Nigerian Payments Landscape

March 2019

Contents

The following body of work was developed by leveraging existing resources, with input from a range of stakeholders and sources

We engaged with a wide range of stakeholders across the ecosystem…

1. Interswitch
2. SWIFTA
3. NIBSS Mcash
4. First Bank
5. Stanbic IBTC
6. Access Bank
7. Accion Advisory
8. Nigeria Off-grid Market Acceleration Program (NOMAP)
9. Nigeria Power Sector Program (NPSP) Off-grid Payments Experts

…and referenced a number of existing publications and datasets

1. EFInA Access to Financial Services in Nigeria Survey 2018
2. Global Findex Database
3. World Bank Development Indicators
4. Consultative Group to Assist the Poor (CGAP)
5. Business Day Nigeria
6. Jumia Mobile Report 2018
7. Central Bank of Nigeria Payment Services Bank Guidelines
8. Nigeria FinTech Survey 2017, PwC
9. PAYG and the Internet of Things, Mastercard, 2018

Executive summary (1/3)

Impetus for developing this piece of analysis	The NPSP Transaction Team was approached by a number of Solar Home System (SHS) companies who have experience deploying Pay-As-You-Go (PAYG) devices in the East African market, where payments were collected primarily through mobile money. As many of these companies are now entering the Nigerian market, which has low mobile money uptake and a large unbanked population, the companies requested advice on how to collect payments from the bottom of the pyramid, in order to make solar accessible to the unbanked.
Objectives	1. Identify the major challenges to collecting payments from retail consumers in Nigeria and understand what mitigants are currently in place, or under development, to address these challenges 2. Provide an overview of Nigeria's payment landscape, focusing on the most prominent payment collection providers and their offerings 3. Provide a framework for SHS companies to use in selecting the optimal payment collection provider for their particular use case

Executive summary (2/3)

Summary of findings

Setting the context for payments in Nigeria

Using digital channels for retail payment collection provides an opportunity to reach largely rural, unbanked populations at reduced cost, which has the potential to increase energy access. The energy access/mobile payments trend has already been observed in a number of East African markets, where PAYG solar unit sales were 1.3 million between 2011-2017, as compared to 176,000 in Ghana and Nigeria. The uptick in PAYG unit sales in East Africa was largely driven by the ubiquity of mobile payments, which have made solar more accessible to retail customers due to convenience, ease and lower transaction fees.

Conversely, use of mobile payments to unlock energy access has been limited in Nigeria, largely due to:

1. **Low financial inclusion:** Financial inclusion in Nigeria currently stands at 44%, amongst the lowest in Sub-Saharan Africa and lagging behind its middle income peer group, making it a challenging environment for payment collection
2. **Low mobile money awareness:** Awareness of mobile money, and other alternative means of accessing financial services, is low in Nigeria, especially amongst the financially-excluded group, which comprises the majority of the adult population
3. **Restrictive mobile money regulation:** Current regulation restricts Mobile Network Operators (MNOs) from administering mobile money services, except in their capacity as the providers of the underlying infrastructure for banks and corporates to transact on

In an effort to raise financial inclusion and mobile money uptake, the Central Bank of Nigeria (CBN) has created a new license called the Payment Services Bank (PSB) license, which will allow MNOs to take a lead role in administering mobile money services. Since MNOs have higher penetration amongst the financially-excluded population and possess the technologies to drive ease of payments and lower transaction costs, instituting the PSB license should make payments accessible to a larger number of people, enabling merchants (SHS companies and others) to collect with ease.

Executive summary (3/3)

Summary of findings

Beyond the institution of the PSB license, payments are expected to become easier in Nigeria due to the large number of Financial Technology (FinTech) companies driving innovation in the Digital Financial Services (DFS) space. Nigeria has grown into the leading FinTech destination on the continent, with the highest levels of FinTech deal activity since 2010 (nine transactions into the mobile payments space with an aggregate value of USD 250 million). The large investments into FinTech are driving innovation and growth of DFS in Nigeria, creating a vibrant ecosystem with many prominent players.

