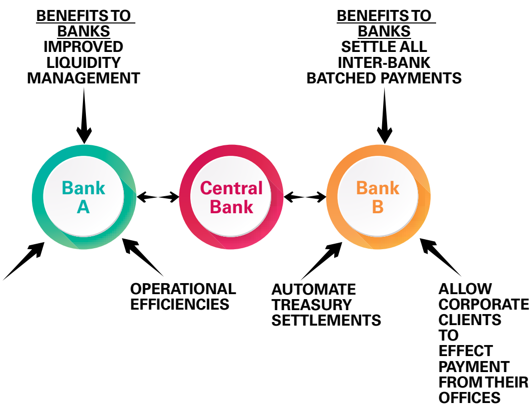


A deeper look at: Real Time Gross Settlement in the SADC

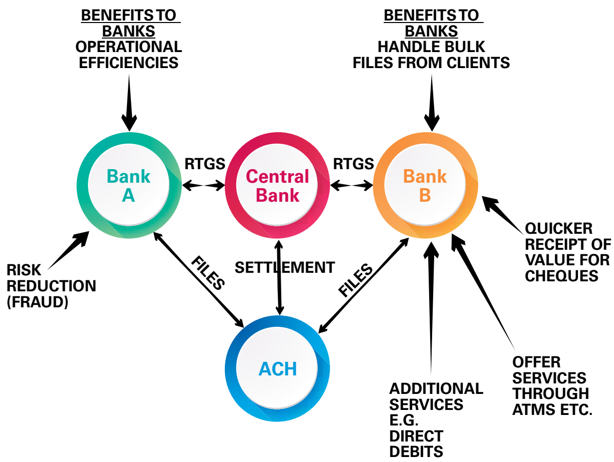
To support the execution of Real Time Gross Settlement (RTGS) and to discharge inter-bank obligations, all participating banks must maintain accounts with their Central Bank. In this model, banks electronically instruct their Central Banks to debit their account and credit the account of the bank of the beneficiary. Liquidity is ensured by banks lodging suitable collateral with their Central Bank.



RTGS – the main building block



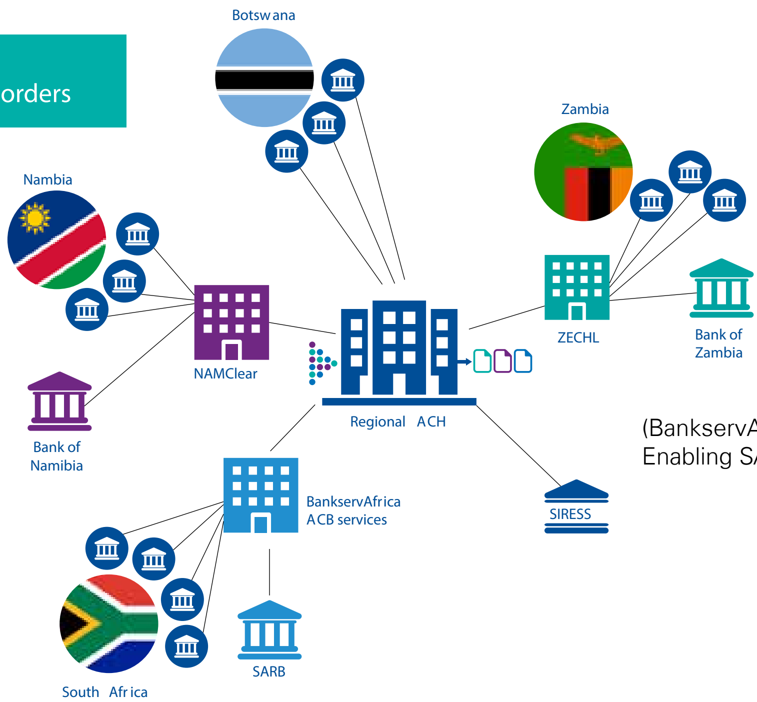
Low Value Clearing and Settlement



A deeper look at: Clearing services under SIRESS

In order to facilitate cross border retail payments among participating financial institutions within the SADC region, a regional clearing house (RCH) was introduced. The RCH's objective is to reduce the time and cost of cross border retail payments such as card, EFT credit and debit, and ATM payments. The introduction of the RCH has had a positive effect on critical economic areas by streamlining and facilitating transactions such as salary, trade and person-to-person cross-border payments.

Bulk Electronic Transfers across borders



(BankservAfrica, REGIONAL CLEARING HOUSE, Enabling SADC Cross Border Payments)

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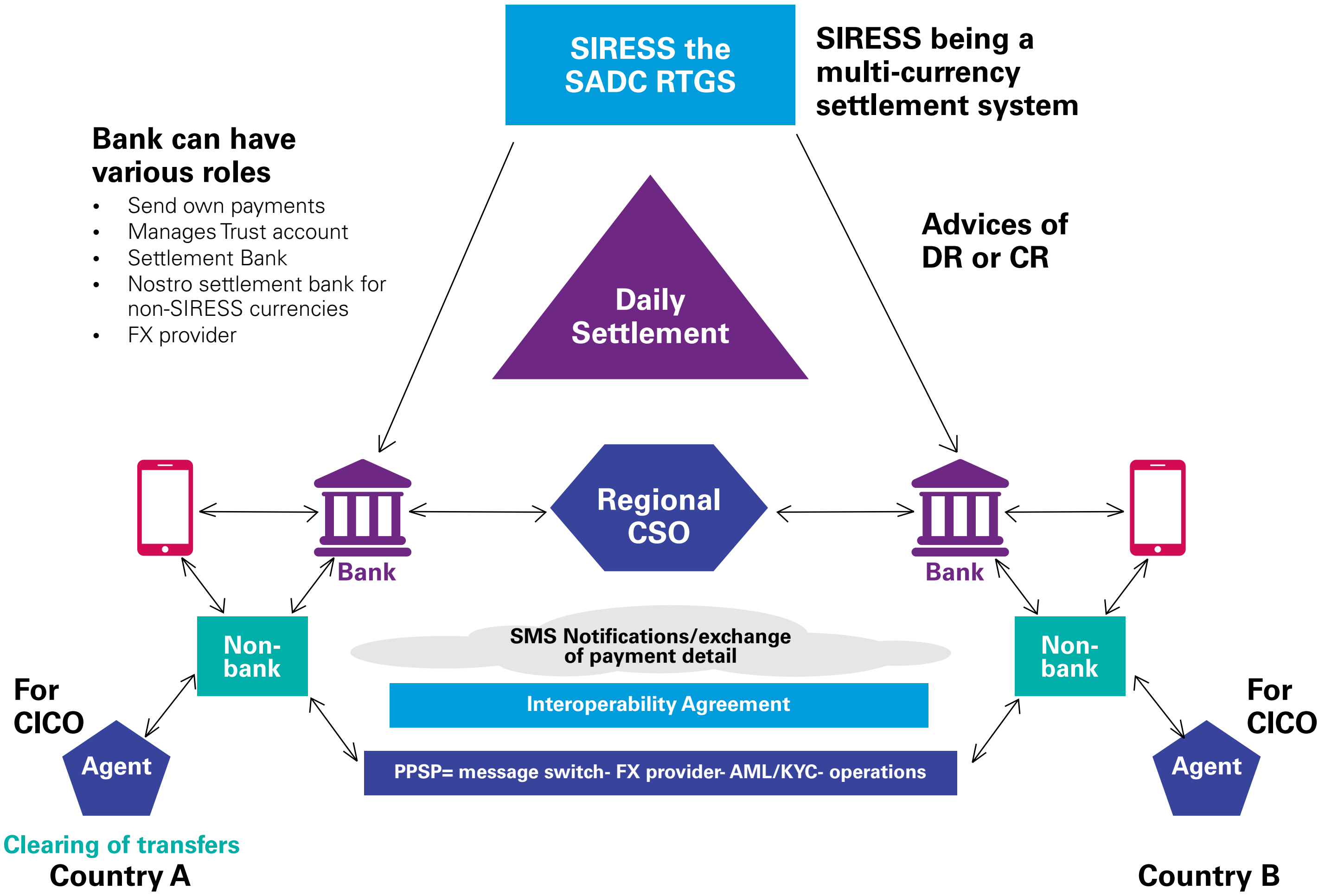
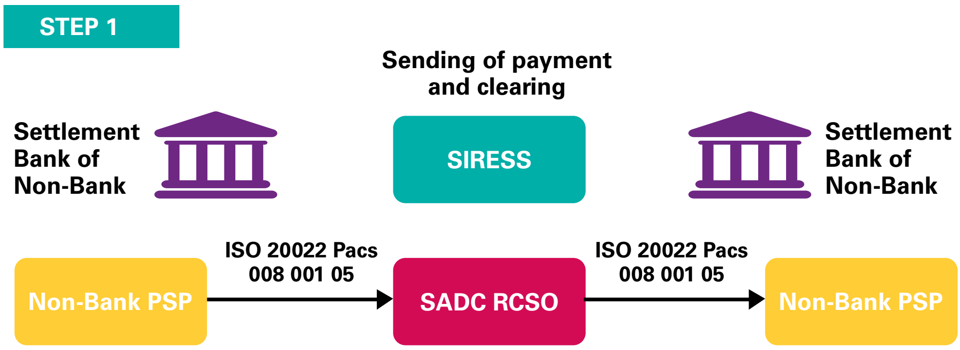
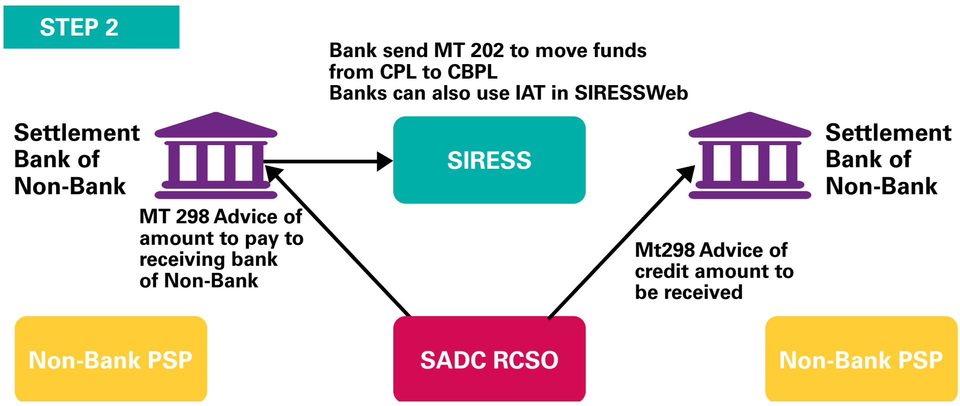
In 2015, BankServ was appointed as the first Regional Clearing and Settlement Operator (RSCO) for the SADC region by the SADC Banking Association Payment Scheme Management Body (PSMB). As the RCH, BankServ clears payment messages between participants, aggregates settlement instructions for low value, high volume transactions (retail payments) and communicates the credit and debit instructions to SIRESS.

