PROJECT FUTURE

# Modernised Real-time Electronic Retail Payments:

## A Case for Change for South Africa

October '19

PASA

BANKSERVAFRICA

THE BANKING ASSOCIATION SOUTH AFRICA

**”**

**The implementation of a modernised, low-cost, real-time retail electronic system in South Africa will translate to a total of 0.25% worth of sustainable economic gains for the South African GDP over 5 years...**

# PURPOSE OF DOCUMENT

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This document outlines the social and macroeconomic benefits of implementing a low-cost, easy-to-use, real-time payments platform in South Africa as envisaged by Project Future, a project driven by the Payments Association of South Africa (PASA). This document presents the view of the members of PASA and the Banking Association of South Africa (BASA) as well as BankservAfrica's clients, who collectively hold that this change is of a transformative and strategic nature for South Africa, thus requiring broad buy-in and support. In the paper, we argue that this change to the National Payments System (NPS) presents South Africa with important economic opportunities that will: 1) support the growth of small businesses; 2) contribute to the formalisation of the informal economy; 3) as a viable alternative to cash, bring about a number of far-reaching macro-economic and societal benefits; 4) play a significant role to reduce certain risks in retail payments in South Africa, and; 5) in the process, promote most of the goals articulated in the SARB's Vision 2025 document, which is the most important policy guideline for renewal and modernisation in the National Payments System (NPS).

Project Future was conceived on the back of a joint research initiative, commissioned by both BankservAfrica and PASA, to assess modernisation initiatives across the globe and how the findings could be applied to South Africa. The outcome of this research necessitated the payments industry to establish a clear path and outcome towards payments modernisation. The first phase of Project Future (2018), involved the establishment of a conceptual blueprint for a unified payments system and a low-cost, easy-to-use, electronic real-time retail payments industry in South Africa. Through this work, a target state architecture and immediate needs were identified for the industry to pursue.

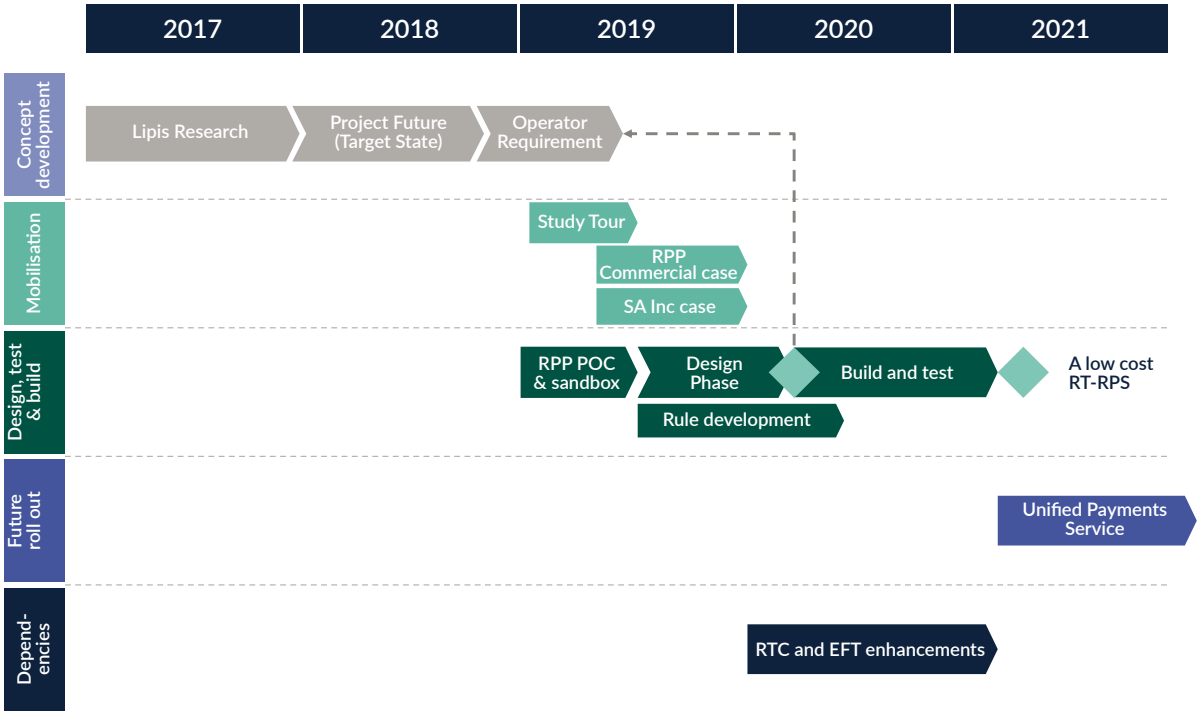
To mobilise support for the Project Future vision, the second phase involved an international study tour to obtain a shared understanding of how countries in Asia and South-East Asia (India, Thailand, China and Singapore), pursued similar large scale payments modernisation initiatives over short time-frames, whilst also gaining rapid adoption of these new payments systems and thereby obtaining large economic and social benefits over relatively short periods of time. To ensure further buy-in, the commercial viability of pursuing such a payments system is essential for banks and through the Rapid Payments Programme (RPP), BankservAfrica developed a commercial proposition for their clients to participate in such a system.

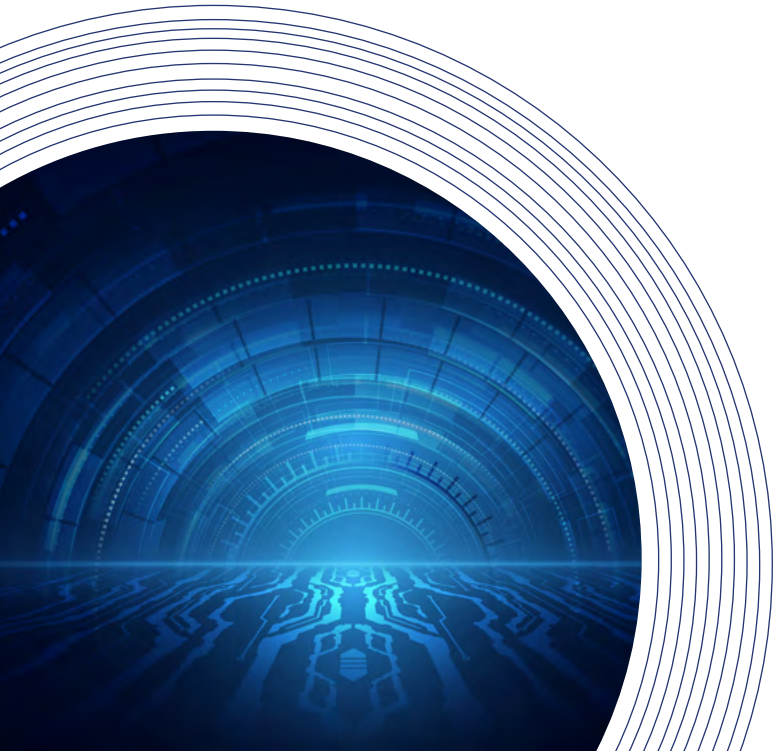
In parallel, this paper presents the economic case for South Africa. It aims to highlight the broader macro-economic and societal benefits of implementing such a system for South Africa. The report also highlights the need to encourage adoption through various mechanisms and request key stakeholders to consider how they could support the adoption of the system to the benefit of all in South Africa.

The payments industry is now moving onto the next phase of establishing such a low-cost, easy to use real-time retail payments system for South Africa through the Rapid Payments Programme (RPP), an initiative pursued in the banking industry and aimed at establishing a functioning system with certain key features required to move South Africa and the industry closer towards the Project Future end-state vision. Once the necessary key functionalities are in-place, the industry will be able to take further steps towards creating a fully functional Unified Payments System. At the same time, continuous enhancements in the current electronic payments systems will be pursued.

# PURPOSE OF DOCUMENT

**Image 1: The high-level flight plan of SA's electronic payments modernisation journey**



**Modernised Real-time Electronic Retail Payments:**
A Case for Change for South Africa

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# EXECUTIVE SUMMARY

South Africa has one of the world's most advanced payments ecosystems achieving interoperability across most forms of payments. In recent years, the South African payments landscape has also been changing rapidly through new non-bank payment service providers (PSPs), bank innovations, and technology growth. However, most of these new innovations are principally adopted by the higher income, tech-savvy market segments, who are already comfortable with using digital (card and electronic-based) payments. Unfortunately, these innovations are not able to holistically serve the needs of the under-developed sectors of South Africa's economy. As a result, whilst 80% of South Africans have a bank account, about 73% of retail payment volumes are still cash-based[1] . This only includes cash through the formal channels and excludes the informal sector. Other studies that have considered the informal sector, estimate the volume of cash usage to be as high as 89%[2].

This dependency on cash is costly for the South African economy both financially and socially. It is estimated that cash costs South Africa approximately R88 billion per year. This number is derived from consolidating the costs to consumers, businesses, banks and the SARB and is made up of both direct financial and indirect social costs. The direct financial costs primarily relate to transactional fees incurred by end-users, the costs of printing cash, the supply of cash, and the maintenance of the expensive cash infrastructure (ATM's, branches and cash centres). The social indirect costs relate to unnoticed factors like time wastage, investment opportunity lost, inflation, crime and others. The issue of crime is a fundamental problem in South Africa and the cost of human lives lost in cash-heists and robberies cannot be valued.

The principal reasons why cash has remained dominant in South Africa are as follows:

Existing electronic payments do not truly rival the capabilities of cash, making it very difficult for electronic payments to effectively challenge cash - namely immediate or at least near real-time transfer of value, non-exclusivity, ease-of-use, cost, convenience, etc.

There is a general lack of digital acceptance options for businesses and the economics of the traditional card acceptance model is simply not viable for small businesses, resulting in cash being the primary method of accepting payments for such businesses.

Behavioural factors further promote the use of cash which makes the migration to safer digital alternatives difficult. As a result, consumers prefer cash or tend to use cash channels more frequently. For example, as of 2017, about half of the total remittances were through retailers which are cash-based owing to the lack of trust and misconceptions related to transactional accounts.

[1] The 73% is extrapolated from the BIS data which only contains payments flow information through the formal economy.
[2] PWC analysis takes consumers transactional behaviour (total volume and value of transactions per annum and the ticket size per transactions) into account.

EXECUTIVE SUMMARY

Developing a payments system that is "as good as cash" for consumers and businesses has the potential to capture portions of the cash payment flows while also providing wider societal benefits through behavioural shifts and improved efficiencies. It is conservatively estimated that R750 billion worth of cash payment flows can be captured over five years which would provide additional sources of revenue, data and insights for the industry. More aggressive estimations indicate that as much as R450 billion of flows can be captured annually[3]. Furthermore, there are approximately 688,000 MSMEs that stand to benefit from a low-cost electronic payment acceptance solution that is an alternative to the existing card-based acceptance solutions, which would not only reduce the demand for cash payments by MSMEs but also contribute positively towards their overall growth and profitability. Furthermore, such a payments system is envisaged to address the gaps in the market where unregulated entities attempt to offer products and services (e.g. Instant-EFT, crypto-assets etc) that significantly increase the risks to consumers and businesses.

It is estimated that capturing this portion of cash payment flows and enabling MSMEs to accept electronic payments could result in a tax revenue gain of R52.5 billion over 5 years. When coupled with the social benefits realised, it is estimated that net gains worth R82 billion over 5 years would be realised. This translates to a total of 0.25% worth of sustainable economic gains for the South African GDP over 5 years.

The South African payments industry has already embarked on the journey to develop an easy-to-use, low-cost, real-time electronic payments platform, as envisaged in Product Future. To truly displace cash, the capabilities and desired architecture needed for this system includes:

01 A low-cost Instant Payments capability providing immediate notification to both the payer and payee and ensuring near real-time availability of funds that is agnostic of the store of value (e.g. transactional accounts and wallets should be supported) with such payment being final and irrevocable.

02 Removing the complexities of initiating payments through simplistic and easy to remember proxies or aliases (e.g. mobile or ID numbers).

03 Providing individuals, nano- and micro-merchants with an alternative acceptance option other than card or cash, through a Request to Pay (RtP) service.

04 A platform or layered architectural approach, which allows for the separation of product features and services (or "overlays") from the core financial clearing and settlement capabilities. This also allows older, existing assets to be sweated further, while new, modern overlays are developed through the use of modern technologies such as micro services and application programming interfaces (API's). Furthermore, translation services (e.g. ISO20022 to ISO8583 etc.) are envisaged to support different participant readiness states during the transitional phase.

05 Ensuring trust in the system is a key ingredient for adoption and must be achieved through the use of advanced fraud, analytics and screening services.

To realise the truly transformative potential that such a payments system holds, support and backing from the appropriate regulatory bodies (SARB and FSCA) as well as the various government entities (National Treasury, SARS etc.) would be required to ensure that the envisaged payments system has wide-ranging coverage and adoption.

[3] RPP Commercial case, BankservAfrica, PWC analysis.

# 1. INTRODUCTION

South Africa has been at the forefront of payments innovation within the South African National Payments System (NPS). For example, some of the features of our real-time gross settlement (RTGS) system are regarded as best-in-class and have been adopted and implemented globally. South Africa has also led the way in the early adoption of EMV chip cards and card security such as 3D Secure (3DS). We were also one of the first countries to have same-day batch clearing capability for electronic fund transfers (EFT), a real-time clearing (RTC) capability, an early debit order collections functionality, and more recently, an authenticated electronic mandate management and early collections capability (DebiCheck).