Understanding the payments landscape and prominent players

We define the roles of four main actors in DFS, who SHS companies can integrate with for provision of retail payment collection:

1. (Super-)Agents
2. Mobile Money Operators (MMOs)
3. Infrastructure Providers
4. PSBs

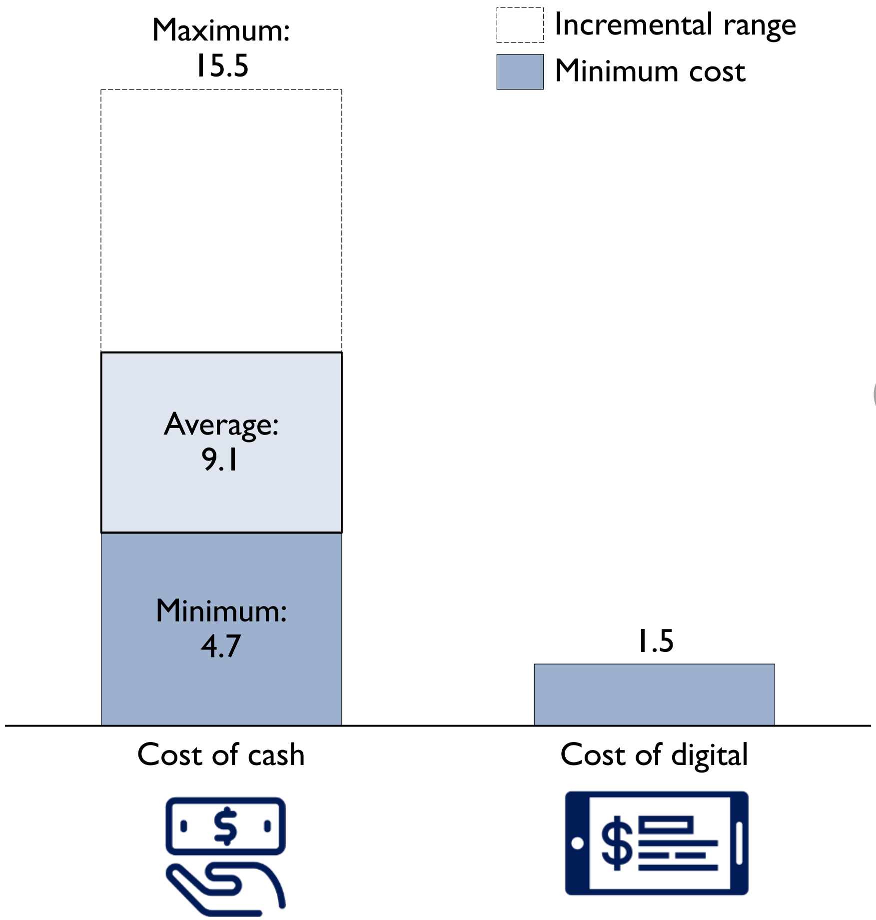
We then look at the trade-offs which exist when choosing between the different types of payment collection providers, both from a consumer- and SHS company- perspective.

Finally, we profile nine of the most prominent payment collection providers in Nigeria, focusing on their most appropriate payment collection products/services for bottom-of-the-pyramid consumers. We then developed the Payment Collection Provider Matrix, a tool that SHS companies can use to select the optimal payment collections provider (from the nine profiled companies) for their use case, depending on their prioritization of customer affordability, reach, integration cost and ongoing transaction fees.