SADC Mobile initiated Transfers Cleared and Settled via an RCSO

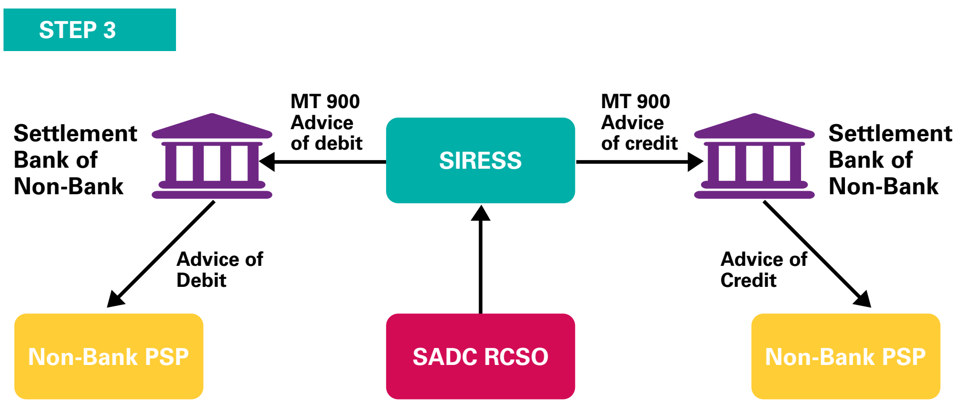




Pre-settlement



Settlement via SIRESS



Progress to date

One million transactions settled

SIRESS settled its one millionth transaction in February 2018 after an impressive rise in transaction volumes through 2017. The system's peak volume of 30,575 transactions was reached in November 2017 and peak transaction value (ZAR119.53 billion) was reached in November 2017. In March 2018, the system was processed an average of 1,415 transactions per day with an average value of ZAR5.38 billion.

The introduction of USD as a settlement currency

In May 2017, the Committee of Central Bank Governors (CCBG) approved the inclusion of the USD as an additional settlement currency for SIRESS. According to SWIFT Business Intelligence data, around 60 percent of the intra-SADC cross-border transactions conducted in 2015 were denominated in USD while just 35 percent were conducted in ZAR. The project to implement the change was launched in September 2017 and the business model was approved by the SADC Payment System Oversight Committee in March 2018. The project team is currently reviewing and developing the necessary legal agreements to support the USD inclusion.

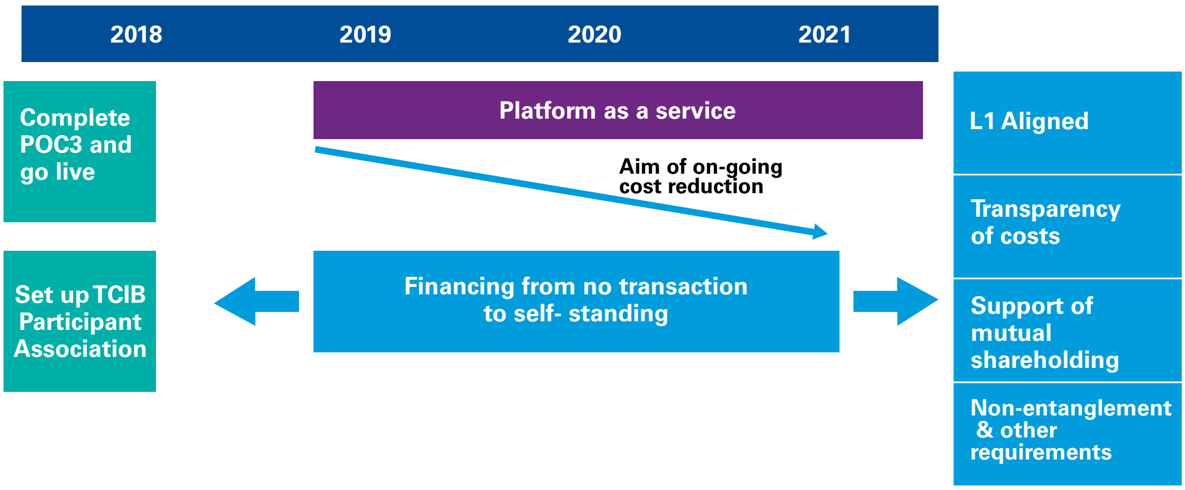
The introduction of mobile payments

As part of its cross-border payment initiative, the SADC Banking Association is actively exploring mobile payments in the region. With the support of the Bill and Melinda Gates Foundation, the Association is working with banks and mobile money service providers (MMSPs) to conduct initial proof-of-concept testing. Proof-of-capability tests were conducted in 2018 between the Regional Clearing House, the Regional Clearing and Settlement Operator, two banks and two non-banks.

Next Steps

According to the SADC Banking Association, the SADC Payments Project will focus on a number of key activities going forward. These include:

- Preparing the operator for regulatory approval
- Setting up an Association that includes all participants in an effort to ensure the long-term sustainability of the scheme
- Obtaining continued funding and support to enable adoption, on-boarding, communications, etc.
- Completing the most recent Proof of Concept and preparing for the soft launch.



The future of SADC Payments

Like most other developing markets around the world, SADC member countries will need to manage the pressures of on-going regulatory change, significant demographic shifts and the need to adapt to new models being developed by FinTech and digitisation. The SADC is also keenly focused on improving financial inclusion and promoting activities and initiatives that can bring more of the unbanked and underbanked into the mainstream system.

There is, of course, much hype around new technologies such as Blockchain and Distributed Ledger Technology (DLT). However, the hype will need to be tempered by the realities on the ground. For example, the region suffers from underinvestment in key infrastructure such as electricity generation, DLT skills and a growing imbalance between the banked and unbanked population. The adoption of emerging technologies will likely move faster given these limitations.

Lessons learned from the SADC journey

While the drive in many developing markets to develop better payments infrastructure continues, progress is often being slowed by a lack of coordinated approach, comprehensive value chain mandate, regulatory framework and cross-border capacity. The reality is that the incentives favour the status quo and barriers to entry are rather high.

For the growing number of regional groupings that are currently on the journey to payments interoperability, the key will be to reach sustainable scale. Modernising the payment system requires the inclusion of non-bank payment providers within the formal system and the growth of system volume and scale. Formal service providers will also need to embrace the financial inclusion agenda.

Achieving payments integration at a regional and continental level will require an understanding that various member countries are at differing levels of payments maturity with sometimes distinct priorities – differing economic policies, limited payments regulatory framework, disparate IT infrastructure and limited cross border payments exposure, for example.

The hope, however, is that the SADC's journey will offer valuable lessons and approaches that, in time, can be leveraged by other regional groups around the region as they move towards their own improved payments integration and – eventually – Africa-wide integration.

Rapid digitisation and new technological innovations have given rise to a range of new emerging technologies that

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New payment technologies emerge

hold the promise to expand reach, improve ease of access and enhance customer experience. Based on our view of the market, we see six key emerging technologies that we believe will impact Africa's payments landscape in the near future.

- Digital wallets: Digital wallets house electronic money (e-money), usually linked to a card or bank account, enabling the owner to carry out payment transactions. Digital wallets have been around for some time and have been a major driver of financial inclusion. Banks within the region and many of the large Fintech players continue to introduce and operate digital wallets as part of their mobile payment solution offering. Flutterwave, for example, has introduced their 'Barter' wallet which enables merchant acceptance across Nigeria, Kenya and Ghana. Similarly, Interswitch's bills payment platform, Quickteller, allows customers to add funds to their wallets and perform payments and transfers. Other digital wallet products (such as Zeepay in Ghana and Tigo Cash in Rwanda) are also seeing strong adoption.

- Application Programming Interface (APIs): APIs are revolutionising payments and encouraging the development of a collaborative payment ecosystem. While the adoption of Open APIs is expected to encourage developers to create more innovative products and propositions for bank customers, they may also lead to a diminishing of banks' current monopoly over consumers' financial data. However, regulation remains a challenge; there are currently no clear regimes or legislative frameworks for open APIs in any African country. That has allowed some banks and Fintechs to take a lead by publishing their own APIs and making them available to developers (as Equity Bank in Kenya is doing through its subsidiary Finserve). Orange Money also provides web payment APIs allowing merchants accept online payments covering tax collection, fees and donations.

- Digital Assistants and Chat Bots: Given recent advances in artificial intelligence, machine learning and natural language processing, the payments industry has experienced an increase in voice and text based transaction initiation. Digital assistants are now capable of making purchases, initiating peer-to-peer payments and paying off credit card bills. A number of use cases featuring AI enabled chat bots are being tested, including Kud.ai in Nigeria which aims to enable bill payments and support airtime top ups and money transfers.