South Africa therefore rightly prides itself on the developments made to the NPS, and the contribution this has made to the economy, including the financial sector. This is to some extent complemented by the fact that approximately 80% of adults nowadays own a financial institution account[4].

However, despite these innovations in the NPS, it is the "high-income and financially savvy" sector, represented by fast and early adopters of digital payments, that has mostly benefited. In contrast, the under-served low-income informal sector still does not have a viable, low-cost digital payment alternative to meet their day-to-day payment needs. According to Finscope's 2017 South African consumer survey, only about 1 in 5 people with a bank card and an income below R3000 per month used their bank card to make a purchase at a store. This quickly rises to 75% for those that earn more than R8000 per month. With about 80% of South Africans being financially included through their access to a bank account, this suggests that financial inclusion is wide but lacks depth. Figure 1 below shows the percentage of respondents that have paid electronically by using their bank cards to make a purchase at a store in 12 months.

**Figure 1: Consumer cash vs. card usage preference**

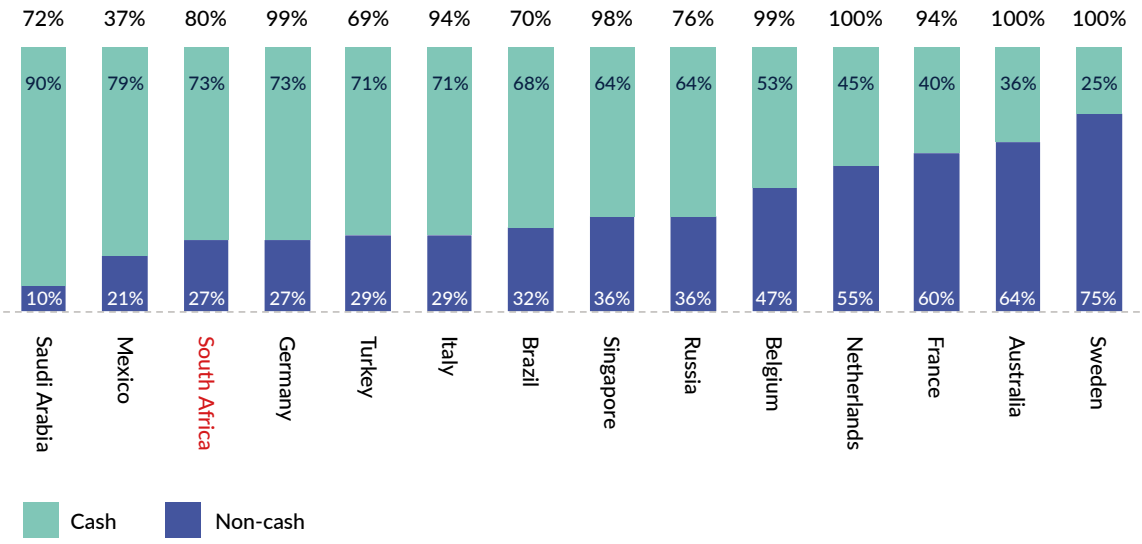
Card usage preference – in the past 12 months the respondent used their bank card at a store (%, annual 2017)


It is therefore unsurprising that cash usage in South Africa remains high. BIS information provides a base for comparison of payment volumes in formal channels amongst various countries. According to this information, it can be conservatively estimated that cash accounts for 73%[5] of combined cash and card retail payments[6]. This is unsustainable for the economy in the long run; and amidst the current need to reignite economic growth, a more viable solution to displace cash must be found. Other studies, which includes estimates of the cash in informal channels, show that cash transactions make up 89% of all payment transaction volume[7]. An international comparison of the share of cash transactions versus card by volume (Figure 2), shows that South Africa not only lags behind developed markets in its use of cash versus card, but also lags other developing markets such as Turkey, Brazil, and Russia.

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

**Figure 2: Volume split of cash versus card usage across markets**

BAR - Volume split of cash vs. card payments | Top of bar - Percentage of account ownership (%, 2017)

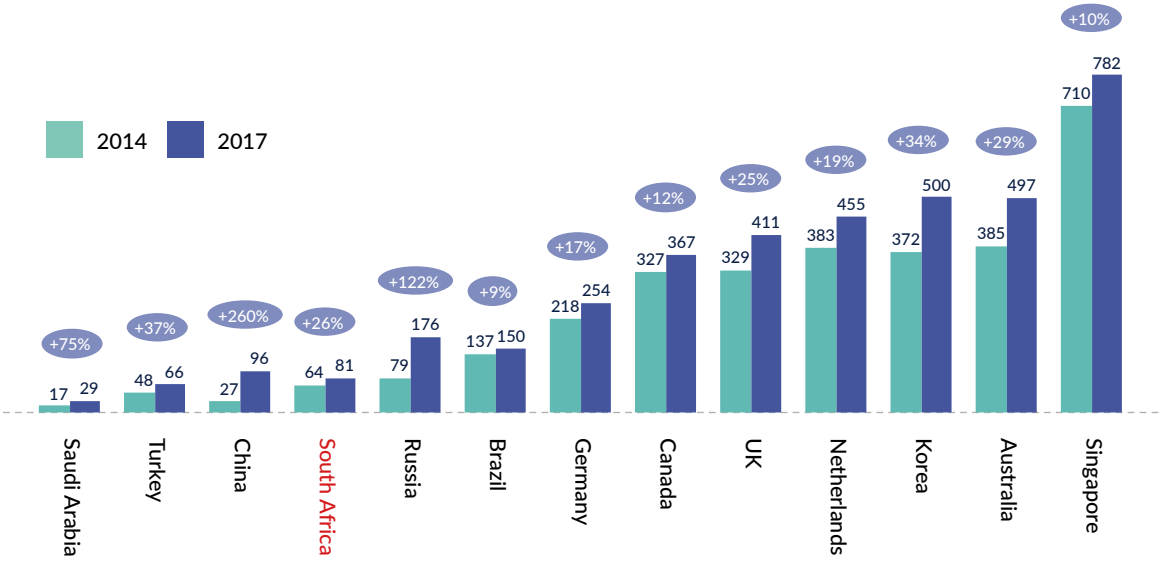



*Source: Payments statistics, BIS, 2019 | World Bank Development Indicators, World Bank, 2019 | Genesis Analytics team analysis, 2019*

When compared to other jurisdictions, the per capita usage of electronic payments in South Africa is also well below the average global standard and behind developing countries like Brazil, Russia and China[8] - all comparable to South Africa from a socio-economic perspective (Figure 3).

**Figure 3: Volume of electronic payments per capita**

Per capita volume of electronic payments (Number of transactions per capita, 2014 & 2017)




*Source: Payments statistics, BIS, 2019*

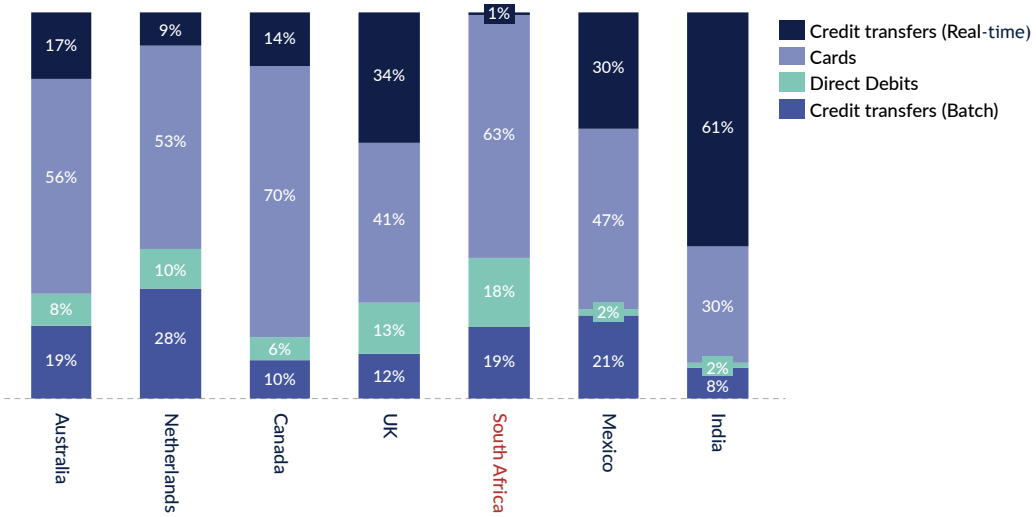
[8] Data on India was incomplete. However, given recent events (demonetization and UPI) we believe that the Indian electronic payments per capita has also surpassed South Africa.

Cash usage remains high despite South Africa (SA) being an early adopter of a real-time retail payments system (RT-RPS) namely RTC. An RT-RPS is a key ingredient amongst a set of additional payment features and attributes (speed, convenience, cost and ubiquity) that has proven to truly challenge cash. However, RTC has not been able to reduce cash usage and the adoption success of RTC pales in comparison to other similar markets. In South Africa, RTC has only achieved 1% of the share of all non-cash payment volumes whereas RT-RPS in similar markets (including highly carded markets) have reached on average 30% of transaction volume of all non-cash payments. In certain instances, where cards are less prevalent, this percentage is much higher (e.g. India with 61%). This is largely due to the fact that the South African system (RTC) was designed to cater for a broad range of real-time payment values (up to R5m per transaction) which attracts a higher risk profile and is consequently priced higher than other similar payments systems. In its current design it therefore does not meet the low-value and day-to-day needs of the public for person-to-person (P2P) or person-to-small business (P2B) payments, but is rather better suited for person-to-large business (P2B), business-to-person (B2P) and business-to-business (B2B) payments, resulting in lower volumes and higher average values[9] .

Figure 4 compares the share of electronic payments across markets with true low-cost real-time electronic payments.
Overall, the data confirms that South Africa is highly dependent on cash[10] despite having an advanced payments system. Furthermore, the use of non-cash payments lags behind most developed and many developing markets. This is largely due to the isolation and impenetrability of the informal sector to digital payments, which is an important focus area of this paper.

**Figure 4: Volume share of electronic payment**

Volume share of transactions by type (%, 2017)




*Source: Modernising Payments Systems: International Comparison, PASA and BankservAfrica, 2019 | Genesis Analytics team analysis, 2019*

Beyond South Africa, similarly challenged economies are using modernised real-time electronic payments systems to displace cash, along with its associated direct and indirect social costs, by matching the behavioural dependency on cash with characteristics that enable such payments systems to be "as quick, convenient, and low-cost as cash". These initiatives are typically prioritised as both a social and economic imperative for the country given the potential for greater financial deepening and digital inclusion. Examples of other markets that have adopted such systems is discussed in Section 3.

*...continue on next page*

[9] The average ticket size of RTC in South Africa is about R12,800 (July 2019)
[10] Excludes the cash circulating in the informal economy or shadow economy

Through the Payments Industry[11], South Africa has already embarked on an industry journey of modernising the electronic payments system and developing an enhanced real-time electronic payments ecosystem which will address the dependency on cash for P2P and micro-business P2P/P2B payments. The Payments Industry believes this kind of low-cost, real-time electronic retail payments system can easily become the elusive "social" payments system for the country that will not only make lives easier from a consumer perspective but will also make a major contribution to South Africa's economy. However, not all stakeholders of the South African payments ecosystem[12] are yet fully informed of the envisaged benefits and therefore are not fully invested in the establishment of such a system. Therefore, this paper explores the opportunities and benefits for South Africa to adopt an easy-to-use, real-time, low-cost electronic payments system and highlights the opportunity cost that would be incurred if South Africa were not to advance its payments modernisation journey through such a payments system, as a strategic priority.

The remainder of the document is outlined as follows: First, in Section 2, we discuss the cost of cash in South Africa. Section 3, discuss some of the reasons behind this dominance of cash. Section 4 then discusses the potential of such a system for South Africa. Section 5 provides an estimate of the economic benefits of implementing such a system. Section 6 describes the broader support required to make such a system a sustainable solution in South Africa. Section 7 articulates the envisaged roll-out plan. Lastly, Section 8 concludes our discussion with a summary of the key take-aways from the report.