Context of Nigeria’s low financial inclusion & challenging payments landscape

Distributed energy solutions that leverage digital payment create opportunities for SHS companies to reach their target demographic at low cost

Comparison of the cost of cash and digital payments
(Percentage of gross transaction amount)



- Nigeria remains a heavily cash-based society
  - Vast majority of adults (82%) receive their income in cash
  - Only 16% of adults report making a digital payment in the past 12 months

- However, cash collection has hidden costs associated with it, including:
  - Management and accounting
  - Higher incidence of fraud and theft
  - Travel costs and opportunity cost of time taken away from making sales (if SHS company deploys own agent network for sales and collections)

- IHL estimates that the cost of cash collection in different sectors ranges between 4.7% - 15.5%. The average cost of cash handling activities across all sectors was 9.1%

- Using digital payment and collection methods can reduce the costs associated with cash handling
  - SHS companies can pay as little as 1.5% of the gross transaction amount in fees, just 16% of the average cost of cash handling across all sectors, by using innovative payment solutions
  - This presents a large opportunity for SHS companies to lower their operational costs

- Alternatively, SHS companies can leverage the existing agent networks of Mobile Money Operators (MMOs) in Nigeria, further expanding their access to their target demographic (a largely rural, unbanked population)
- In addition to a payments and collection contract, SHS companies can negotiate distribution for a reasonable sales commission, which has the potential to increase revenues without having to build out proprietary distribution channels

Source: NPSP research (SHS company and expert interviews); IHL Services (2018) "Cash Multipliers - How reducing the costs of cash handling can enable retail sales and profit grow"

However, several barriers exist to leveraging digital payments for scale

The opportunity cannot be fully unlocked in Nigeria due to an under-developed digital payments landscape, which can be attributed to low financial inclusion, low mobile money awareness and restrictive regulation

Financial Inclusion

Mobile Money Awareness

Mobile Money Regulation

Deep-dives to follow

Financial inclusion in Nigeria is amongst the lowest in sub-Saharan Africa, lagging behind its peer group as well as countries with lower income

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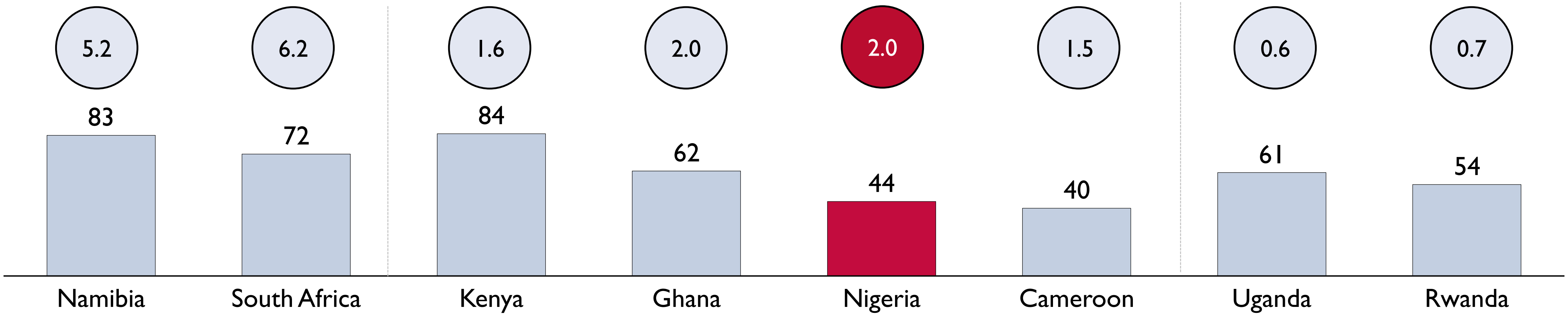
Financial access in select sub-Saharan African countries, 2017
(Banked population as a percentage of adults over 25)

x GDP/capita (USD '000)



Upper middle income

- High banked populations, ranging from 28-39% above Nigeria's

Lower middle income

- Despite having a relatively high GDP per capita within its peer group, Nigeria's banked population lags significantly behind its cohort
- Neighbouring Ghana, with similar income, has 18% higher banked population
- Kenya, with GDP per capita USD 400 less than Nigeria, has 40% higher banked population
- Cameroon, with lower GDP per capita than Nigeria, has similar banked population