- Near Field Communication (NFC): NFC is the technology that enables contactless payments; either by tapping or hovering an NFC enabled card, mobile device or wearable near a compatible payments acceptance terminal to complete the transaction. Wearables are becoming more prevalent as the choice instrument for contactless transactions due to its convenience and ability to integrate seamlessly into other aspects of the consumer's life. The technology is moving into Africa with Fintechs like Touch and Pay (TAP) enabling consumers to make payments with NFC enabled cards and wearables such as wrist bands within closed loop networks.[25]

- Biometrics: As part of measures to provide access to financial services for the unbanked and underbanked, biometrics technology is being leveraged as an identification and authentication tool. Biometric security tools range from fingerprint, iris and facial scan technologies through to behavioural biometrics which track personal behaviours that even the users may be unaware of (such as phone swipe style, key strokes, screen touch pressure). While widespread adoption of behavioural biometrics in Africa has yet to occur, a number of African banks and Fintechs are now incorporating biometric login and transaction authentication (in the form of fingerprint and facial recognition) on their mobile apps, payment instruments (fingerprint enabled debit cards) and channels (POS and ATM). ATMs with fingerprint authentication have been deployed in South Africa and Nigeria. And First National Bank (FNB) South Africa recently introduced a biometric ATM, TouchPoint, with which customers can carry out withdrawals, transfers, payments and other self-service activities.

New payments technologies bring new competitors

and new models

While banks remain dominant players in Africa's payment ecosystem, technology driven disruption within the banking sector has created significant opportunities for new, non-bank, players to gain a competitive foothold against traditional players.

In general, we have seen two specific types of players emerge into Africa's payment ecosystem:

1. Fintechs. Africa's Fintechs have been quick to identify and capitalise on existing pain points in the existing payment ecosystems. From mobile payments through to local and international money remittance, we are seeing Fintechs drive massive change by innovating at a faster pace than incumbents and by tapping into a largely ignored market segments – the financially excluded population and Micro, small and medium-sized enterprises (MSMEs). For example, Paystack, a Nigeria-based Fintech, has gained a dominant position in that market by developing solutions specifically for the MSME segment, focused on secure acceptance of local and international remittance.

2. Telecom Giants. Telecommunication companies have also recognised significant opportunities within the traditional payment ecosystem, increasing their focus on the mobile money segment as voice and messaging revenues decline. They have launched their own payments products and services within the payments value chain, particularly targeted at the unbanked and underserved population. For example, MTN Group and Orange Group, two of Africa's largest mobile telecommunications players, recently launched Mowali, a continent-wide mobile money interoperability joint venture which allows users send money between mobile money accounts across different providers. Together, they boast more than 100 million mobile money accounts and mobile money operations in 22 of sub-Saharan Africa's 46 markets.

Managing the cyber threat

As Africa's banks move to digitise, many executives are starting to take a closer look at their cyber risk. And rightfully so; managing cyber risk requires board level leadership, insight and decision-making. In this article, we uncover some of the more common cyber threats and offer some insights into the changing risk environment for Africa's payment ecosystem.

The digitisation of business is creating massive new opportunities for banks and disruptors to develop and commercialise innovative new products and services. Yet it has also created an entirely new type of risk for the executive agenda: cyber risk.

The problem is that – in comparison to typical items on a bank's risk registry – cyber risks are hard to predict. So are the threat actors. Countering and managing the risk will require executives and boards to apply significant leadership, insight and decision-making.

The reality of the cyber threat

It would be hard to argue the pervasive nature of today's smartphone. In most African cities – and increasingly in rural areas – smartphones have become ubiquitous appendages to our daily lives. Indeed, over the past decade, smartphones have become central to national economies, security, community and government services.

Many organisations are striving to take advantage of new models enabled by technologies such as IoT, blockchain and AI. And that is leading to a proliferation of new threat sources. In fact, according to a recent study by KPMG International, it is estimated that there will be more than 25 billion connected devices by 2020. And each of these has the potential to become a future cyber risk.

The risk goes mobile

Whereas in the past, cyber-attacks tended to focus on corporate mainframes and servers, all signs suggest that the threat is increasingly going mobile.

This is not surprising. Most of us now store significant amounts of personal data on our smartphones – seemingly innocuous items such as photos and videos; but also contact details, business information, social media accounts and – often – passwords. Accessing a person's smartphone is like accessing their deepest secrets. And cyber attackers are hungry for that.

The risk is compounded by a proliferation of devices and apps. In fact, many users now operate and connect to a multitude of apps which means they are connecting and sharing data across multiple networks. Some may be trustworthy. Others may not.

Clearly, people expect the apps they use to be secure and to respect and protect their privacy; being able to trust that your device is secure 'out there in the world' is critical. Yet, interestingly, our experience suggests that many organisations continue to struggle to get a grip on their apps' security and privacy postures, regardless of whether they have been developed in-house, by third parties or purchased 'off-the-shelf'.

Exploiting multiple channels to attack Cyber attackers recognise the opportunity. And they are rapidly innovating and deploying new attacks aimed at mobile devices and smartphones. In general, cyber attackers are trying to 'get in' through two main channels – websites and apps.

Web-based threats are the mobile equivalent of desktop threats. They lure people into accessing malicious websites on their mobile devices and this provides the attackers with access to their data. As we note below, these often include phishing scams, fake websites and other ploys aimed at attracting unsuspecting users.

App-based threats are attacks that are hidden in applications that are available on app stores such as Google Play, MTN Play and the Apple Store. In some cases, users are tricked into downloading malicious apps – programs that seem useful but are actually little more than 'Trojan Horses' for cyber criminals. In other cases, attacks are mounted onto existing trusted apps. The Xcode Ghost malware attack infected several popular apps on the Apple Store in September 2015.[26]
A review of Google's store in 2017 found more than 1,000 malicious apps.[27]

How do they get in?

Nobody purposefully downloads a malicious app. Instead, hackers and attackers use sophisticated social engineering tactics to manipulate people into giving up their confidential information or giving access to their computer systems and data.

What makes these threats difficult to manage is that they are designed to get around most of the current technical measures by preying on individual behaviour instead. Success depends more on the attackers' ability to manipulate the person than on their ability to take down a system.

Here are four of the more common ways attackers manipulate their victims:

1. Phishing: You've probably received dozens of phishing emails. They are the ones that pretend to be from your bank or a social media contact asking you to open an attachment or click on a link. But the link or attachment is just bait that unloads a payload of malicious software onto your device.
2. Smishing: Similar to phishing, this approach uses text and SMS messages to lure victims. Sometimes the text offers prizes for those who click on a link. We have seen many that prey on bank customers by asking them to reconfirm or update their Bank Verification Numbers. Data is accessed either through a virus or – sometimes – through a fake call centre where employees (i.e. hackers) press callers for personal information.
3. Spear phishing: Whereas phishing and smishing attacks tend to seek success through the quantity of attacks launched, spear phishing focuses more on targeting the attack to specific users or organisations. Attackers use personal information taken from social media sites to gain the trust of an individual, leading the victim to access a malicious website.
4. Baiting: In this form of attack, hackers request sensitive information or login credentials in exchange for things like music, movies and documents. In some cases, baiting attacks involve malware-infected software and applications being uploaded on popular download sites.

Taking the right steps for improved security

What can be done to better protect Africa's banks, payment systems and consumers from cyber-attacks? For one, investors, customers and other business stakeholders could be putting pressure on executives to take a more direct role in designing and implementing strategic approaches to cyber security. The focus should not only be on protecting data but also on enhancing the enterprise's overall agility and growth.

The rapidly changing nature of the threat is also catalysing governments and regulators around the world to develop and implement robust frameworks and policies that aim to improve overall cyber risk management capabilities. Some African nations have already started to develop new cyber security policies, strategies and bills. There is also some effort underway to create national CERTs to protect national cyber borders.

However, our view suggest that more can be done. Indeed, if they hope to encourage more innovation and digitisation in their economies, Africa's governments will need to start investing much more time and resources into complementing regulators' efforts to secure the payments technology landscape. New laws that protect providers and consumers will need to be enacted and enforced.

Organisations will also want to consider the value of cyber insurance to protect against certain cyber risks (such as the cost of business recovery). Those insurers offering cyber insurance products will need to become much more sophisticated in the way they assess cyber risk if they hope to grow this new segment into a sustainable line of business.

The big challenge for all players, however, will be in accessing talent. Indeed, cyber security talent is becoming increasingly difficult to find in today's ever-growing and dynamic technology environment. Every organisation is looking to hire and retain the type of young, skilled cyber security professionals they need to drive a proactive strategy. Governments and organisations will need to work together if they hope to solve that problem.

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Regulatory updates and developments:
South Africa, Nigeria, Kenya, Ghana and the WAEMU

Over the past two editions of Payment developments in Africa, we have looked at the changing payment regulation in a wide range of markets including South Africa, Nigeria, Kenya, Ghana and the West African Economic and Monetary Union (WAEMU). In this chapter, we provide readers with an update on the latest regulatory, sector and market developments in some of these key markets.