[11] Includes the banking sector, Bankserv Africa and the Payments Association of South Africa (PASA)

[12] The government authorities and regulators includes the National Treasury, South African Reserve Bank, FSCA, SARS, and BASA

# 2. CASH IS EXPENSIVE FOR SOUTH AFRICA

***South Africa is a cash-heavy economy and this reliance on cash is financially and socially costly for all users in South Africa and the economy. This cost alone is estimated at approximately R88 billion per year. To provide this cash the cash industry (ie. cash suppliers) typically operate at a loss but are forced to continue to support cash to meet the continuous demand for cash.***

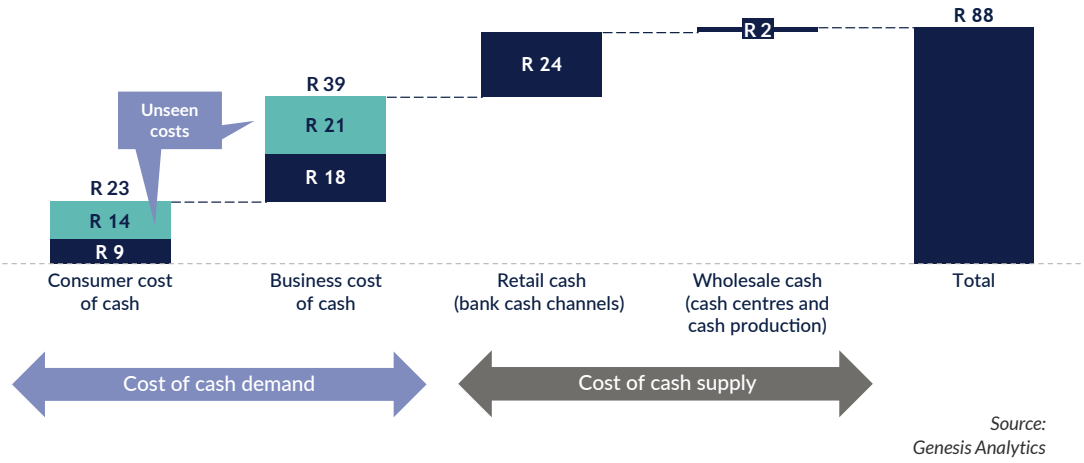
As was shown in Figure 2, consumer cash usage in South Africa remains high. About 65% of the consumer expenditure towards nominal GDP (R1.6 trillion)[13] is cash-based. Consumer demand for cash is mainly driven by the ability of electronic payments to meet simple P2P and P2B payment needs in a frictionless way.

This consumer dependency on cash impacts businesses and banks alike, as businesses are required to clear this cash through banks and cash-in-transit (CIT) companies. In order to meet the demand of public cash, banks and CIT companies (collectively cash suppliers) need to maintain costly cash services. As the SARB is responsible for the adequate and quality supply of cash in the economy, it too must meet the public and cash supplier's demands for cash. Also this happens at a cost to the economy.

It is estimated that cash costs South Africa approximately R88 billion per year, which is arrived at by consolidating the costs to consumers, businesses, banks and the SARB. The remainder of this section explores this cost through the lenses of consumers, businesses and government. Figure 5 presents a summarised view of the cost of cash to South Africa which is explored further below.

**Figure 5: South Africa's cost of cash**

South Africa's fully costed cost of cash (ZAR billions, annual 2017)




*Source: Genesis Analytics*

## COST OF CASH TO CONSUMERS

South Africans continue to pay for goods and services using cash and as a result incur direct costs or transactional fees associated with accessing cash (i.e. ATM cash transactions, cashback at POS, retailer remittance withdrawal and branch cash transactions). In addition, consumers also incur the unseen or indirect or social costs[14] (e.g. time, travel, interest foregone, risk of theft, etc.) which are not always obvious and need to be factored in. It is estimated that cash costs the South African consumers about R23 billion or 0.73% of real GDP[15] of which approximately R9.1 billion is attributed to transactional fees. Owing to South Africa's demographic reality, low-income groups, who are heavier users of cash, also bear a disproportionately higher burden of this cash costs as a percentage of their gross income. According to a 2015 MasterCard study, on average, cash costs the average SA consumer 2.4% of their gross income, and this burden rises to 4.1% for lower-income South Africans. Figure 6 below shows the percentage of the cost of cash split by direct and indirect costs for the average South African by various tiers of income[16].

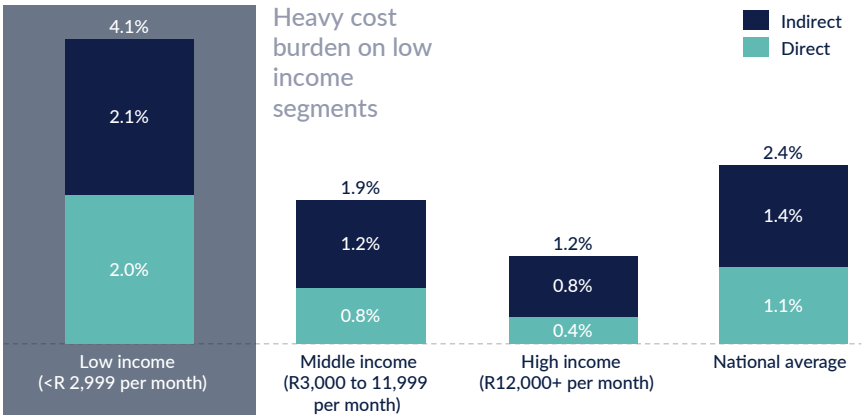
[13] Quarterly bulletin, SARB, 2019
[14] Consumers often do acknowledged the social costs as risk but often they are not seen as part of the true cost of cash.
[15] SA Consumer cost of cash, MasterCard & Genesis Analytics, 2015
[16] The indirect costs are proportionally higher than the direct costs because of what is generally considered as indirect and direct costs, based on international literature studies.

CASH IS EXPENSIVE FOR SOUTH AFRICA

**Figure 6: Consumer cost of cash**

**Total cash cost as percentage of total cash usage (value) per segment**

(Cash cost per cent of total cash usage value, %, annual 2015)




*Source: Cash costs South African consumers R23 billion a year, MasterCard, 2015*

## COST OF CASH TO BUSINESSES

Most businesses accept cash payments due to a myriad of factors, which we discuss in greater detail in Section 3. When assessing the cost of accepting payments for businesses, cash is largely perceived as cheaper than card-based payments (POS and QR codes). However, businesses often do not account for all the costs associated with accepting cash payments (e.g. the risk of theft, leakages, infrastructure costs for safes, tellers etc.) over and above the costs associated with depositing this cash. On average, for smaller businesses, cash deposit fees are about 1.5% including the fixed base costs, which is significantly lower than the average merchant service fees[17] (MSF) for accepting card payments. However, if we include the indirect costs of cash acceptance utilising the same proportion of indirect costs for the cost of cash to consumers, then the true cost of cash for businesses increases to approximately 3.4% for small businesses.

For larger businesses, owing to the greater bargaining power they possess, the average cash deposit fees is much lower at about 0.7% which, after including the unseen costs, can reach approximately 1.6%.

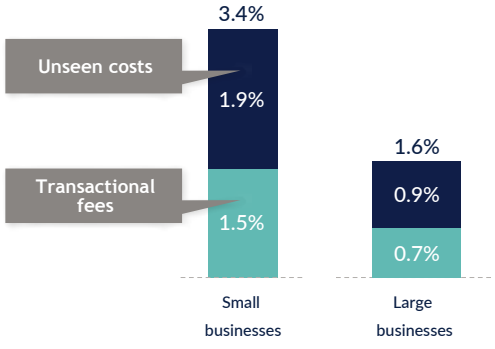
The consumer share of GDP is R2.5 trillion, of which the majority is spent at businesses or municipalities. Of this, 61% is cash-based (excluding remittances - 4%) implying that approximately R1.5 trillion in cash was used for purchases of which 75% or R1.14 trillion in cash passes through the formal economy.

It is therefore estimated that the cost of cash to formally registered businesses is between R18.2 billion and R38.8 billion coinciding with estimates from the cash industry[18].

**Figure 7: The relative cost of cash between small and large businesses**

**Average business total cost of cash acceptance as percentage of turnover and size**

(Cost as a percentage of transaction value, %, annual 2017)




*Source: Genesis Analytics*

[17] Averages between 2% and 4%, depending on turnover and risk of the merchant.

[18] Industry Cash Management Forum, 2019

## COST OF CASH TO SA BANKS, CIT COMPANIES AND THE SARB

In order to service the cash demands of South African consumers, banks often provide cash through various channels that are mostly unprofitable for the banks. Aggregate financial information from the industry suggests that cash services are provided at a net loss of at least 30%. Figure 8 depicts the cost-to-income ratio of cash channels for financial institutions.

01 **Cash-back at POS -**
To reduce the cash burden on its cash channels, banks are encouraging customers to withdraw cash through retailers. Considering the average pay-as-you-transact (PAYT) fee for a POS cash withdrawal against the set interchange suggests a cost-to-income ratio of 74% for the banks[19].

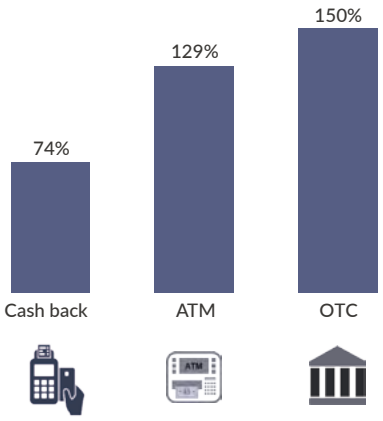
02 **Banking cash channel costs -** Most ATM withdrawal fees are packaged into 'bundled' pricing products, however, based on the pay-as-you-transact fees, and netting the interchange fees suggests that banks are operating the ATM network at below cost with an estimated cost to income ratio of approximately 129%[17]. Branch-based over-the-counter cash withdrawals and deposits are mostly done by small businesses as ATM cash services cannot meet demands of float for low denomination or the value deposit capacity of ATMs. Through a PWC study commissioned by BankservAfrica, it is estimated that the cost to income ratio for branch withdrawals and deposits is approximately 150%[20].

03 Furthermore, cash services are typically provided at a loss to larger businesses in cognisance of the adjacent revenue opportunities through card, electronic banking and lending. It should be noted that most of the above cash channels are serviced by banks and CIT firms with high fixed costs and that the immediate reduction of cash may not directly translate into savings.

It should be noted that most of the above cash channels are serviced by banks and CIT firms with high fixed costs and that the immediate reduction of cash may not directly translate into savings.

**Figure 8: Cost-to-income ratios of financial institutions' retail cash channel services**

Cost-to-income ratio of cash services (%, 2017)




*Source: Rapid Payments report, BankservAfrica | Genesis Analytics*

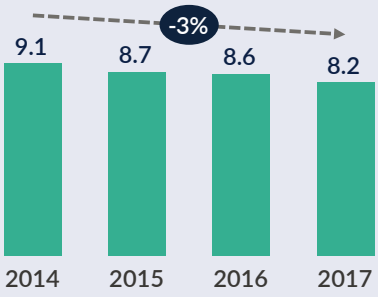
[19] SARB interchange fees, SARB | Pricing fees of banks, various banks | Genesis Analytics
[20] Rapid payments, BankservAfrica (PWC), 2018 | Genesis Analytics

**Box 1 below discusses the trends in cash channels in South Africa.**

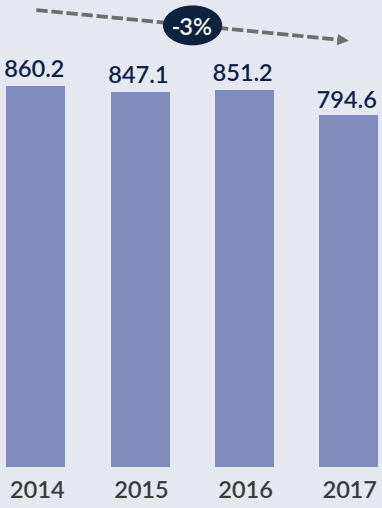
Box 1: Industry consolidation of 'bricks and mortars' due to the rising cost of cash and changing customer behaviour.
South African banks, particularly, the 'Big 5' are witnessing the impact of costly brick and mortars.

Across the industry, since 2014, the number of bank branches and ATMs per 100 000 adults (age 20 and above) is decreasing at an average rate of 3% per annum. This is a necessary step for banks, because the cost of this infrastructure is unsustainable over the long term. The displacement of this cost is a key objective of the proposed low cost real time payments system discussed here.

**Number of bank branches per 100000 adults**
(annual, 2014 to 2017)




**Number of bank ATMs per 100000 adults**
(annual, 2014 to 2017)




*Source: BIS*

Cash is also costly for the SARB to produce. In the 2018/2019 financial year, the SARB incurred costs (cost of new currency) of R2.3 billion to produce new banknotes and coins[21].
Lastly, we cannot discount the cost of cash to cash-in-transit (CIT) companies. According to a Diebold study on ATM costs in South Africa, the cost of CIT services is about 15%[22] of total ATM costs. This does not include the risks of robberies and fatalities arising from CIT heists, further discussed in the next sub-section.

[21] 2018/2019, Annual Report, South Africa Reserve Bank
[22] ATM Life Cycle Costs and Currency, Diebold

## THE BROADER UNSEEN COST OF CASH TO THE SOUTH AFRICAN ECONOMY AND SOCIETY

In addition to the direct and indirect costs of cash for consumers, businesses, and cash suppliers; there is a broader cost to the South African economy.

### Government tax revenue leakage

South Africa has a shadow economy of 25% of GDP which negatively impacts the government in combating tax evasion and illicit money flows. Considering that the shadow economy is cash-based and cash-transactions are untraceable, this creates the opportunity for many businesses to incorrectly report turnover, thus, resulting in tax revenue loss. According to the SARS, 16% of businesses (total - 3.73 million) registered for Company Income Tax were not accounted for in 2018[23].