Low income

- Banked populations higher than Nigeria, despite lower income levels

Source: World Bank National Accounts Data; Global Findex Database

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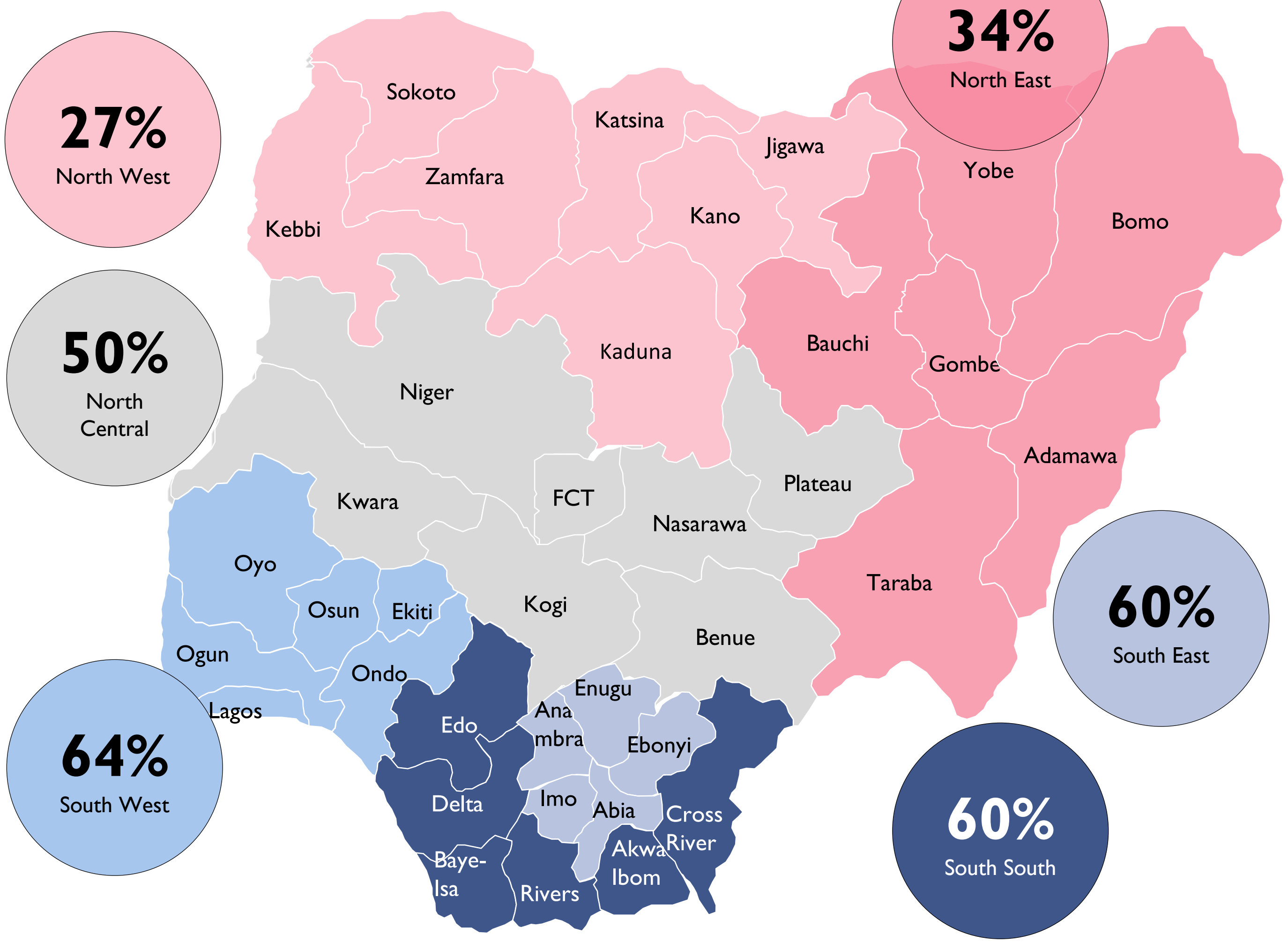
Within Nigerian borders, financial exclusion is highest in the north-east and north-west regions

Financial inclusion in Nigerian States
(Formally-included population as a percentage of adult population)