South Africa

- New Financial Sector Regulation Act passed. The culmination of more than a decade of collaboration between the South African Reserve Bank (SARB), the National Treasury and the Financial Services Board, the new Financial Sector Regulation Act represents the most fundamental reform of the sector in more than 30 years. The new legislation, signed into law in 2017, establishes the Prudential Authority (tasked with ensuring the safety and soundness of financial institutions) and the Financial Sector Conduct Authority (FSCA), tasked with consumer protection and market conduct. The reform heralds in a new era of regulation by objective where two entities focus on different but complimentary regulatory objectives.[28]
- SARB looks to encourage innovation. At the Payments Innovation Conference in October 2017, the Deputy Governor of the South African Reserve Bank (SARB) noted that recent innovations have made payments simpler and more convenient. "The SARB is also looking forward to exploring the potential for sandboxes and innovation hubs to test the relevance of existing regulatory frameworks and make the necessary changes," he added, noting that the SARB was working with various agencies as part of an intergovernmental Fintech working group to assess different innovations and their impact on the national regulatory landscape.[29] In the 2018 annual budget speech to the National Assembly, the Finance Minister reconfirmed that "work will continue on reforming the legislation for financial markets and the payment system to ensure that our infrastructure remains globally competitive."[30]
- SARS to provide clarity on tax implications of crypto currencies. In his 2018 budget speech, the Finance Minister also noted that "the emergence of crypto currencies is a major development to which our regulatory regime must respond.[31]" The South African Revenue Service (SARS) had planned to provide clarity on the tax implications of transacting in crypto currencies in early 2018. SARS, like most other revenue authorities around the world, is trying to assess the implications of virtual currency on its tax base. Currently, crypto currencies are treated under Capital Gains Tax. SARS is now in discussions with a number of technology companies to improve the way it tracks crypto currencies.[32]
- Discussions continue on future payments architecture. Led by BankservAfrica – Africa's largest automated clearing house – design-phase talks are underway with bank executives and the Payments Association of South Africa (PASA) to explore what the future payments architecture should look like. Modernising the payments infrastructure and promoting financial inclusion are key objectives for BankservAfrica. They also feature prominently in the SARB's Vision 2025 strategy. Key challenges include the speed of transactions, data processing and system flexibility and adaptability.[33]
- SARB launches a Fintech Programme. With the intention of taking a balanced approach to technological innovation – one that considers the potential risks and benefits of each innovation – the SARB recently established a Financial Technology Programme (Fintech Programme). The Fintech Programme will focus on three primary objectives: reviewing the SARB's position on private crypto currencies; investigating and assessing the value of innovation facilitators for the SARB; and launching a new project to experiment with Distributed Ledger Technologies (DLTs).[34]
- Tentative dates set for Financial Action Task Force (FATF) assessment. The FATF creates the global standards and guidelines for combating money

laundering, terrorist financing and other threats to the financial system. Since the last assessment in 2009, South Africa has continued working on the development of AML/CFT systems through close cooperation and coordination between a variety of government departments and agencies. Authorities have focused on building a system based on the relevant UN Conventions and international standards as set out by the FATF. Tentative dates for the next assessment have been set for November 2019. [35]

Update on privacy protection in South Africa

South Africa's government continues to take substantial steps towards developing regulation to support privacy protection. The government passed a Protection of Personal Information Act in November 2013 and, while no effective date has yet been set for the provisions to take effect, South Africa's Information Regulator (installed in December 2016) released their draft regulations for public comment in September 2017 and are now working towards publishing updated regulations.

What is South Africa's Protection of Personal Information Act (POPIA)?
The POPIA is similar to other privacy protection legislation around the world in that it sets out the conditions for the lawful processing of personal information by organisations.

This isn't just about safeguarding information. The legislation requires organisations to process personal information lawfully and in accordance with privacy considerations; and to take reasonable technological and organisational measures to safeguard personal information from loss, damage, unauthorised destruction, unlawful access to, or unlawful processing of that information.

Reputational damage aside, failure to comply with the requirements of POPIA may attract an administrative penalty of up to SAR10 million (US$693,000) and/or imprisonment of up to 10 years. And these penalties may be imposed on any organisation or person involved in unlawful acts in connection with an account number belonging to a data subject.

What does it mean for the payments sector?
South Africa's payment and debit order collection industry has a long history of implementing robust privacy policies and procedures. However, the enactment of the POPIA will still have some impact on the payment industry.

For example, the POPIA allows the Information Regulator to issue Codes of Conduct for specific sectors that prescribe how the conditions for the lawful processing of personal information are to be applied. Given the nature of the industry and the sensitivity of the personal information processed, it is likely there will be specific Codes of Conduct issued for the payment and debit order collections industry in the future.

Payment organisations will need to ensure they meet all eight conditions set out in POPIA for the lawful processing of personal information. They must also be able to demonstrate they have processes in place to meet the requirements under POPIA relating to the processing of account numbers of data subjects, utilising automated decision making processes, transferring personal information outside of South Africa and processing information for the purposes of credit reporting (which requires the prior authorisation from the Information Regulator).

Towards global compliance
In addition to the requirements of POPIA, South African organisations processing personal information (or personal data) of persons in the European Union will also need to be cognisant of, and comply with, the requirements of the European Union's General Data Protection Regulation (or GDPR). These came into effect on 25 May 2018 and apply to any organisation – irrespective of geographic location – that processes the personal information of persons in the European Union in connection with goods or services offered in the European Union. Infringements of the GDPR may attract administrative penalties of up to EUR20 million (US$22.6 million) or up to 4 percent of an undertaking's total worldwide turnover (whichever is higher).

Next steps for payments players
Our experience suggests that payment providers with interests in the South African marketplace will need to develop a thorough understanding of the requirements of both POPIA and the GDPR. They will need to assess how these rules apply to their organisation and what it will take to achieve compliance.

They will also need to spend some time improving their visibility into the types of personal data they process, the means they use to process it, the third party service providers they work with and the existing controls and processes in place to safeguard personal information.

The POPIA may not yet be enforceable in South Africa. But that does not mean consumers and regulators do not expect their payment providers to be taking every possible measure to protect their privacy.

Spotlight on: Authenticated Collections (AC)

In 2017, the government published a new Directive to outline the conduct expected from those participating in the Early Debit Order (EDO) environment. The Directive (part of the Directive for Conduct within the National Payment System) essentially aims to enhance the safety and efficiency of the payment system by reducing the number of unauthorised debit orders.

The background

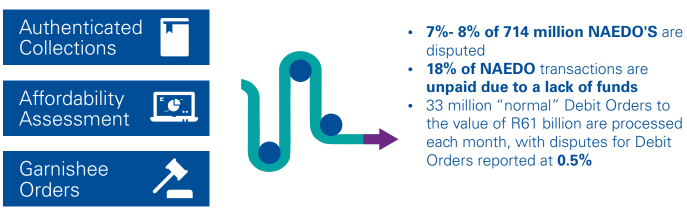
"Debit Order abuse not only has a significant impact on consumers, but also on the efficiency of the payment system. There are many scenarios where a company processes Debit Orders to a consumer's bank account without a proper or valid mandate, no mandate or with an expired one. In other instances, consumers request their banks to return Debit Orders which have already been paid even when a valid mandate is in place," noted Walter Volker, CEO of the Payments Association of South Africa (PASA).

Interestingly, South Africa is the only country in the world to have implemented an Early Debit Order (EDO) collection system. Established in 2006, the EDO system consists of the AEDO system (which provides electronic authorisations) and the NAEDO system (which provides paper-based and voice authorisations).

While the system has brought significant efficiency and security to South Africa's debit order market, the EDO has not been without its challenges.

According to the Directive, "An in-depth investigation into the EDO environment, prompted by inefficiencies in the EDO systems, identified various issues, in both the Authenticated Early Debit Order (AEDO) and the Non-Authenticated Early Debit Order (NAEDO) systems. These issues spread across the payment system value chain from the customer who authorises the debit (payer) through to the collector (user), system operators, sponsoring and acquiring banks."[36]

The Directive noted that the issues included, amongst others, the growing number of disputes by payers relating to unauthorised debits and user complaints of illegitimate payer initiated reversals. A key concern for the SARB is the growing mistrust in the EDO systems and increasing complaints of abuse. These trends indicated the underlying structural issues to be addressed.



In 2013, the SARB issued its *Collections Review: Terms of Reference for the Payments Association of South Africa* which defined the scope and minimum requirements for the design, development and implementation of an appropriate approach to EDO collections.

This, in turn, led the PASA to launch the Authenticated Collections (AC) initiative aimed at creating a method of collection that protects both sides of the market (payers and users). The PASA was tasked with developing a new authentication option for EDOs that also enables future dated debit orders to be authenticated.

The objectives and supporting environment

The AC initiative aims to:

- Reduce fraudulent debits and un-paids, specifically in NAEDO (non-authenticated early debit orders)
- Increase the successful collection and reduce the number of un-paids/disputes
- Rule out any cash flow management strategies from abusive consumers
- Protect companies by making authenticated mandates less disputable.