### The overall cost of crime

According to crime statistics from the South African Police Service, there was a total of 190,000 robbery-related crimes in 2018[24]. The breakdown of cash related crimes in South Africa is as follows:

- Bank channel robbery on consumers: R34 million (840 incidents)
- Attacks on physical ATMs: R40 million (140 incidents)
- Household burglary: R60 million (300 incidents)
- Bank robbery R109 million (109 incidents)
- CIT robbery: R300 million (286 incidents) - this had led to 25 fatalities[25]

The digital capturing of cash flows therefore has the potential to not only assist the Government with increased tax revenue collection but also to disincentivize cash-related crimes as cash volumes decrease in light of a ubiquitous payment alternative for more risky situations becoming available.

[23] 2018 Tax Statistics, South Africa Revenue Service
[24] Annual crime statistics, South African Police Services, 2019
[25] Interviews with SABRIC and G4S

# 3. TO DATE, SOUTH AFRICA HAS BEEN UNABLE TO REDUCE THE DEPENDENCY ON CASH

South Africa's payments landscape is changing and innovating at a rapid pace. However, these innovations typically serve the needs of higher-income markets and not the under-developed sectors of the economy where no viable alternative to cash exists. Also fueling this, is the lack of alternative payment acceptance options to cash as well as certain behavioural aspects which creates a "stickiness" with regards to the use of cash.

## THE DOMINANCE OF CASH HAS NOT BEEN TRULY CHALLENGED BY ANOTHER PAYMENTS SYSTEM

While the uptake of digital financial payments products is severely constrained by a number of factors explained in latter sections, various technological and commercial barriers also hinder the adoption of existing non-cash payments systems. In recent years, the growth of technology and smartphone penetration has accelerated payments innovation and services in South Africa (e.g. SamsungPay, SnapScan, MasterPass, Zapper, and many others). However, these innovations are typically adopted by the higher income, tech-savvy market segments but not by the less developed market segments, where cash usage is high. A comparison of the characteristics of cash versus existing payment services in Figure 10 below demonstrates that the characteristics and features of existing digital payment instruments do not fully match those of cash and, as a result, cannot truly challenge the dominance of cash especially in the underserved sectors of society. This also provides certain guiding principles with regards to the features of the new platform

**Figure 10: Characteristics of existing payment systems in South Africa for payers**

| | PROJECT FUTURE | Cash | Card | RTC | EFT | Wallets | Mobile (NFC / QR) |
|---|---|---|---|---|---|---|---|
| ★ Low perceived cost | ✓ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ |
| ★ Easy to use | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✓ |
| ★ Real-time experience | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ |
| Interoperable | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |
| Easy to obtain | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Trust and certainty | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✓ |
| Anonymous | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Universally Accepted | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

Similarly for receiving payments, the characteristics of existing payments systems and solutions are not able to truly compete with the value proposition of cash, which is especially true for the micro to small medium enterprise (MSME) sector as illustrated in Figure 11 below.

**Figure 11: Characteristics of existing payment systems in South Africa for recipients or acceptors**

| | | Project Future | Cash | POS | QR | EFT | RTC | Wallets |
|---|---|---|---|---|---|---|---|---|
| ★ | Low perceived cost | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ |
| ★ | Easy to accept | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| ★ | Real-time funds | ✓ | ✓ | ✗ | ✗ | ✗ | ✓ | ✗ |
| | Interoperable | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| | Easy to obtain | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ |
| | Trust and certainty | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| | Anonymous | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |

## THERE ARE NOT ENOUGH LOW-COST DIGITAL PAYMENT ACCEPTANCE OPTIONS FOR BUSINESSES

Beyond cash and card-based solutions, there is a general lack of options for businesses to accept payments. This lack of options impacts small businesses, particularly those in the rural, underdeveloped sectors of the economy, where small entrepreneurs operate with low monthly turnover and extremely small margins.

While the South African government has identified the importance of digitalising the MSME sector to stimulate employment and economic growth, the economics of traditional non-cash payments acceptance, like Point of Sale (POS) card devices or existing (Quick Response) QR code solutions, are simply not viable for MSMEs. The direct costs associated with the Merchant Service Fee (MSF) and the actual device fees (e.g. rental) erode profit margins significantly, making it less viable for MSMEs, and thereby forcing them to accept cash. However, as businesses' turnover increases, their bargaining power increases giving them the ability to negotiate for better MSF rates. Unfortunately, MSMEs do not have the necessary turnover to negotiate favourable rates and are generally price takers at the start. The average starting MSF for entry-level Mobile POS (MPOS) acceptance solutions is roughly 2.8%[26] .

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

For businesses of all sizes, third-party service providers address the lack of available payment acceptance options and offer value-added services at a premium for businesses, further eroding profit margins and creating an opportunity cost for these businesses. Examples include:

- Bill payment services (e.g. Easypay) are offered at retailers for the acceptance of various monthly bill payments (e.g. Municipality bills, DSTV invoices) and are priced as a premium to businesses as well as consumers for the added convenience this provides.
- Instant-EFT solutions (e.g. Ozow, PayFast) are offered as an alternative to card-based payments and are priced higher than online card payments. They make use of unsupported risky practices such as "screen scraping" and in certain cases even revert to "sorting at source" without the merchant or consumer fully aware of the risks.

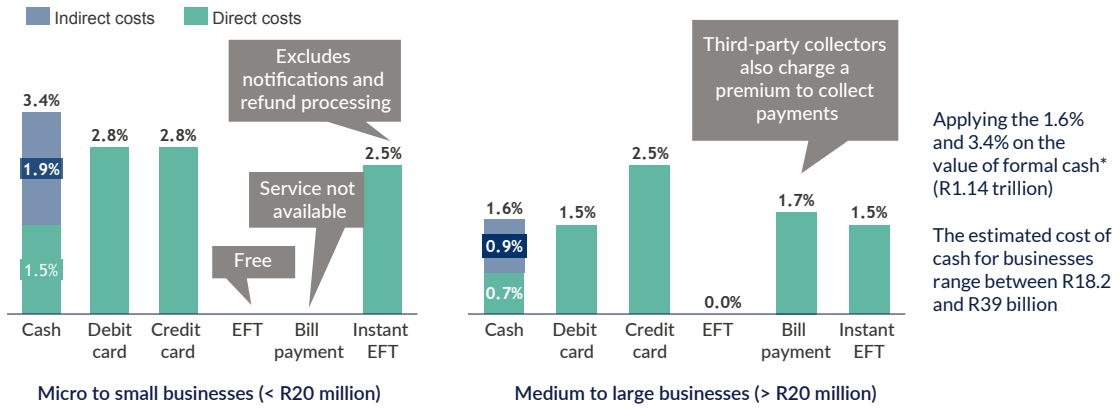
Figure 12 below shows the relative average cost of acceptance for businesses (incl. municipalities) in South Africa (incl. social costs). Across all payment types, smaller businesses bear a higher relative cost of payment acceptance when compared to larger, more established businesses.

[26] Yoco transactional fees, Yoco, 2019

**Figure 12: Business perceived cost of acceptance**

**Business total cost of acceptance as percentage of turnover and size**

(Cost as percent of transaction, %, annual 2017)




*Source: Genesis Analytics*

In addition to fees, a number of MSMEs do not have the requisite enabling infrastructure (e.g. no internet access owing to a lack of broadband internet and high data costs) and a sizeable portion of these businesses are owned by foreign nationals without the requisite immigration rights to operate businesses in South Africa. These fundamental issues are key obstacles to digitalising the MSME sector and impact on their ability to positively contribute towards economic growth.

## BEHAVIOURAL AND CULTURAL PATTERNS ARE DEEPLY EMBEDDED

Lastly, we cannot ignore the behavioural factors which underpin the reliance of cash amongst South African consumers. In a study done by Mastercard[27] on the behavioural drivers of cash usage amongst consumers, a number of factors are identified which underpin the inherent usage of cash which will require a broader industry-driven education programme to address.

For example, there is a perceptual tendency amongst consumers to see cash as a secure store of value due to their mistrust of the financial system, and as a result, a significant proportion of consumers tend to withdraw all funds in a single transaction. Furthermore, the lack of trust leads to the belief that funds held in transactional accounts are not safe, which is compounded by aggressive and unethical collections practices. As a consequence, wallet based, cash-in/cash-out remittance solutions offered by retailers are often perceived to be safer than remittances made through transactional accounts.

Therefore, the drive towards electronic payments adoption requires mass consumer education, aimed at changing the public's perception of electronic payments and the safety of their money in bank accounts and should run hand in hand with other payments innovations aimed at protecting the consumer (e.g. DebiCheck) with the support of regulators (e.g. FSCA). This document goes into more detail about the support required from regulators and other entities in Section 6. Box 2 provides further behavioural and cultural examples leading to this cash dependency.

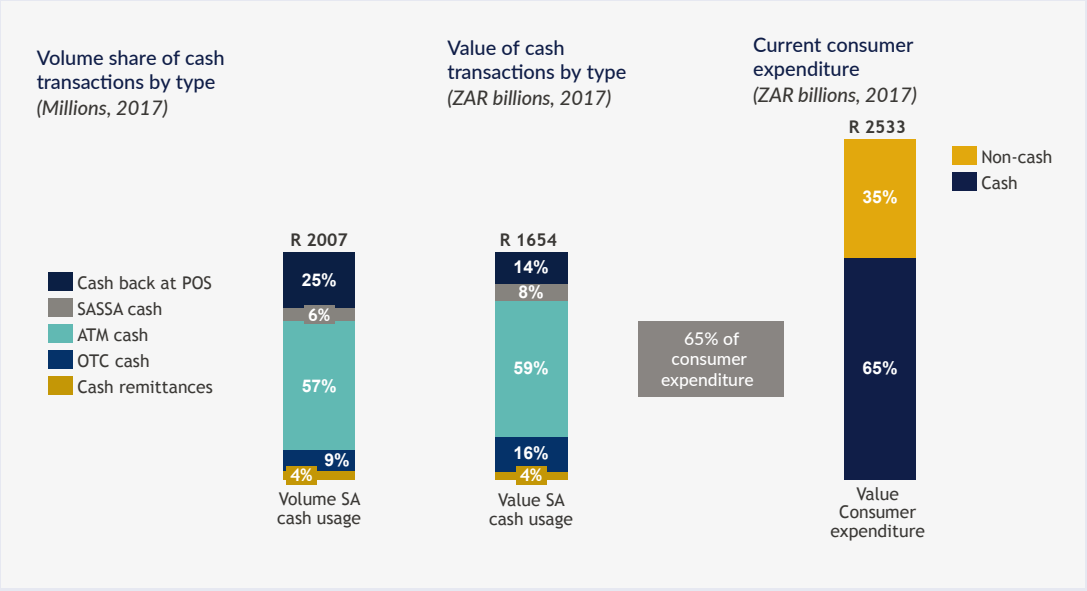
[27] In conjunction with Genesis Analytics

### Box 2: Cash dependency in South Africa and examples driving this

The figure below showcases consumers' use of cash across channels[28] and reflects that a "quick cash-out or in" at ATM's is still the most viable transaction option for most South Africans.

However, driving this cash dependency is a lack of trust and understanding for financial products. This box also highlights some examples that further promotes the use of cash.

**Box 2: Figure 13: Volume and value of retail cash usage in South Africa**




*Source: Payment statistics, BIS, 2018 | Genesis Analytics team analysis, 2018*

### Example 1: Consumer preference for cash-based remittances

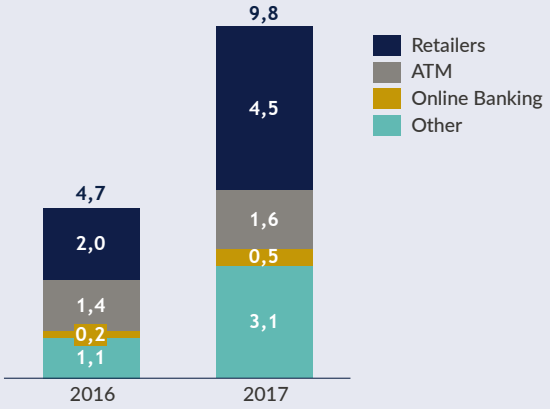
Culturally and behaviourally, South Africans strongly value their responsibility towards parental and family support and often send money home to their families. However, most remittances are done via cash-based solutions (cash-in - remit - cash-out) with retailers being the preferred channel owing to the perception that the wallet based stores of value are inherently safer than traditional transactional accounts. Furthermore, retailers generally have better access to the informal sectors, making them a preferred channel over traditional bank channels.

[28] Includes only the volume and value of cash payments via the formal payment networks.

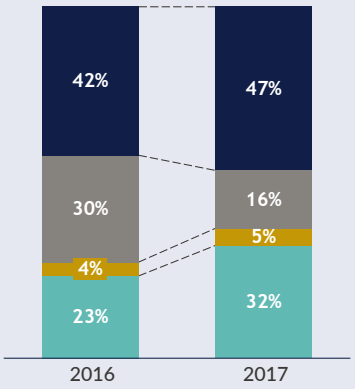
In contrast, online banking is the least preferred channel owing to the current complexity in the user experience when making payments, the delays in the availability of funds for the beneficiary, and the lack of trust in transactional accounts. This is illustrated in Figure 14 below which also highlights the growing use of the various retailer money transfer schemes.