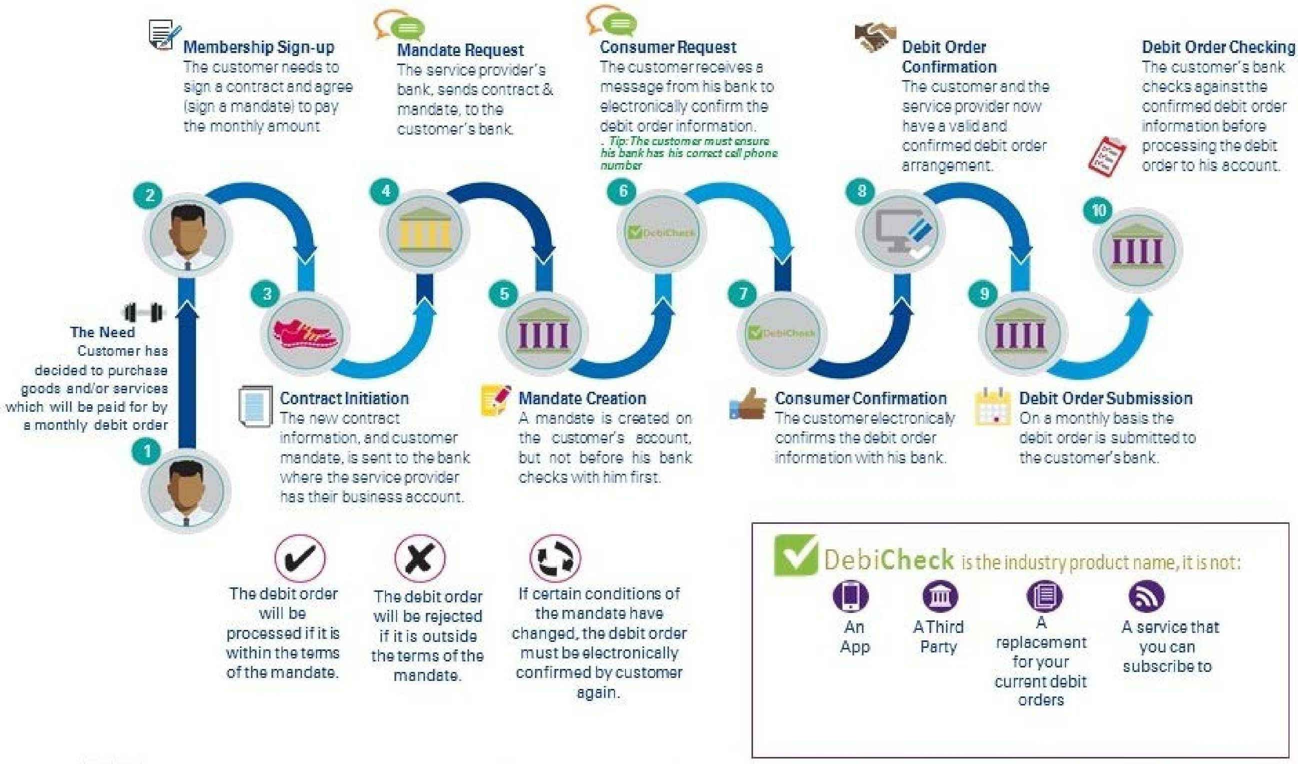
The initiative includes a number of parallel implementations that will be required to enable the new AC approach. In particular, it requires:

- Penalties for any debit order found to be without a mandate after the transaction has been disputed by a customer.
- Ensuring that all Early Debit Orders are subjected to electronic authentication (by means of an OTP or other technology) by the account holder prior to releasing the payment instructions.
- Registration of a unique abbreviated short name (ASN) to better support the monitoring of successful, unsuccessful and dispute ratios.
- A debit order abuse list, containing companies that have been abusing the debit order systems. These companies will be put under review by PASA and, if they are found to be submitting debit orders without adequate mandates, will be blocked from the debit order system altogether.

All organisations participating in the EDO payment clearing houses, namely AEDO and NAEDO, are required to implement AC by 31 October 2019. Participants were required to fully implement AC as the only PCH to initiate new debit order instructions in the early processing window by 31 January 2019. From this date no new, extended or renegotiated AEDO or NAEDO collection agreements may be concluded.

A closer look at the AC process

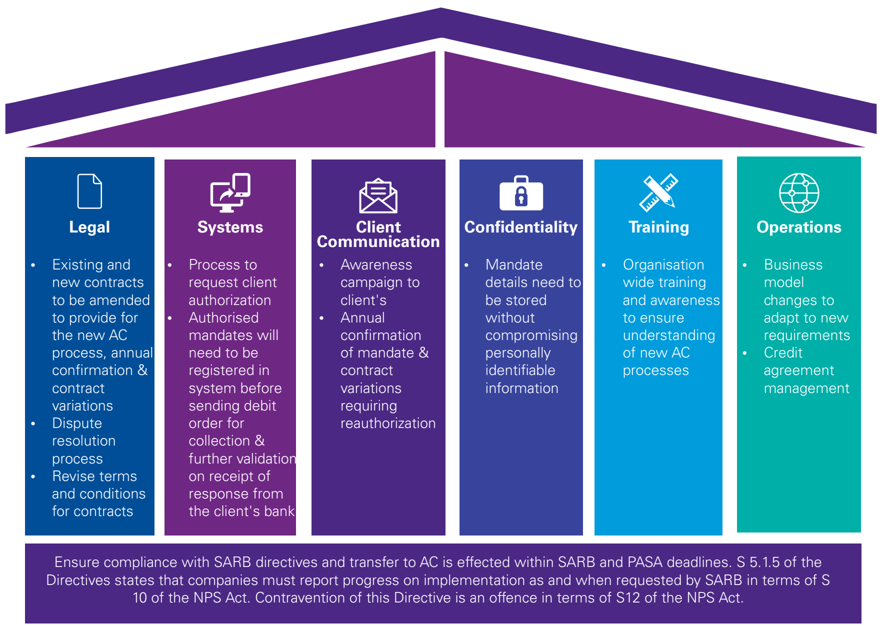
Supported by the world's first debit order authentication system – known as DebiCheck – South Africa's AC initiative is currently being piloted by more than 10 domestic banks.



"DebiCheck is a massive project; its [implementation] is not just up to the banks but to all the users, including all the big companies you usually pay debit orders to," noted PASA CEO Walter Volker.

What does it mean for payments players?

As we have illustrated in Figure X, the implementation of AC has wide-reaching implications for businesses operating in South Africa's payments sector. If companies are unable to authenticate the consumer's mandate to debit their bank account via the new DebiCheck process, the transaction will not be processed. The move to authentication provides all participants with enhanced protection.



Looking ahead
While progress is clearly being made on the AC initiative, more action will be needed in order to deliver on the full benefits. Consumer education will be key; banks and merchants will need to help drive awareness around the process, its benefits and the practicalities of using it. Standardisation around a universal set of solutions would also be key to driving adoption and delivering a consistent user experience.

What is clear is that South Africa's efforts to improve the EDO environment are world-leading and this, in combination with other key factors, should help the country raise its profile as one of the world leaders in payment solutions.

Nigeria

- Central Bank retains existing rates for cash. Having extended the government's 'cashless' policy to all 36 States and the FCT in 2014, the Central Bank of Nigeria (CBN) released a new circular in February 2017 that suggested that rates would change. The circular set limits and defined charges for cash withdrawals and deposits in bank branches as a way to further promote the adoption of electronic payment channels within the system. The circular set charges of 1.5 percent for cash deposits and 2.0 percent for cash withdrawals on amounts of between NGN500,000 and NGN1 million (US$1,400 and US$2,800) starting in April 2017. However, in another circular issued in April 2017, the CBN reverted to the old charge structure (illustrated in Figure X).[37]

RTGS ***Settlement & Payment Finality happen at the same time on the RTGS system***	
Types of Transfer	**Point of Payment Finality**
Inter-Bank Funds Transfer	The sending bank's account is debited and the receiving bank's account is credited
Third-Party (Customer) Funds Transfer	The sending bank's account is debited and the receiving bank's account is credited
Net Settlement	The sending bank's account is debited and the receiving bank's account is credited
Mobile Payments ***Once payment is confirmed, settlement must be guaranteed***	
Types of Transfer	**Point of Payment Finality**
Intra-scheme/ Inter-scheme Transactions	The switch successfully transmits the authorisation message from the sending Mobile Money Operator (MMO) to the beneficiary (MMO/Bank)
International Remittance to MMO	The MMO's system credits the customer's wallet
Over the Counter/Walk-in Transactions	NIBSS confirms and processes the transactions and sends notifications to both the sending and beneficiary MMOs
Online Payments	A confirmation message from the switch to the beneficiary bank confers finality of transactions
ACH, Cheque & Instant Payments	
Types of Transfer	**Point of Payment Finality**
Cheque and ACH Debit	Payment Finality occurs at 10pm on day T+1 for all cleared instruments (after clearing session closes)
ACH Credit	Payment Finality occurs when receiving bank credits beneficiary's account (after clearing session closes)
Instant Payment	The instant payment switch sends authorisation response to the presenting bank and response is communicated to initiating customer
Card Payments	
Types of Transfer	**Point of Payment Finality**
P.O.S Purchases (and other card present trans-actions)	When the issuer authorises the transaction
Electronic Bill Payments (and other card NOT present transactions)	When the issuer authorises the transaction

- 'Final and irrevocable' defined. In July 2017, the CBN issued a circular that clearly defines the specific point at which payments are deemed to be final and irrevocable. It includes the four payment schemes in Nigeria (the Real-Time Gross Settlement system, Cards, Mobile and ACH/Cheque/Instant Payments) and ensures that no payment system will invoke the principle of 'unwind'. The unwinding of payments by one participant could cause further banks to breach their collateralised position which, in turn, could create more systemic risk in the payment system. An overview of the specific 'point of payment finality' across the various schemes can be found in Figure X.[38]

- New interchange fee suspended. At the end of 2016, the CBN issued a directive that introduced a new interchange fee as a replacement to the Merchant Service Charge (MSC). In its place, the CBN announced they would be introducing a new pricing scheme where merchants would control the MSC and the Central Bank would control the interchange fees. The idea was to increase payment card issuance and utilisation, and to drive greater investment into loyalty programmes and the expansion of acquirer network infrastructure. However, in a circular issued in April 2017, the CBN announced that it was suspending the implementation of the new scheme. Industry stakeholders are currently awaiting further instruction on the future of the implementation.[39]

- A framework for USSD in Financial Services. Over the past two years, USSD technologies have seen rapid adoption across Nigeria's mobile payment ecosystem. While this has unlocked new, cost-effective, user-friendly and handset-agnostic services for customers, the Central Bank recognises that the technologies are also vulnerable to data breaches. As a result, the CBN released a framework to establish the rules and risk mitigation considerations they expect from financial services organisations with USSD offerings. The regulation defines which entities are eligible to obtain USSD short codes, identifies potential vulnerabilities, offers mitigating actions and raises other considerations aimed at ensuring the safety and security of the electronic payments system.[40]

- Regulation for bill payments announced. In March 2018, the CBN published its Regulation for Bill Payments in Nigeria. Drafted to cover bill payment services offered by various players, it includes services offered by Payment Service Providers on various payment channels, payment platforms seeking to integrate the payment side of commercial activity, and merchant aggregators. The regulation outlines the minimum compliance standards it expects for the processing of bill payment transactions and provides eligibility criteria for any entity or person looking to operate a bill payment platform in the country.[41]

- Fintech regulatory sandbox launched. In collaboration with the Nigeria Inter-Bank Settlement System (NIBSS), the CBN has launched a regulatory sandbox designed to allow Fintech start-ups to test solutions in a controlled environment. The initiative, which aims to create an environment of innovation in Nigeria's financial services sector, will be managed by the Financial Service Innovators Association of Nigeria and supervised by the CBN and the NIBSS.

- Instant (inter-bank) EFT services outlined. In September 2018, the CBN issued new regulation to cover Instant Electronic Funds Transfer Services such as NIBSS Instant Payments (NIP). The regulation outlines the roles and responsibilities for those participating in EFT services, including the operational rules, rights and obligations of system participants. The regulation states that instant EFT transactions must be settled no later than on a T+1 basis. It also creates the basis for sanctions to be placed on participants who fail to reverse failed transactions or delay the application of funds into a beneficiary's account.[42]

- Cybersecurity framework for DMBs and PSPs released. As the prevalence of more sophisticated cybersecurity threats rises, the CBN has released its Framework and Guidelines for Risk-Based Cybersecurity for Deposit Money Banks (DMBs) and Payment Service Providers (PSPs). The framework outlines the minimum requirements the Bank expects of all DMBs and PSPs in their respective cybersecurity programmes. The framework covers cybersecurity governance and oversight, cybersecurity risk management systems, cybersecurity operational resilience, metrics, monitoring and reporting, as well as compliance with statutory and regulatory requirements.[43]

- Payment Service Bank guidelines released. In its continued effort to extend access to cash deposit and payment services to the unbanked and underbanked population, the CBN has released guidelines for the licencing and regulation of Payment Service Banks. The new regulations are an important development in Nigeria's payment landscape as they mark the first time that telecoms companies have been allowed to participate in the provision of financial services in the country. Eligible promotors include telecoms companies, banking agents, retail chains, postal service providers, fintech companies and financial holding companies. The regulation also allows Mobile Money Operators to convert their existing licences into PSB licences.[44]

- Increased daily limits for mobile money transactions. In another effort designed to deepen financial inclusion and enhance access to financial services, the Central Bank announced new daily transaction limits and balance limits for mobile money wallets in September 2017. The revision, based on the existing KYC tier levels in Nigeria, increases the cumulative daily transaction total to up to NGN5 million (US$14,000) and allows for unlimited balances for the highest tier clients. At the same time, the Bank has reduced the KYC requirements for the lowest tier (Tier 1) mobile money wallet holders as a way to further reduce barriers to inclusion.[45]

- Updated rules for the Nigerian Bankers' Clearing System (NBCS). The Central Bank published new rules for the operation of the NBCS that supersede any previous NBCH rules, Cheque Truncation Guidelines, NACS rules or Clearing & Settlement guidelines. The new rules include notable changes. For example, paper-based direct debit instruments are no longer eligible for clearing purposes and clearing periods for paper-based payment instruments have been reduced from T+2 to T+1. Electronic payment instruments must now be presented for clearing the same day (providing the instruction has been received from the customer at least two hours before the closure of the current session).[46]

- Direct debit scheme revised. Initially introduced in 2010 as a cashless form of financial settlement, the direct debit scheme has been slightly revised. The scheme, which allows a biller to collect payments from a payer through a direct debit transfer between bank accounts (as defined in a direct debit mandate), provides a platform for billers to pool funds from multiple accounts in a more efficient manner. The updated rules allow the service to be deployed on channels provided by the biller through its bank or payment service provider. The minimum number of days required for an Advance Notice from the biller to the payer has been reduced from 14 business days to ten.[47]

- Draft licence tiering scheme for payment system providers published. In an effort to better address the growing adoption of Fintech solutions in the Nigerian marketplace, the CBN is currently exploring a licence tiering system that categorises payment service providers into three tiers based on their impact on the financial services industry. (At the time of printing, NGN1 million = US$2,800)

  - Super Licence – covers Switching, PSSP, PTSP, Non-bank merchant acquiring and Super Agencies. Minimum shareholders fund is set at NGN5 billion with a NGN2 million licence fee and a N1 million renewal fee. Licences are valid for three years.

  - Standard Licence – covers Mobile Money Operators, Super Agencies and Non-bank merchant acquiring. Minimum shareholders fund is set at N3 billion with a NGN1 million licence fee and NGN500,000 renewal fee. Licences are valid for three years.

  - Basic Licence – covers Super Agencies, PSSP and PTSP. Minimum shareholders fund is set at NGN50 million for Super Agencies and NGN100 million for PSSPs and PTSPs. Licence fees are NGN100,000 and renewal fees are NGN50,000. Licences are valid for two years.[48]

- Expansion of Nigeria Uniform Bank Account Number (NUBAN) scheme to include OFIs. First introduced by the CBN in 2010 as a way to create a uniform customer bank account numbering structure across Nigeria's Deposit Money Banks, the NUBAN scheme is being expanded to include Other Financial Institutions (OFIs). The scheme has enabled the development of many new payment innovations in Nigeria, most notably the NIBSS Instant Payment (NIP) solution. Given the increasing role being played by OFIs in Nigeria – Primary Mortgage Institutions, Micro-Finance Banks, Developmental Financial Institutions and Mobile Money Operators to name a few – the CBN has expanded the scope to bring these OFIs into the payment system. The NUBAN format will now consist of 16 digits.[49]

- Draft regulation for the operation of Indirect Participants released. The Central Bank released draft regulation to provide a mechanism and framework for the clearing and settlement of indirect participants' payment instruments through clearing banks. Settlement must only be carried out by banks with settlement rights or clearing banks in a sponsorship agreement with a settlement bank. The regulation also specifies the minimum criteria required to qualify as an Indirect Participant and sets the conditions for their participation in the relevant key components of the payment system.[50]

- New regulation drafted for non-bank merchant acquirers. In September 2018, the CBN published an exposure draft of a new Regulatory Framework for non-bank acquiring in Nigeria. According to the draft, non-bank acquirers will be required to implement policies that (at least) reflect the minimum standards established by the Card Scheme to mitigate risk to the system. Non-bank acquirers will also need to develop a robust risk management framework and be sponsored by at least three acquiring banks.[51]

5

Kenya

- Single supervisory centre created for financial services. Kenya's cabinet approved a new Financial Services Authority Bill in early 2017. The bill consolidates the roles previously served by the Capital Markets Authority (CMA), the Insurance Regulatory Authority (IRA), the Retirement Benefits Authority (RBA) and the Saccos Societies Regulatory Authority (SSRA) into one single supervisory centre. The bill aims to eliminate any regulatory gaps in Kenya's financial services industry and to increase protection for financial services consumers in the country.
- New capital requirements for insurance companies announced. Kenya's Treasury Secretary announced a phased increase in the basic capital requirements for insurers operating in Kenya. General insurers and general reinsurers will need to boost capitalisation by 100 percent; life insurers will require a 275 percent boost and life reinsurers will see a 63 percent boost in capital requirements. Those with combined lines will need to be able to show they can cover each line separately. The new rules also outline a hybrid system for determining the amount of capital required.
- Competitive landscape shifts in the banking sector. Three new banks have announced their intention to start operations in Kenya in the near future. Both Mayfair Bank Limited and DIB Bank Kenya were granted licences to operate in Kenya by the Central Bank in 2017. And JPMorgan Chase – one of the world's largest banks – announced its intentions to rekindle its market entry plans for Kenya. At the same time, there have been a number of acquisitions in the market: Diamond Trust Bank Kenya acquired all of Habib Bank Limited in 2017 while I&M Bank acquired 100 percent of Giro Commercial Bank. SBM Holdings Limited also struck a deal to pick up 75 percent of the value of Chase Bank Kenya (no relation to JPMorgan Chase) which had gone into receivership in 2016.
- New interest rate caps come into effect. In 2016, Kenya's government passed a new law regulating interest rates on bank loans and deposits – effectively capping the interest that banks can charge on these types of products and transactions. The law sets a maximum lending rate of 4 percent above the Central Bank base rate (which currently stands at 10 percent). It also sets the minimum interest rate for deposit holdings in commercial banks to at least 70 percent of the Central Bank base rate.
- Deadline set for IFRS 9 alignment. The Central Bank of Kenya has given banks five years to factor in the additional provisions of IRFS 9. Having faced a significant drop in private sector credit growth in 2015/2016, many of Kenya's bankers worried that the implementation of IFRS 9 could depress growth further. However, IFRS 9 became mandatory for all financial institutions under the Central Bank of Kenya's supervision in January 2018.

Ghana

- Payment systems and services bill draft released. The Bank of Ghana (BoG) recently released a draft bill aimed at consolidating existing mobile money and payment system regulations. In particular, the new bill – the Payment Systems and Services Bill 2017 – will consolidate the Electronic Money Issuers and Agents' Guidelines and the Payments Systems Act 2003 into one piece of legislation. The bill places a wide range of payment providers – including specialised deposit taking institutions, dedicated electronic money issuers, payment service providers, banks and their affiliates and agents – under more direct supervision of the BoG and includes articles aimed at protecting consumers and customer information. The bill is currently before the Ministry of Finance (MoF) and will soon be sent to Cabinet for consideration.