**Figure 14: Remittance channels in South Africa**

**Total number of people who have sent money by channels**
(Number of people using channel, Millions, 2016 & 2017, Finscope survey)




**Change in channelcomposition of sending remittances**
(Number of people using channel, %, 2016 & 2017)




*Source: Finscope SA, Finmark Trust*

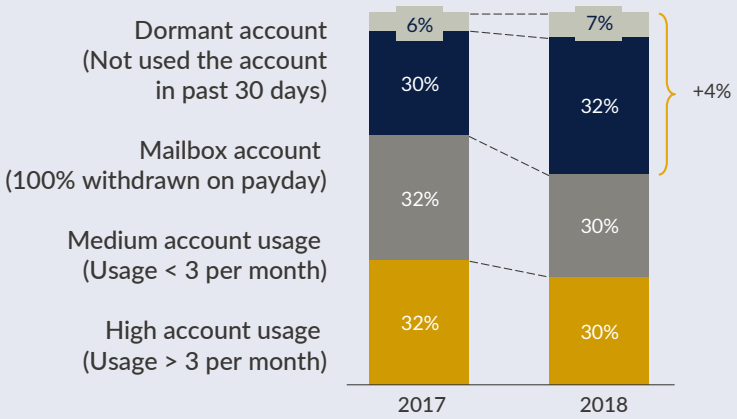
### Example 2: Belief that funds must be immediately used

Another behavioural example is the immediate withdrawal of SASSA grant benefits by recipients. According to Finscope, nearly 50% of grant recipients withdraw all their grant benefits immediately in a single transaction and another 30% in two or three transactions, despite having access to universally accepted and interoperable bank payment platforms. This is largely attributed to the false perception that any grants remaining in an account would not carry over to the next month. In addition, SASSA beneficiaries also prefer cash because of the perceived safety of cash, lack of financial literacy (e.g. perceptions of money being eroded), the use of cash for budgeting and financial planning purposes, and the general lack of digital payment solutions that grant recipients are able to trust more than cash. This trend also extends to the broader South African context. Finscope data shows that the percentage of respondents that reported to either not use their accounts or only as a tool to receive salaries but then withdraw everything rose by 4 percentage points in 2018,
year on year.

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

### Box 2: Example 2: Belief that funds must be immediately used

**Change in account usage**
(Account usage, %, 2017 & 2018, Finscope survey)




*Source: Finscope SA, Finmark Trust*

### Example 3: Encouraging non-cash behaviour

Unfortunately, most South Africans are also forced to use cash from time to time due to misaligned business practices. For instance, some post offices only accept cash for vehicle license renewal payment[29]. There are cases where consumers are asked to pay their monthly municipal bill payments in cash because of claimed POS failure, lack of training or corrupt practices of tellers, or to avoid the merchant service fees (MSF). Irrespective of the reasons, this highlights a general misunderstanding of payments across the country which is more evident in rural communities.

All the above examples on the drivers of the cash dependency could be addressed by an electronic payments platform like the one we advocate for here, which can meet the characteristics of cash, but which is also supported with broader consumer education and incentives driven by industry and supported by government.

Like South Africa, Germany is also a highly cash-dependent market, with most adults owning a bank card but continuing to rely on cash. A recent (2017) study done by Deutsche Bundesbank on payment behaviour showed that the payment features valued most by customers include:

- Protection against financial loss
- Ease of use
- Familiarity
- Privacy
- Quick payment
- Wide acceptance
- Financialincentives(discount)

More interestingly, most Germans saw all of the above features in cash and also more strongly in cash than in any other form of existing non-cash payment[30]. We believe that South Africa's dependency on cash is fuelled by similar perceptions and characteristics and to address these behavioural factors, there is a need for a payments system that complies to all of the characteristics stated above, but additionally for a wider industry drive, supported by government and regulators to ensure change and adoption.

[29] This service is only available in selected provinces.
[30] Payment behaviour in Germany in 2017, Duetsche Bundesbank, 2017

# 4. THE GROWTH POTENTIAL OF A PAYMENTS SYSTEM THAT IS A VIABLE ALTERNATIVE TO CASH IS SIGNIFICANT

*Developing a payments system that is "as good as cash" for consumers and businesses has the potential to capture portions of the cash payment flows that can be monetised, while also providing wider societal benefits through behavioural shifts and improved efficiencies.*

## PROJECT FUTURE - A VISION FOR A LOW-COST, EASY TO USE, REAL-TIME PAYMENTS SYSTEM

Project Future supports the objectives set out in the SARB's Vision 2025, and aims to address issues such as (a) the complexity of electronic payments compared to the simplicity of a cash payment, (b) the lack of speed of electronic payments when compared to cash payments, (c) the perceived insecurity and lack of trust in electronic payments over the reliability and trust in cash, and (d) the perceived cost of electronic payments compared to the perceived cost of a cash payments. This project would require a significant investment from the banking sector in order to realise the benefits of reducing the demand for cash in the economy. This investment would ultimately lead to commercial benefits as well through the enablement of key functionalities as articulated through the RPP commercial proposition.

Addressing these needs could theoretically result in a scenario where cash usage will decline over time, removing the associated costs to banks, businesses and consumers as well as the associated risks. This level of adoption can be supported through a number of mechanisms including public sector incentives, sponsored non-bank value-adds and payments offerings, and regulatory support, which are further discussed in Section 6. In the context of the transformational changes foreseen in the Fourth Industrial Revolution (4IR), such a digital transformation in payments is also to some extent self-sustaining and self-amplifying by virtue of the fact that many new products and business models would benefit from better data, leading to greater insights in the historically under-served sectors of the economy and how they transact and contribute to our economy. The recent PASA payments study tour of China, India, Singapore and Thailand has allowed industry participants to better understand how such new systems have benefited the economy as a whole. Later in this section, we present some case studies of other markets that have benefitted from such systems.

## KEY FUNCTIONALITIES ARE REQUIRED TO ENABLE SUCH A SYSTEM

The following key functionalities and architecture are essential to enable a payments system that is a viable alternative to cash while also ensuring flexibility to cater for future consumer and business needs:

- A low-cost Instant Payments capability providing immediate notification to both the payer and payee and ensuring real-time availability of funds that is agnostic of the store of value (e.g. transactional accounts and wallets are supported) while being final and irrevocable.
- An addressing or proxy[31] capability to enable a more seamless payment experience without the need to register a beneficiary with a bank name, bank account number or branch code while at the same time providing the payer with confirmation of beneficiary's details.
- A Request to Pay (RtP) capability that allows the beneficiary of the payment to send a request with the payment information (invoice, bill etc) to the payer for payment of an invoice or bill to further promote a seamless payment experience and to enable an additional payment acceptance option for merchants other than card or cash-based payments.
- A platform or layered architectural approach, which will firstly allow the separation of product features and services (or "overlays") from core clearing and settlement capability and secondly allow payments message initiation and other flows through application programming interfaces (API's). This architectural approach will also allow older existing assets, like RTC, to be leveraged together with new, modern overlays or services.
- In order to ensure trust in such a system, it will include advanced analytics and fraud monitoring and screening capabilities to help support consumer adoption and drive the desired behavioural shifts.

These functionalities can be combined into various products which, when combined with a strong change management programme, have the power to realise the behavioural shifts envisaged.

In delivering each of these new functionalities, care needs to be taken to ensure that no unnecessary complexity is introduced at significant costs to the industry. The target state architecture referred to above should be developed to ensure that the envisaged system is flexible and modular enough to roll out future services in a seamless manner while also allowing existing capabilities to be "sweated". This should also allow individual banks to drive their internal modernisation at their own pace, with translation capabilities that enable the system to be flexible enough to facilitate both newer standards and technologies (e.g. ISO20022 based APIs) together with older standards and technologies (e.g. ISO 8583 message standards). This is envisaged to be an interim state with the end state having all participants aligned in their standards and implementations.

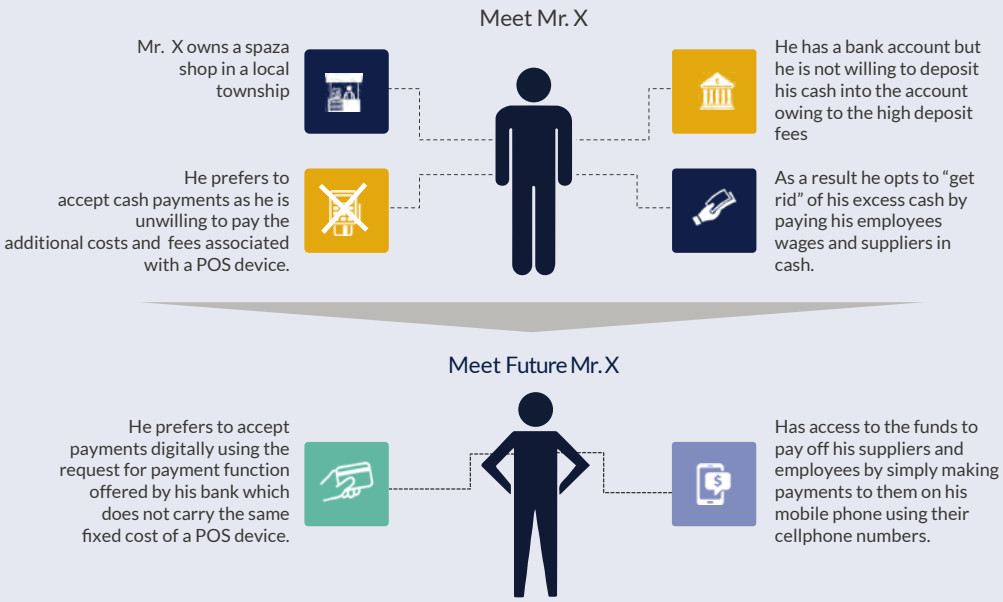
[31] ID numbers and mobile phone numbers are some examples of proxies.

## IMPORTANT BEHAVIOURAL SHIFTS ARE ENVISAGED THROUGH THE ADOPTION OF SUCH A PAYMENTS SYSTEM

The user stories articulated in Box 3 and 4 below outlines the behavioural changes that can be anticipated through a low-cost, easy to use real-time payments capability that is able to challenge the features of cash.

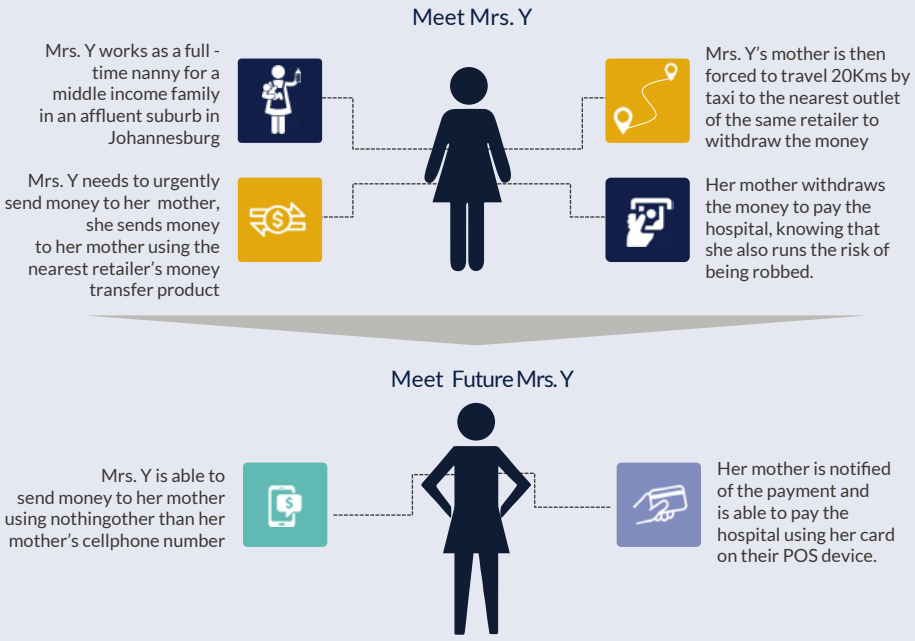
### Box 3: Behavioural shifts arising from low-cost acceptance of digital payments

Image 2: Example 1 of how Project Future can benefit the public




### Box 4: Behavioural shifts arising from low-cost, instant payments

Image 3: Example 2 of how Project Future can benefit the public




Such behavioural shifts have the power to reduce the demand for cash in the under-served sectors of the economy, thereby reducing the inefficiencies and related costs incurred by society. Removing such barriers to efficiency has the opportunity to encourage more productive economic activity.

## A SIZEABLE NUMBER OF MSMES STAND TO BENEFIT FROM SUCH A SYSTEM

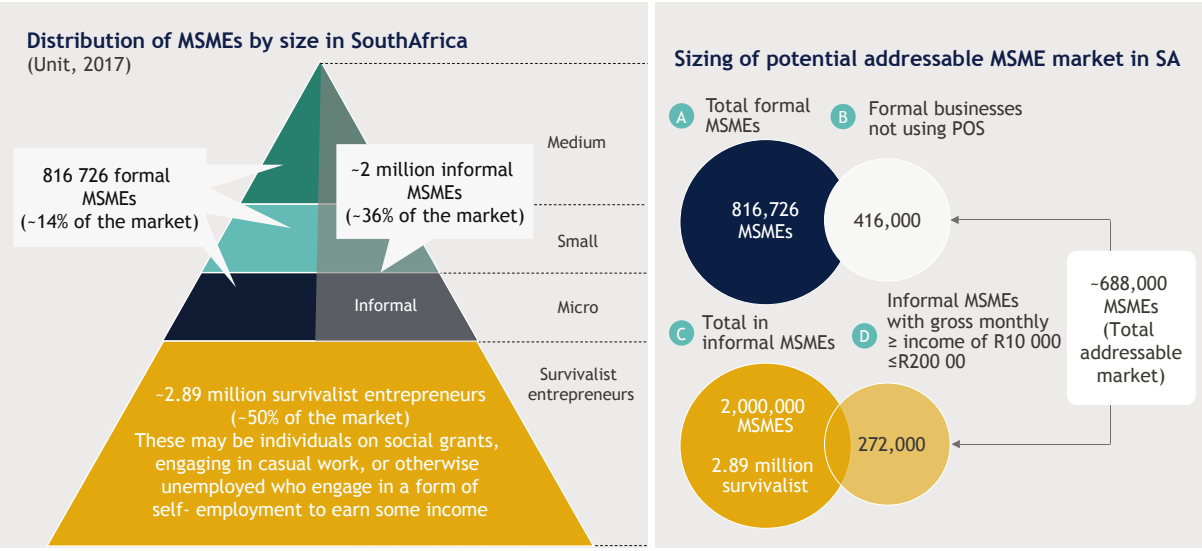
Recent studies conducted by the International Finance Corporation (IFC) on micro and small businesses in South Africa demonstrate that there are about 5.7 million businesses in South Africa, yet there are only about 500,000 acceptance devices (incl. QR), of which the majority are concentrated amongst large retailers[32]. This suggests that at least 5 million businesses only accept cash payments, driving the use of cash through the ecosystem. About two-thirds of these businesses are formally registered with SARS, which requires businesses to have a bank account, of which the majority engage in activities involving the trade of goods and/or services.

Discounting the number of POS devices in the market and the number of formal micro-businesses without the turnover capacity to accept digital payments, and therefore do not truly need acceptance (~50%), implies that about half of the formal MSMEs are potentially eligible for a digital payment acceptance mechanism from acquiring banks[33].

However, we also cannot ignore the informal MSME market. According to the SARS company tax register, at least 6% of businesses have sizable turnovers of between R10 000 and R20 000 per month[34].

Therefore, the immediate number of businesses that could adopt low-cost digital acceptance is estimated at 668,000. Figure 15 illustrates this immediate potential which can be unlocked by creating additional low-cost acceptance solutions for MSMEs in South Africa, as is envisaged with Project Future

**Figure 15: South Africa's MSME size and the potential to accept digital payments**




*Source: 1. The Unseen Sector, A report on the MSME opportunity in South Africa, IFC, 2019 | Genesis Analytics*

[32] The Unseen Sector, A report on the MSME opportunity in South Africa, IFC, 2019 | Genesis Analytics
[33] According to the IFC most formal MSMEs are retail trade based
[34] Number of businesses by turnover, SARS, 2018

## THERE ARE INCREASED OPPORTUNITIES FOR PARTICIPATION BY NON-BANKS

The platform model, as envisaged through the Project Future target state, creates the opportunity for broader participation by non-banks as potential suppliers or consumers of services offered through the platform. Non-banks, specifically fintech firms and retailers, have the ability to access the more underserved markets of society
Across South Africa there are already a number of examples whereby fintechs have been able to access hard to reach markets or create new opportunities through partnerships. The examples include:

- Yoco is a fintech acceptance company which focuses on providing merchants with the ability to accept card payments through low-cost mobile POS devices. To date, the company has over 50 000 registered merchants and recently was able to raise over R240 million in funding.
- Nomanini is a fintech platform aimed at penetrating the informal market by providing merchants with a digital wallet allowing them to sell a wide range of prepaid services to customers. Recently, Nomanini was able to raise about R60 million (USD 4 million) through Standard Bank.
- Merchant Capital is a fintech company that focuses on building low-cost merchant acceptance. The company has further been able to leverage the transactional information through acceptance to provide credit to its customers.

Unless these fintech companies are able to create value-add for banks or investors, they generally find it hard to attract funding/capital. As a result, occasionally fintech companies may choose to operate outside the regulatory confines of the payment system which puts the NPS at risk. Examples include:

- Third parties offering products and services that utilise techniques such as screen-scraping (e.g. Instant-EFT) as a means to effect payments and offer certainty to eCommerce merchants of the payment being made. This is driven by a lack of alternatives to card-based payment acceptance solutions for eCommerce merchants and by consumers that are not fully aware of the risks associated. Screen scraping practices introduce large compromise risks and places the entire banking industry's transactional account base at risk which is valued at approximately R351 billion for current and savings accounts[35] while also placing the banks under significant reputational risk which can be quantified through the combined brand value of the large banks which is estimated to be approximately R93 billion[36].
- Stable crypto assets (Stable coins) are gaining popularity across the world as they are pegged to fiat currency and as a result do not suffer from the same volatility as traditional crypto assets. They aim to offer remittance solutions and specifically target cross border remittances as a key use-case (e.g. Facebook Libra, Tether etc.).

[35] April BA900 regulatory returns, SARB, 2019
[36] Brand Finance South Africa 50, Brand Finance, 2018

Through Project Future, it is envisaged that safer, industry-supported products and solutions will be available to consumers and businesses. In addition, the platform architecture would assist non-banks with technical access to various industry supported products and services. This will need to be supported by a robust and effective regulatory framework that covers a broad range of aspects including: (a) The standards to be adhered to by non-banks; (b) The liability and accountability frameworks for non-banks; (c) The codes of conduct by non-banks; and (d) The necessary entry and participation criteria for non-banks to participate in the system.
For example, in order to ensure regulatory compliance of its payments system, India created a regulatory form for non-banks to inclusively participate in the payments system through 'payment banks'. This allowed non-banks to create platforms to participate in the payments ecosystem and offered smaller participants the opportunity to connect to the platform without putting the NPS at risk (e.g. PayTM)[37].

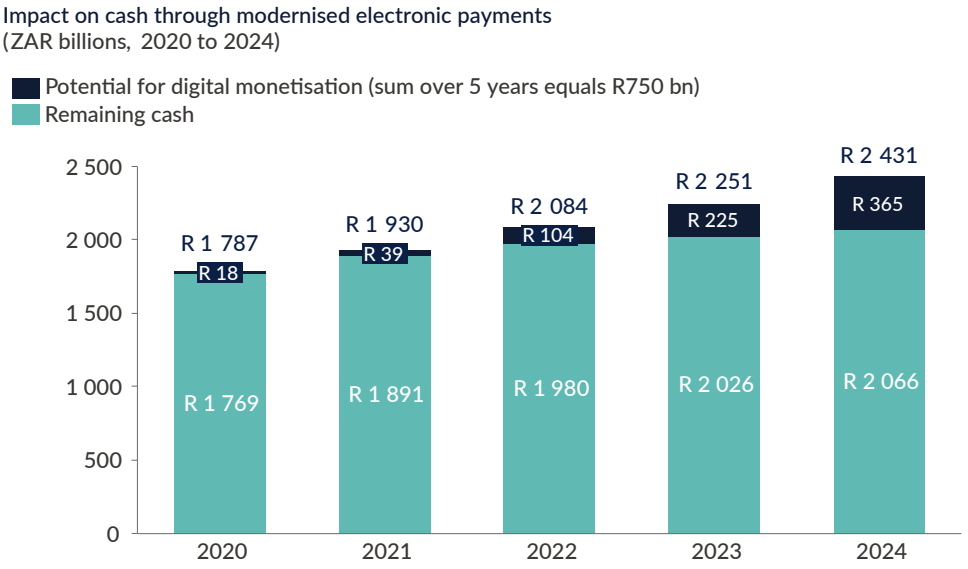
## SIGNIFICANT CASH PAYMENT FLOWS CAN BE CAPTURED WITH MARGINAL IMPACT ON EXISTING PAYMENTS STREAMS

As of 2017, the use of cash in South Africa was valued at around R1.65 trillion or 65% of the total consumer expenditure contribution to the national GDP[38]. If South Africa can displace even 7% of this cash (a quarter of the global average of the share of real-time EFT) over a five year period, it could monetise about R750 billion worth of cash flows[39]. This assumes a slow ramp-up over a period of 5 years, with only 1% of cash digitally captured in the first year. Another study which assumes that 10% of all cash volumes in the NPS can immediately be targeted for digitisation, highlights that flows of about R450 billion per annum from year one onwards, can be monetised[40]. Whether a conservative or more aggressive set of assumptions is used, the prize of digitisation and the replacement of cash for South Africa is still significant.

Capturing this will result in many wider benefits for the economy through increased tax revenue collection, improved traceability of transactions and reduction in money laundering, improved employment potential and cost savings for the banking industry. The ancillary benefits of capturing this value are discussed in the next section. Figure 16 depicts the potential opportunity for capturing a portion of these cash flows in South Africa.

[37] PayTM website, 2019.
[38] Quarterly bulletin, SARB, 2019
[39] We assumed an 8% cash growth and an incremental impact. Year 1 - 1%, Year 2 - 2%, Year 3 - 5%, Year 4 - 10% and Year 5 - 15%
[40] RPP commercial case, PwC, BankservAfrica

**Figure 16: the forecasted opportunity of capturing cash payment flows in SA through an easy-to-use, low-cost real-time electronic payments platform**




*Source: Genesis Analytics*

Furthermore, international studies also confirm that the impact of an easy-to-use, real-time and low-cost electronics payments platform is mostly on reducing the demand for cash. Boxes 5 to 7 below provides a deep dive on the real-time payments platforms in Nigeria, the UK and Thailand, and the impact this has had on their respective economies, particularly cash.

Nigeria recently developed its own version of a low-cost, instant payments capability (Nigeria Instant Payments - NIP) which has had a material impact on P2P payments with little to no impact on card transactions. Box 5 below discusses the evolution of Nigeria's Instant Payments.

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

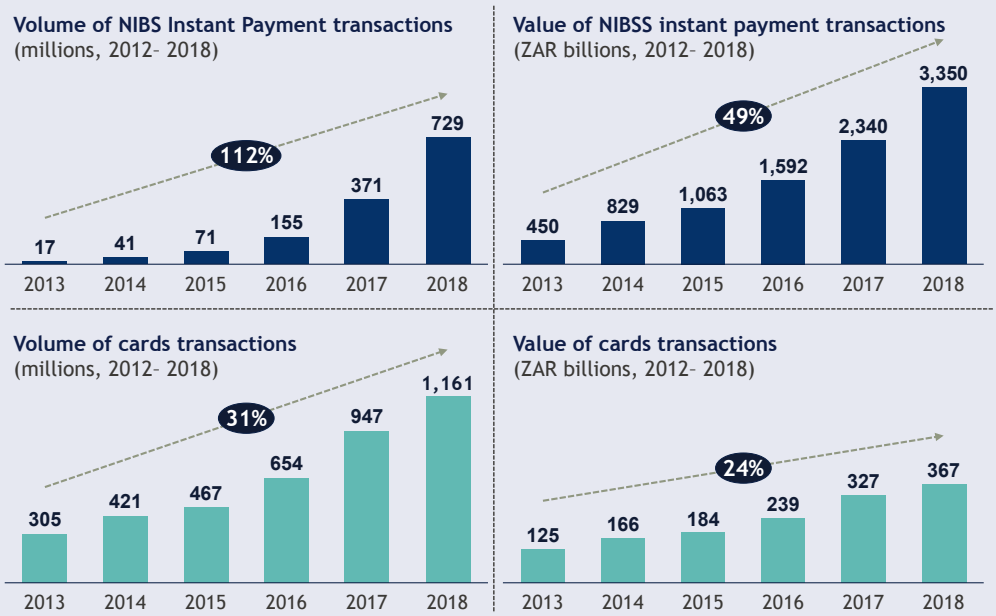
Box 5: Nigeria Instant Payments

The Nigerian Instant Payment (NIP) is an electronic and inter-bank payment platform deployed by the Nigeria Inter-Bank Settlement System (NIBSS) to improve the account-to-account fund transfer services for the Nigerian Banking Industry. The product was launched in 2011, and at present, all commercial banks, MFIs and FinTechs operating in Nigeria are participants on the platform.

**Box 5: Nigeria Instant Payments**

The Nigerian Instant Payments (NIP) is an electronic and inter-bank payment platform deployed by the Nigeria Inter-Bank Settlement System (NIBSS) to improve the account-to-account fund transfer services for the Nigerian Banking Industry. The product was launched in 2011, and at present, all commercial banks, MFIs and FinTechs operating in Nigeria are participants on the platform.

**Figure 18: Volume and value of NIBSS Instant Payments & card transactions**




*The original value was converted to SA Rand (ZAR) using 1 ZAR = 24 NGN as the exchange rate*
*Source: NIBSS*

NIP can be deployed via internet banking, mobile banking (mainly USSD), ATMs, POS and physical branch and agent networks of all financial institutions connected to it. Riding on this, the growth rate of the platform has been tremendous. This has led to a reduction in the overall use of cash in the economy. As a result, the cost of cash handling to the financial system has also dropped since 2012 by 1.6% annually[41].