- Guidelines issued for interest payments on e-value. The BoG issued a directive requiring Mobile Money Operators in Ghana to pay interest on their customers' e-value. Under this arrangement, the banks would continue to benefit from a relatively stable, large and growing deposit balance (even though they now have to pay interest on it). Mobile Money Operators would retain up to 20 percent of the interest earned (which the BoG suggests should be used to drive customer acquisition). And the remaining 80 percent of the interest would go to customers. The BoG hopes this will help enhance customer benefits while providing all players an incentive to support the growth of mobile money in Ghana.

- Regulator moves to encourage greater innovation. Recognising that digital payments will only drive financial inclusion when supported by the right regulatory environment, the BoG is taking strides to encourage innovation within the payments regulatory system. The BoG recently announced plans to establish a regulatory sandbox where innovators can test their ideas in a live but controlled environment under the Bank's supervision. The BoG has also started to invest into new Regulatory Technologies (or Regtech's) as a way to identify the regulatory requirements of digital payments, improve the monitoring of compliance and enhance overall compliance within the service provider community.

- New Information Security Framework on the drafting table. The BoG is currently drafting a Cyber and Information Security Framework that aims to establish security protocols and procedures to cover a wider range of different routine and emergency scenarios, inter and intra-company communication and cooperation as well as network security. The framework is expected to require all institutions that handle, process, store or transmit credit or debit card information to become Payment Card Industry and Data Security Standard (PCIDSS) certified.

WAEMU

- New anti-money laundering instructions issued. Two new instructions have been issued to help enhance Anti-Money Laundering (AML) and Counter-Terrorism Financing (CTF) practices in the region. Instruction No. 007-09-2017/BCEAO on the procedural requirements for financial institutions to implement the Uniform Act on AML/CTF in the WAMU member states and Instruction No. 10-09-2017 which establishes a threshold for reporting cash transactions (over XOF15 million/US$25,700) to the National Financial Information Processing Unit were both issued in 2017.

- Banking system controls tightened and updated. In 2016, two new decisions were announced that influence the control end of the banking system. Decision No. 013-24-2016/UMOA sets a new prudential framework based on Basel I and Basel II. Decision No. 357-11-2016 establishes a new accounting system that closely resembles IFRS. Both decisions became applicable on January 1st, 2018.

- Limited competition continues to weigh on e-money issuance. As of the end of February 2017, there were just 10 e-money issuers with a licence to operate in the region. The list, dominated by Orange, MTN and Airtel, suggests the greatest competition may be in Cote d'Ivoire (where four licenced players operate).[52]

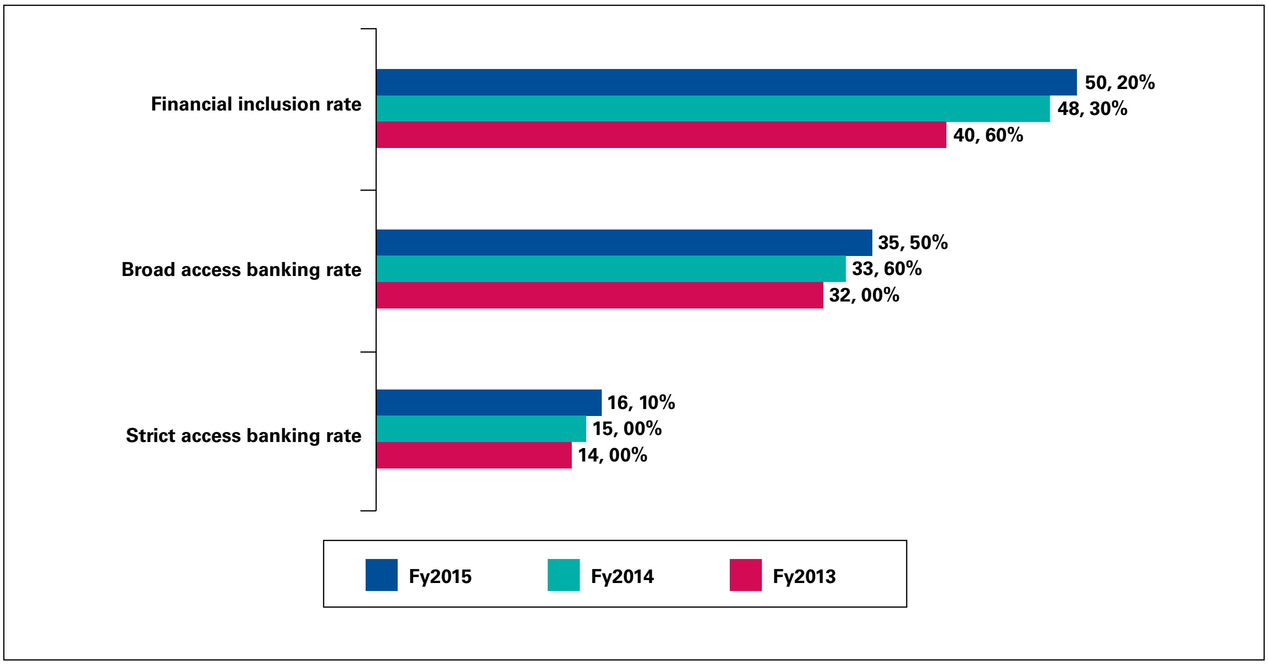
- Increased transaction levels across the region. According to the WEAMU commission FY2016 Annual Report, the region enjoyed economic growth of 6.8 percent in FY2016. The value of transactions conducted via mobile money rose significantly – from around XOF1.6 billion (US$2.75 million) in 2013 to around XOF11.5 billion (US$19.8 million) in 2016. Transaction volume through the SICA-UEMOA Automated Interbank Clearing System was also up (2.9 percent year-over-year), led by increased transaction volumes in Mali and Senegal, as well as at the sub-regional level.

SICA-UEMOA volume and value up

Countries	Transaction volume		Value (in billions of XOF)			
	FY2015	FY2016	%	FY2015	FY2016	%
Bénin	438 417	432 882	-1,26%	2 480	2 330	-6,05%
Burkina	1 132 863	1 091 276	-3,67%	4 577	3 982	-13,00%
Côte d'Ivoire	6 067 248	6 139 278	1,19%	18 898	18 993	0,50%
Guinée Bissau	18 681	18 439	-1,30%	74	73	-1,35%
Mali	668 613	735 842	10,05%	4 165	4 872	16,97%
Niger	182 142	177 208	-2,71%	1 033	956	-7,45%
Sénégal	3 222 216	3 462 429	7,45%	9 322	10 353	11,06%
Togo	411 281	416 498	1,27%	1 587	1 556	-1,95%
Sub region	87 945	109 907	24,97%	432	494	14,35%
Total WEAMU	12 229 406	12 583 759	2,90%	42 568	43 609	2,45%

Source: Central bank annual report on payment system, FY 2016

- Rising adoption of e-Money payment systems increases financial inclusion. As the number of e-Money payment system subscribers rises (from 11 million subscribers in 2013 to more than 36 million in 2016), transaction volume has increased seven-fold. This has led to a strong rise in the rate of financial inclusion across the region with active e-Money accounts suggesting financial inclusion rates of up to 50 percent. Cote d'Ivoire boasts the most e-Money subscribers with 12.8 million (and 35 percent of the regional volume) – double the number of Mail (at 6.8 million) – while Senegal, Benin and Burkina Faso each boast more than 4 million subscribers.



Source: Central bank annual report on payment system, FY 2016

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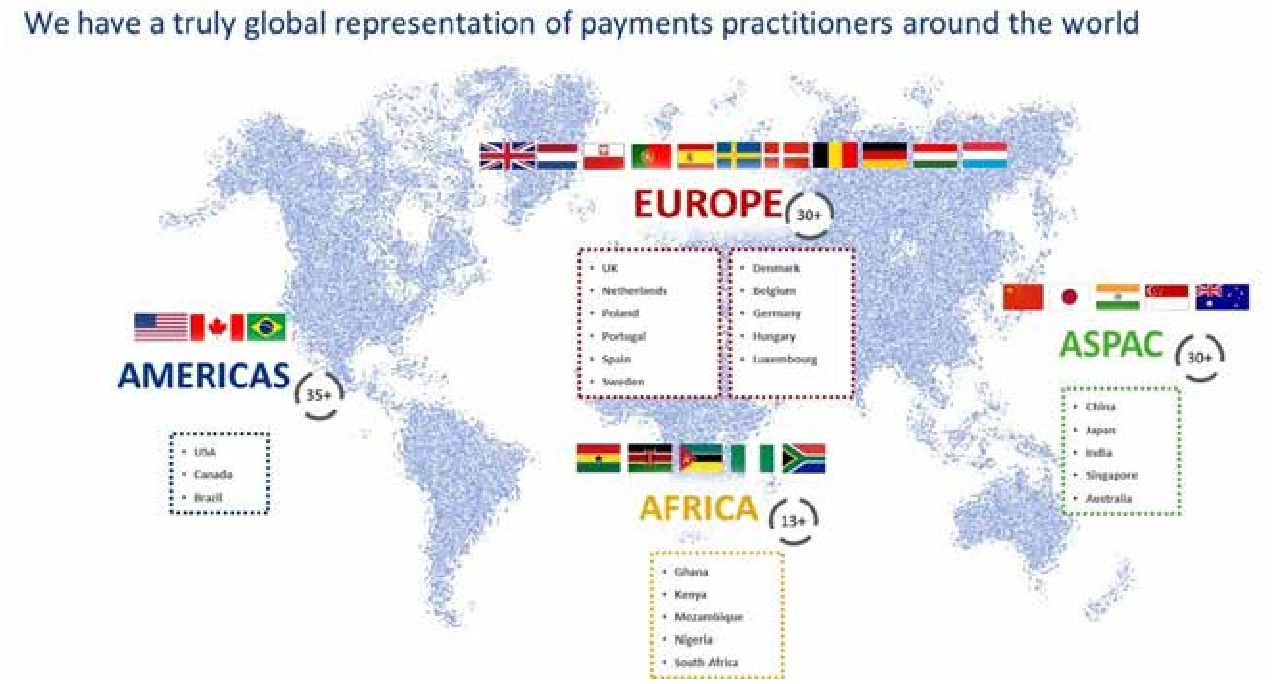
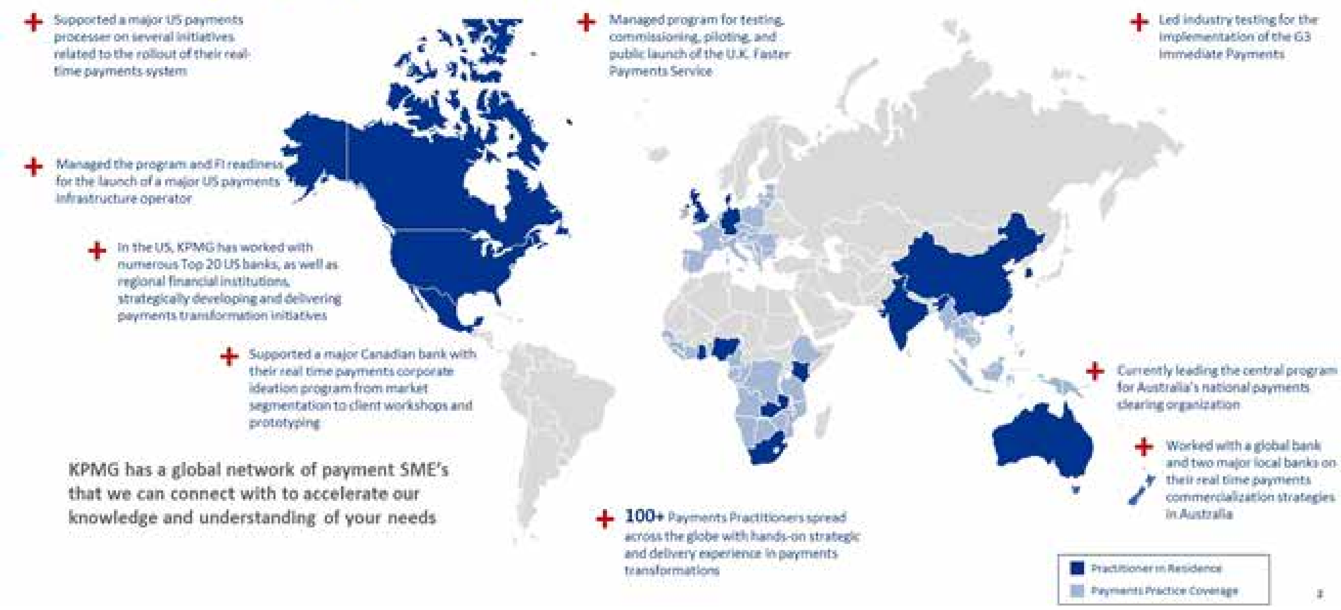
KPMG Global Payments Team



KPMG leads the global market in delivering strategic payment projects



Find the Right Fintech Partner

The fintech industry has experienced rapid investment and growth in a very short space of time. In this cluttered marketplace it is crucial for financial institutions to collaborate with the best fintech to get and maintain their competitive edge, yet the right companies are not easy to find.

KPMG-Matchi has proven and practical approaches to help you to find high quality and relevant fintech solutions from around the world. We do this in a way that builds internal support and leads to real business impact.

Key Mechanisms for Fintech Matchmaking and Successful Collaboration

Rigorous and robust process – produces relevant fintech shortlist
Global Innovation Challenge

Short timeframe, defined reach process – produces relevant shortlist
Fintech Scan

Understand the market and benchmark internal activities
Benchmark Report

Fintech trends / Landscape overview
Training

The outcomes of using Matchi's mechanisms includes:

- Solutions to POC & implement
- Accelerator recruitment
- Open API optimisation
- Event showcase
- Drives Strategy Development
- Landscape review
- Service/ product development
- Sensitise top management (Precursor for strategy development)

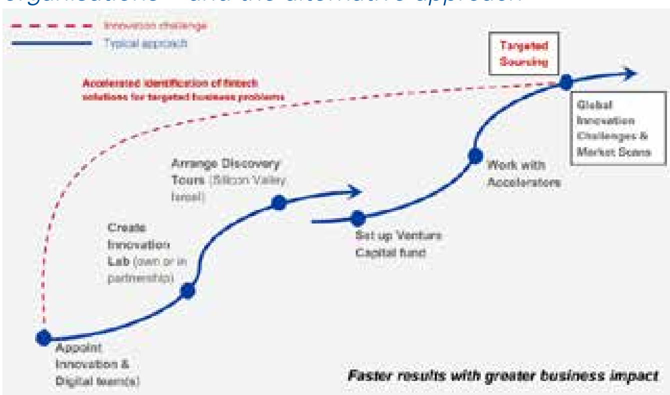
Identify problem/Opportunity areas to grow your business and…

… Get connected to the best fintech solutions globally in 10 weeks

Test and implement solutions within 3 months

Learn from valuable case studies and experiences from around the world

Typical evolution of the innovation approach in large organisations – and the alternative approach



Leveraging our reach of more than 4000+ fintech firms from around the world, we have pioneered targeted and facilitated matchmaking mechanisms to ensure the right fintech solution is quickly selected and reviewed without compromising quality.

Matchi by the numbers

Global innovation challenges since 2014	**24+**
Matchi has worked with Financial Institutions from around the world	**100+**
Fintech solutions categorised and searchable	**4000+**
Fintech connections in our network	**6000+**

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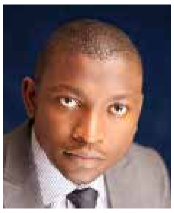

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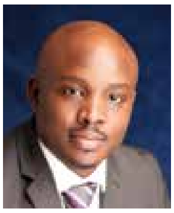

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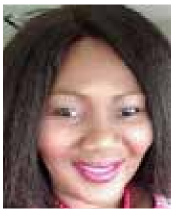

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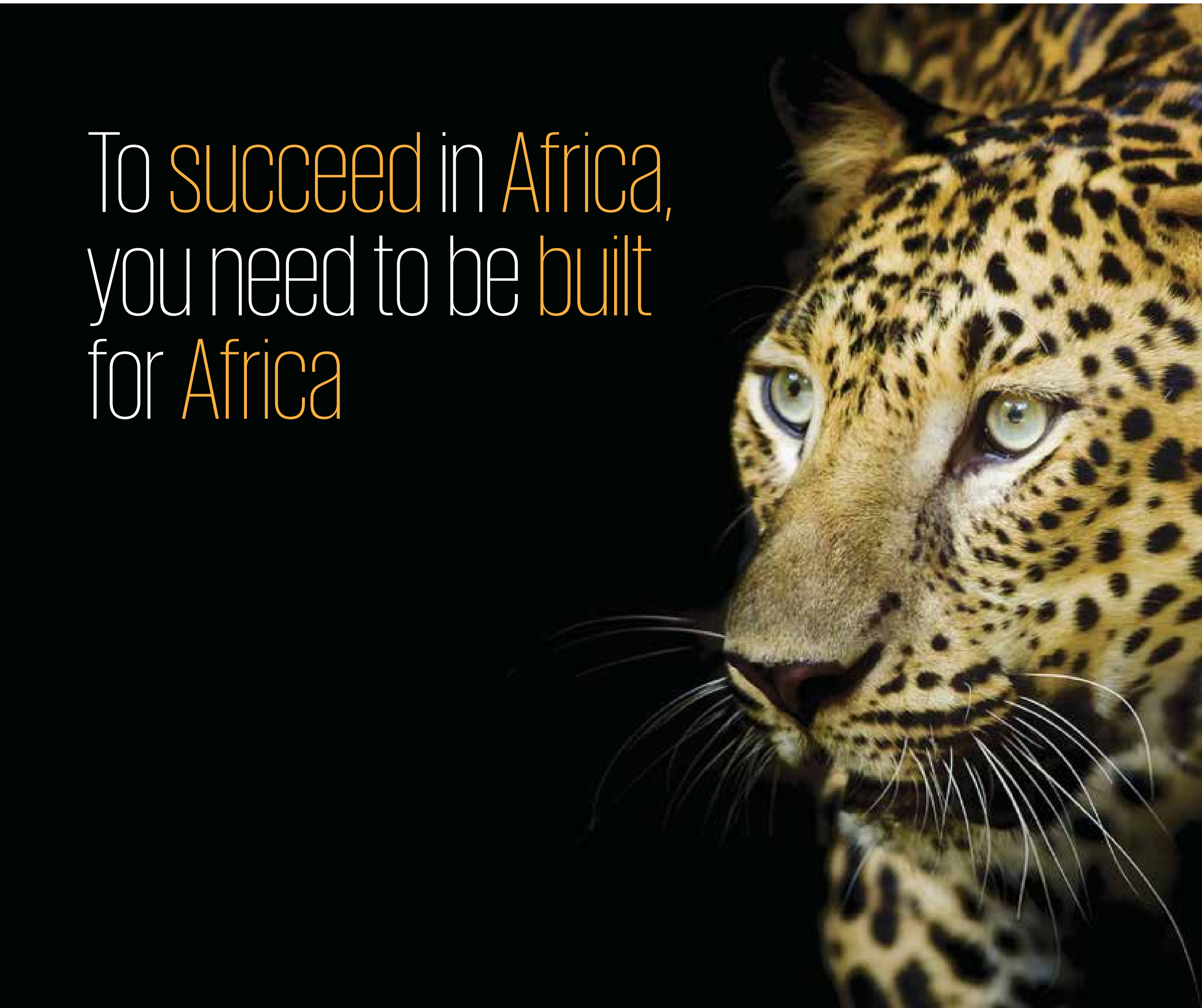

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