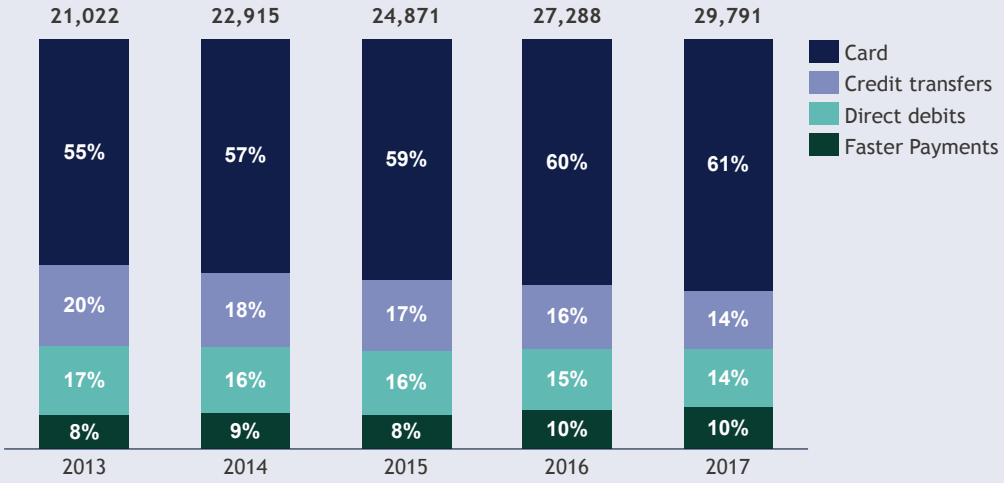
[41] RTC Advisory Services (Nigeria), Electronic Payments and Economic Growth in Nigeria

"Faster Payments" in the UK has grown annually by 15% per annum without any material impact on other non-cash payment instruments. Card volumes have grown consistently while EFT credit and debit transaction volumes have declined slightly. Industry data demonstrates that faster payments, together with the ease of use enabled by the proxy capability (PayM), has significantly contributed to a decline in cash volumes. Box 6 below presents the share of electronic payments in the UK and a forecast of payments done by UK Finance.

Box 6: UK payments statistics

**Figure 19: UK share of electronic payments (volume)**

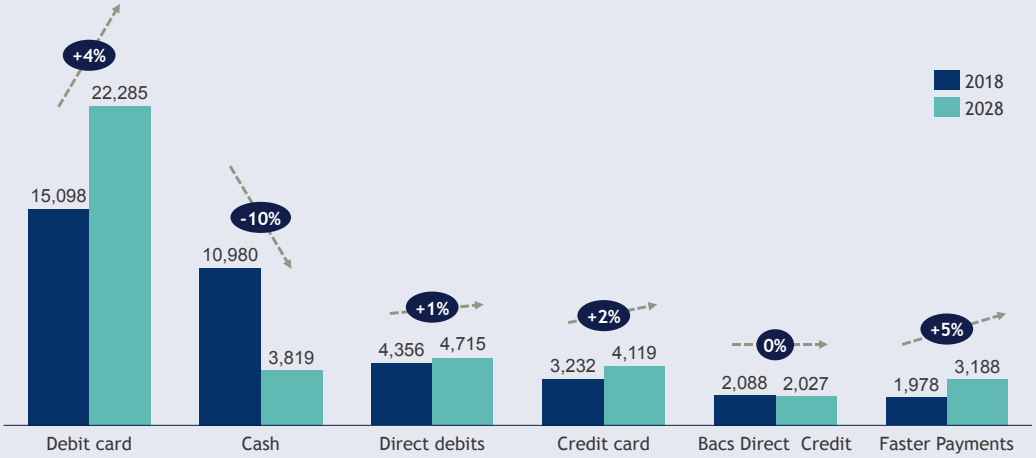
**UK volume share of transactions by type**
(%, 2013 –2017) (Volume of transactions (top of graph), millions , 2013 -2017)




*Source: BIS | Faster Payments*

**Figure 20: Forecast of UK payments by volume**

**Total volume of payments in the UK 2018 vs. 2028**
(millions, annual, 2018 & 2028)




*Source: UK Payment Markets - Summary 2019, UK Finance*

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

Finally, Thailand represents an interesting case study on the rapid rollout and adoption of an easy to use, real-time payments system - PromptPay. Although the share of volume of other traditional electronic payments (card and EFT) have declined in share, the absolute numbers of volume and value are steadily increasing.

**Box 7: Thailand's PromptPay making headway in its national payments system**

The journey of PromptPay initially began in 2016 for government welfare disbursements. In January 2017, PromptPay's services were extended to include real-time fund transfers between accounts. The principles of PromptPay was to enable faster and convenient transfers between individuals and businesses using proxies (e.g. ID numbers or mobile numbers).

As of March 2018, there were 40.4 million registered PromptPay users. Over the year, PromptPay completed 136 million transactions amounting to 490 billion baht (R240 billion).

On a month-to-month basis, the average transaction value of PromptPay is decreasing, signalling that individuals and businesses are using PromptPay for day-to-day transactions. Customers can access PromptPay through mobile/Internet, ATM and bank branches, however, the data shows that nearly 95% of all transactions are done via people's phones.

*Source: Payments Systems Report, Bank of Thailand, 2018*

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

Table 1 below summarises the list of the countries that have implemented real-time payments

Table 1: Instant payment schemes in CPMI countries

| Country | Implementation | Year launch | Commentary |
|---|---|---|---|
| Australia | New Payments Platform (NPP) | 2018 | Since its public launch, the platform has settled a total of 19.4 million interbank transactions amounting to AUS$ 15.1 billion |
| Hong Kong | Faster Payments system (HK FPS) | 2018 | Supports instant payments in HKD and RMB with the use of mobile phone numbers, email addresses or QR codes. The Hong Kong Faster payments System has achieved interoperability for both HKD and RMB. |
| India | Immediate Payment Service (IMPS)<br><br>Unified Payments Interface (UPI | IMPS - 2010<br><br>UPI - 2016 | Unified Payments Interface (UPI), a platform that facilitates instant 24/7 low-value payments and collections through a standard set of application programming interfaces (APIs). A 50% increase in electronic payments was observed after the introduction of the UPI |
| Italy | Jiffy | 2014 | Jiffy is a product owned by SIA. SIA began operations in the 1980s in Italy but quickly expanded |
| Mexico | Interbanking Electronic Payments system (SPEI) | 2015 | "The SPEI began conducting near-real-time payments in 2004 with operations on a 21/7 basis for mobile payments since March 2015 and on a 24/7 basis since November 2015" (BIS, 2016). |
| Selected countries in the EU | TARGET instant payment settlement (TIPS) service & SEPA Instant Credit Transfer (SCTinst) | 2017 | "Payment service providers are encouraged to make instant payment solutions in euro available at a pan-European level as of November 2017. Although it is not mandatory for payment service providers to offer SCTinst" - ECB |

*Source: Economic Impact of Real-time payments, Mastercard, Vocalink, Deloitte. Updated with information from the websites of the platforms in each country*

[4] Finscope SA, Finmark Trust, 2019,
[5] Recent Rapid Payments study conducted by PwC & BankservAfrica estimates that South Africans transact approximately 1500 times per year across formal and informal channels, where almost 90% of the transactions are cash-based and mostly below R100.
[6] Genesis Analytics team analysis using data from BIS
[7] RPP Commercial case, BSVA & PWC analysis

According to global studies[42] , some of the economic benefits of having a real-time, low-cost and easy-to-use electronic payments platforms include:

- Financial deepening of the economy (reduce the size of the shadow economy)
- Open the opportunity for businesses to raise working capital thereby better supporting SMMEs
- Improve the efficiency of the financial system by making funds available in near real-time
- Drive deepened financial inclusion
- Reduce the cost of payments systems particularly due to cash

[42] Economic Impact of Real-time payments, Mastercard, Vocalink, Deloitte, 2019

# 5. SUSTAINABLE ECONOMIC GAINS WORTH 0.25% OF SOUTH AFRICA'S GDP COULD BE REALISED

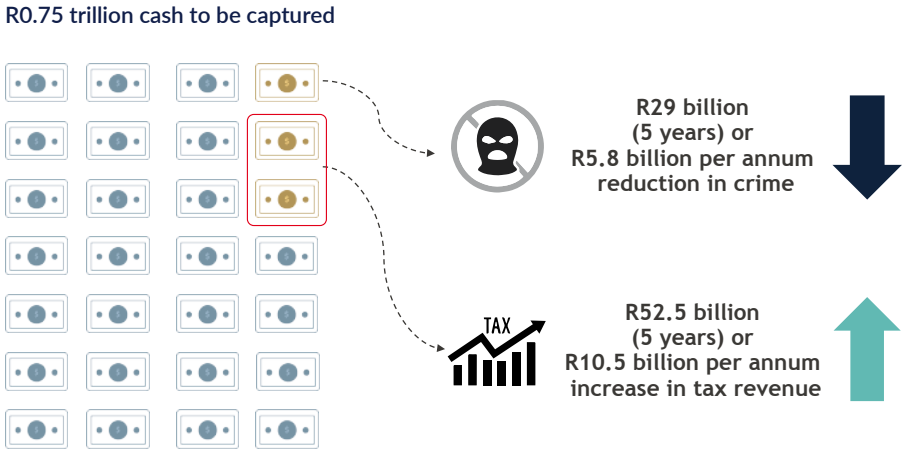
***The impact of an electronic payments system which can truly compete with cash for South Africa is estimated at R0.75 trillion (over 5 years) which can be captured through an erosion of cash remittance and cash payment flows to merchants. The costs that will be saved out of this reduction in the demand for cash in South Africa is estimated to be approximately R82bn or 0.25% of South Africa's GDP.***

The immediate, direct impact of capturing R0.75 trillion worth of cash flows over five years would be the growth in government tax revenue, which would help alleviate some of the tax revenue shortfalls. According to SARS, for the 2019 financial year, there was a shortfall of R42 billion in tax revenue collected. If we conservatively apply the 7% small-business income tax, capturing these cash payment flows could result in a tax revenue gain of R52.5 billion (over 5 years).

The displacement of cash would also result in ancillary benefits for the economy through indirect cost savings[43]. For consumers, it would be the indirect cost incurred of approximately 1.4% (refer to Figure 6), for MSMEs it would be around 0.5% to 0.6% (cash fees less the MSF), and for the rest of the industry it would be the costs attributed to crime of approximately 1%. Given that banks and CIT companies generally provide cash services at a fixed cost, the benefits of the payments system envisaged may not be immediately realised, but in the long-term as the variable components of cash decrease, banks would be able to address these fixed cost components.

As a whole, the 3.9% benefit from the indirect cost of cash and the potential aggregate tax revenue gain could result in overall benefits of R82 billion for South Africa equating to a total percentage of 0.25% of the current South African GDP[44] over 5 years. This impact coincides with Image 1 below and illustrates this benefit.

**Image 4: Depiction of economic gains**




It is important to note that the enhancements in the national payments system have to be underpinned by the broader national imperative to support the digitisation of South African economy usually driven by various governmental and/or private sector initiatives (mobile data infrastructures and their affordability etc.).

[43] Considering consumers, the indirect costs of cash, being: (a) the cost of travel; (b); time forgone; (c) interest forgone; and (d) the risk of theft as well as the direct costs associated with cash withdrawal fees at ATMs, Branches and POS can be avoided freeing up available funds for consumers to conduct more productive economic activity.

[44] Current nominal SA GDP is R2.5 trillion.

# 6. SUPPORT BY GOVERNMENT ENTITIES AND REGULATORY BODIES IS NEEDED FOR THIS TO WORK

Going forward, further activities are envisaged by all parties involved. The banking industry as a collective, as members of the **Banking Association of South Africa (BASA)** and **Payments Association of South Africa (PASA)**, and as customers of the Automated Clearing House (ACH) services offered by **BankservAfrica**, holds that this change is of a transformative nature and understands that the parties above and banks individually must be prepared to play numerous roles to advocate for the benefits of this transformation and progress in the delivery of the new platform. The roles envisaged to be played by each of these parties are summarised below.

Table 2: Support from the Payments Industry

| Stakeholder | Interest | Role | Activities required to support new system |
|---|---|---|---|
| THE BANKING ASSOCIATION SOUTH AFRICA<br>Banking Association of South Africa | Long term health and vitality of the NPS | Advocacy and lobbying interests amongst regulatory bodies, and government entities | Advocacy at the highest of decision- making levels in banks for commitment and funding of the establishment of the envisaged payments system.<br><br>Advocacy at the highest levels of government authorities and regulatory bodies for support of the envisaged payments system. |
| PASA<br>Payments Association of South Africa | Support the NPS by promoting safety, efficiency and integrity of the NPS | Management of the payment ecosystem | Define the payments system rules, standards as well as legal and regulatory frameworks associated with the envisaged payments system. |
| BANKSERVAFRICA<br>BankservAfrica | Ensuring technical and operational resilience | Licensed clearing house operator for the low value electronic payments ecosystem. | Develop, deliver and operate the technical capabilities and solutions required. |
| Individual Commercial Banks | Contributing towards the long term health and sustainability of the NPS. | Direct participants as members of BASA and PASA and as customers of BankservAfrica. | Prioritise funding within the banks and mobilise internal support for the envisaged payments system. |

## LEARNING FROM THE PAYMENT STUDY TOUR

Developing an industry solution that is able to truly compete with cash brings benefits to not only the Banks but for the economy and society as a whole. As a result, support will also be required from both the public and private sectors to drive the adoption of the solution.

The need for broad-based support was confirmed as part of a study tour conducted by the payments industry when assessing the innovations and developments made in specific Asian and South-East Asian countries: India, Thailand, China, and Singapore. Some key findings from the tour were:

- A large-scale payments modernisation journey needs a strong national imperative driven by government, in collaboration with banks, associations and FinTechs. The national imperative needs to be supported by a regulatory framework that promotes and does not stifle innovation;
- While clear sponsorship and funding are critical, the collaboration of participants (banks, regulators, FinTechs etc) is the fundamental cornerstone of success. Large-scale collateral benefits can only be achieved if parties involved work collaboratively within defined roles and responsibilities; and
- The ecosystem value needs to be well-defined and understood. Participants need to understand their individual role and contribution towards the ecosystem. They need to collaborate, be socially responsible and at the same time be commercially conscious in the implementation of such a large scale transformation.

Boxes 8 and 9 below discusses how governments from India and Thailand supported and incentivised the adoption of digital payments.

**Box 8: India's Drive Towards a Digital Economy**

Driven by the need to reduce leakages in the social security distribution and minimise tax evasion, the Indian Government, working closely with the Reserve Bank of India (RBI) introduced a series of interventions including demonetisation, increasing mobile penetration and ensuring electronic payments are low-cost, effortless and easily accessible. Further support of digital payment methods was encouraged through government subsidies of fees for transactions below Rs 2000.

**"Cabinet approves subsidising MDR charges on debit card/BHIM UPI/AePS transactions of value less than Rs.2000**

The Union Cabinet chaired by Prime Minister Shri Narendra Modi has approved that the Merchant Discount Rate (MDR) applicable on all debit card/BHIM UPI/Aadhaar enabled Payments system (AePS) transactions up to and including a value of Rs. 2000 will be borne by the Government for a period of two years with effect from 1st January 2018 by reimbursing the same to the banks."[45]

**Box 9: Thailand's National e-Payment Master Plan**

Recognising the need to transform into a digital economy, the Thai Government developed the National e-Payment Master Plan, consisting of five core projects aimed are reducing money laundering, corruption, payment for illegal activities and the size of the informal economy as well as lower banking costs, strengthening financial inclusion and broadening the tax base.

[45] Press Information, Government of India

SUPPORT BY GOVERNMENT ENTITIES AND REGLATORY BODIES IS NEEDED FOR THIS TO WORK

The National e-Payment Master Plan created an integrated e-payment infrastructure for funds transfer and payment for consumers, business and government with the integration of the tax and social welfare disbursement system. Government incentivised customer adoption by making it easier to receive tax refunds through digital payments such as PromptPay. PromptPay offers an interbank, real-time, proxy payment platform to banked and unbanked individuals and entities, without the need for an actual bank in transaction processing.

**"PromptPay users to get faster refunds**

The Revenue Department will be able to pay personal income tax refunds in less than three days to those who file their returns for the 2016 tax year in coming months and have signed up for PromptPay.

Those who have registered their bank accounts with PromptPay, a fund transfer service, will receive personal income tax refunds faster than those who file tax returns online, which now takes three days on average, said Prasong Poontaneat, director-general of the Revenue Department."[46]

The same approach could be considered for South Africa as part of the drive towards a more inclusive, digital economy. Initially, it is envisaged that support will be required from the following stakeholders. Table 3 below summarises the support needed from regulatory bodies and government entities as well as the envisaged benefits for each of these entities.

[46] PromptPay users to get faster refund, Bangkok Post, December 2016

SUPPORT BY GOVERNMENT ENTITIES AND REGULATORY BODIES IS NEEDED FOR THIS TO WORK

Table 3: Support required from the government and agencies

| Stakeholder | Interest in the new system | Envisaged benefits of new system | Required support for new system |
|---|---|---|---|
| South African Reserve Bank (SARB) | Support for the NPS Vision 2025, the SARB aims to promote inclusive growth, promote safety in the NPS and promote innovation in the financial sector | - Improved payments system interoperability<br>- Broader and enhanced access to non-banks<br>- Higher adoption of electronic payments, contributing to the safety and efficiency of the NPS (overarching goal)<br>- Improved management and oversight of cash in the economy | - Encourage the adoption of the new system over cash through levers such as risk based approaches to regulation and interchange |
| National Treasury | + Greater and deeper financial inclusion which will bolster economic growth | - Deeper financial inclusion<br>- Reduce cash dependency across SA<br>- Decreased financial risk<br>- Decreased risk on cash (crime & fraud)<br>- Improved efficiency in grant disbursements and municipal revenue collection | - Promote and support wider public interests<br>- Promote public-private partnerships to drive greater digital financial inclusion and deepening |
| Financial Sector Conduct Authority (FSCA) | + Promote the fair treatment of consumers by financial institutions<br>+ Financial education | - Greater access to affordable financial services for the public<br>- Simpler use of banking and payments products that will add to financial literacy | - Provide support to demonstrate the payments industry's focus on consumer outcomes |
| South African Revenue Services (SARS) | - Tax revenue collection & disbursement of tax refunds | - Formalising the informal sector will increase the opportunities for tax collection and reduce tax leakage | - Incentivise and promote the use of payments platform for tax collection and payments<br>- Broader MSME education of tax liability |
| The South African Social Security Agency (SASSA) | - Responsible for the administration & disbursement of social grants | - Reduced cash burden on disbursements and the associated costs to supply cash | - SASSA education and behavioural change<br>- Consider the incentive programmes to use the system<br>- Promote a savings culture through electronic payments<br>- Collaborate with industry to reduce the cash burden (incl operations) |

We envisage that several non-bank payment providers, such as Systems Operators (SOs) and Third Party Payments Providers (TPPPs) as well as many of the potential users of payments systems also stand to benefit from this system. Also their support will be necessary to promote the adoption of this system. The table below highlights their envisaged roles in support of the ubiquitous roll-out and use of such a system.

SUPPORT BY GOVERNMENT ENTITIES AND REGLATORY BODIES IS NEEDED FOR THIS TO WORK

Table 4: Non-bank payments stakeholders and support required

| Stakeholder | Interest in the new system | Envisaged benefits of new system |
|---|---|---|
| Payments Stakeholder Systems Forum (PSSF) | The PSSF or Early Debit Order (EDO) PSSF acts as the forum for its members in the space of collecting funds to discuss and identify matters of concern with respect to EDO | - Raise awareness<br>- Secure broader industry participation by staying close-to the developments of the new system |
| Association of System Operators (ASO) | An independent body formed to represent the interests of all Payments system Operators in the RSA. | - Raise awareness<br>- Secure broader industry participation by staying close-to the developments of the new system<br>- Promote collaborative participation from the fintech community<br>- Participate in product innovations |
| South Africa Retailers Payments Industry Forum (SARPIF) | An interest group of retailers and retail service organisations, established to discuss matters of common relevance concerning payment related activities, regulations and systems in Southern Africa. | - Promote retail payment services interoperability<br>- Raise public awareness<br>- Leverage their growing footprint and interface with the public for greater adoption |

# 7. ROLL-OUT PLAN AND TIMING OF SUPPORT

The Payments Industry (PASA, BASA and BankservAfrica) is ready to move into the development of the low-cost, real-time, easy-to-use payments system that is able to challenge cash effectively on the basis of the commercial and economic benefits. The support from the broader stakeholder group will drive the adoption of the envisaged system through a variety of possible levers described in Section 6. It is therefore vital that the key stakeholders are kept abreast of the developments and initiate the processes to design and develop the potential adoption levers. The envisaged plan to develop a minimal viable solution (MVP) will follow three activities, namely:

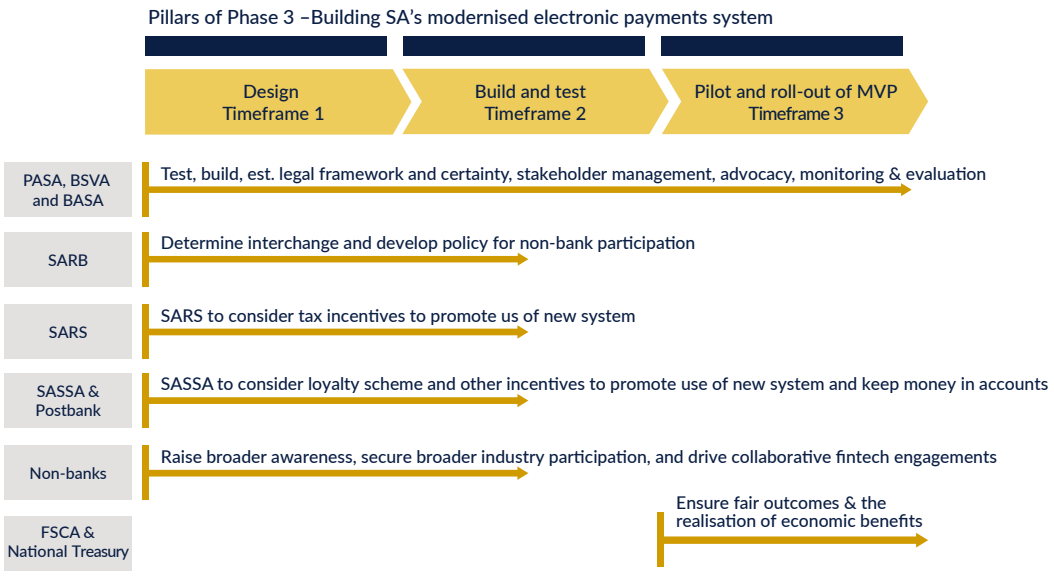
**Activity 1 or the 'Design' activity** principally focuses on creating the first layer of functionality and to get various industry stakeholders to also start creating the incentives and solutions to support the new system. As part of the Design activity, the Payments industry will also start defining the rules and specifications of the new system.

**Activity 2 or the 'Build and Test' activity** will take the agreed rules and specification of the product to create a working product that can be tested by industry in a 'sandbox' environment. Non-banks can also use this sub-phase to test the potential of their own solutions above the platform.

**Activity 3 or the 'Pilot and roll-out of first functionality'** will officially launch the new system, first amongst Industry stakeholders to test for system functionality. Once the Industry is satisfied, the product will be made available to the general public. During this sub-phase, general communication and marketing about the new system should be communicated to the public. Once the first set of features and functionality is launched, ongoing monitoring of uptake and usage will be tracked by the Payments industry.

The image below depicts a high-level, indicative timeline of activities required from stakeholders identified in Section 6. However, we acknowledge the critical dependency amongst each of the stakeholders which will require further work and stakeholder engagements.

**Image 5: Depiction of work to be done by key stakeholders in alignment with implementation journey**



# 8. CONCLUSION

In conclusion, there is a definite case to be made for modernising the electronic payments system and to establish products that are able to truly challenge cash. There are various macro and micro-economic benefits that can be realised which can catapult South Africa back to the forefront of payments innovation. Over and above Project Future and the Rapid Payments Programme, there are several enhancements and initiatives in the pipeline for the payments industry to provide more immediate benefit to the industry and consumers while also enabling a smooth transition towards the end state in an efficient and cost-effective manner. We believe that this overall payments modernisation programme will provide a holistic industry response towards the broad policy goals set out in the South African Reserve Bank's Vision 2025 and aligns to the roadmap set out by the presidential committee on South Africa's fourth industrial revolution (4IR) strategy.

The South Africa in the Digital Age (SADA)[47] initiative aims to identify inclusive economic opportunities for job creation, and the enablers and actions required for these opportunities to scale significantly and is linked to the Public-Private Growth Initiative (PPGI) between the Presidency and the private sector. Through this initiative, there are sustainable and tangible opportunities for South Africa which include (1) the capturing of the increasing share of globally traded services, (2) the unlocking of demand for low-skilled labour, and (3) for South Africa to position itself as a regional hub for Frontier technology. The establishment of a modernised real-time electronic payments system is a key enabler for the opportunities identified through the SADA initiative with its focus on financial deepening and digital inclusion, cost-savings, transparency in the payments system, and economic growth.

It is acknowledged, that future work might focus on quantifying the exact macro economic benefits to be realised from de-cashing society in favour of digital alternatives, specifically in relation to the improvements realised through the increased velocity of funds flowing in the economy. It is hypothesised that increasing the speed of payments could have a positive impact on GDP which needs to be validated through more in-depth econometric analysis.

Despite the need for more in-depth quantitative studies, PASA, BankservAfrica and the banking industry believe that there is enough of a broad case for supporting the modernisation of payments in the form of a low-cost, easy-to-use, real-time payments capability, to enable products that are able to truly challenge cash.

We believe that the successful implementation of this new payments platform will result in important economic opportunities that will: 1) support the growth of small businesses; 2) contribute to the formalisation of the informal economy; 3) as a viable alternative to cash, bring about a number of far-reaching macro-economic and societal benefits; and 4) play a significant role to reduce certain risks in electronic retail payments in South Africa.

[47] SADA is a joint initiative between the Gordon Institute of Business Science (GIBS), Genesis Analytics, and the Pathways to Prosperity Commission.

# CONTACTS

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PROJECT FUTURE

Driven by PASA