Source: EFInA Access to Financial Services in Nigeria Survey, 2018

- Low financial inclusion in Nigeria's North-West and North-East geopolitical zones make it a challenging market for SHS companies to penetrate, due to the difficulty in collecting payments
- SHS companies are encouraged to look into payment solutions which specifically target this demographic, such as partnerships with microfinance institutions for consumer finance
- Financial inclusion in the North is significantly lower than the rest of the country due to:
  1. Low income-earning capacity due to a predominantly agrarian economy
  2. Low literacy rates
     - Literacy rates range from 7.23% in Yobe State, 10.36% in Katsina, to 22.88% in Niger. The only true exception is Taraba State, which is further South, with 72% literacy
  3. Political insurgency and security concerns
  4. Insufficient financial access points resulting in greater average distances between consumers and financial access points
     - Consumers would have to travel an average of 60 kilometers in Kebbi State to a financial access point versus one kilometer in Lagos state

A significant proportion of the Nigerian population (~90%) has little or no knowledge of alternative means of accessing financial services, including the use of mobile money…

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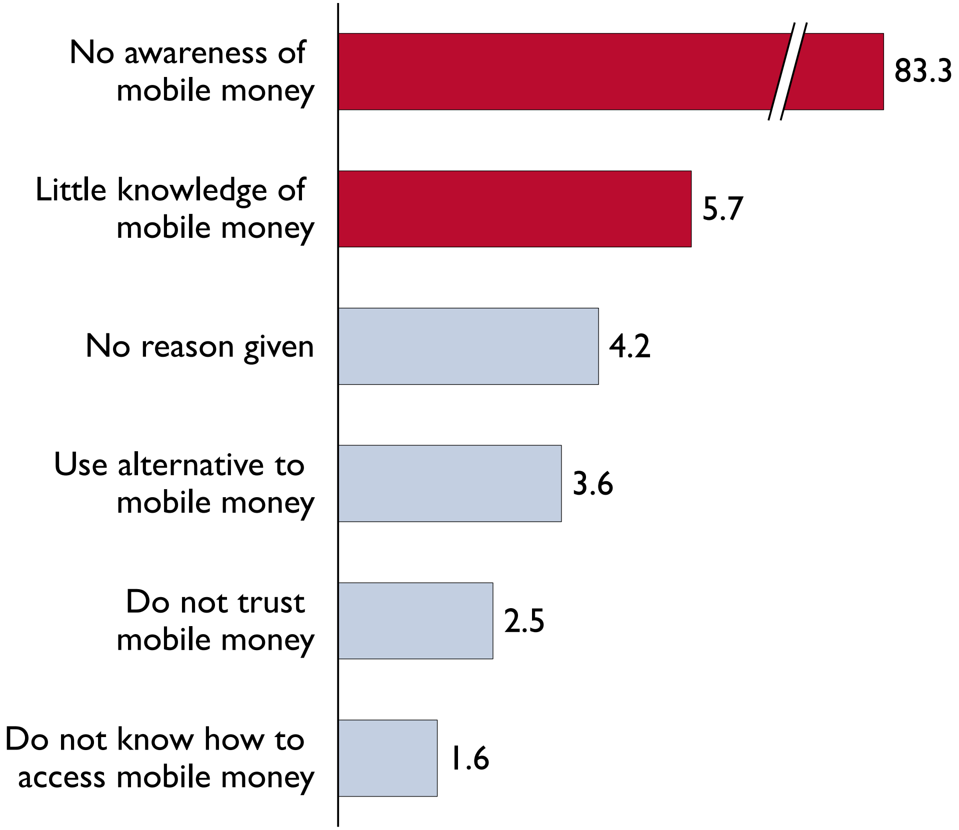
Reasons given by Nigerians for not having or using mobile money
(Percentage of adult population who do not have or use mobile money)
100% = 96.3 million



Awareness of, and access to, non-traditional means of financial service delivery
(Percentage of financially excluded population)
100% ~ 40 million

96% Not aware of mobile money

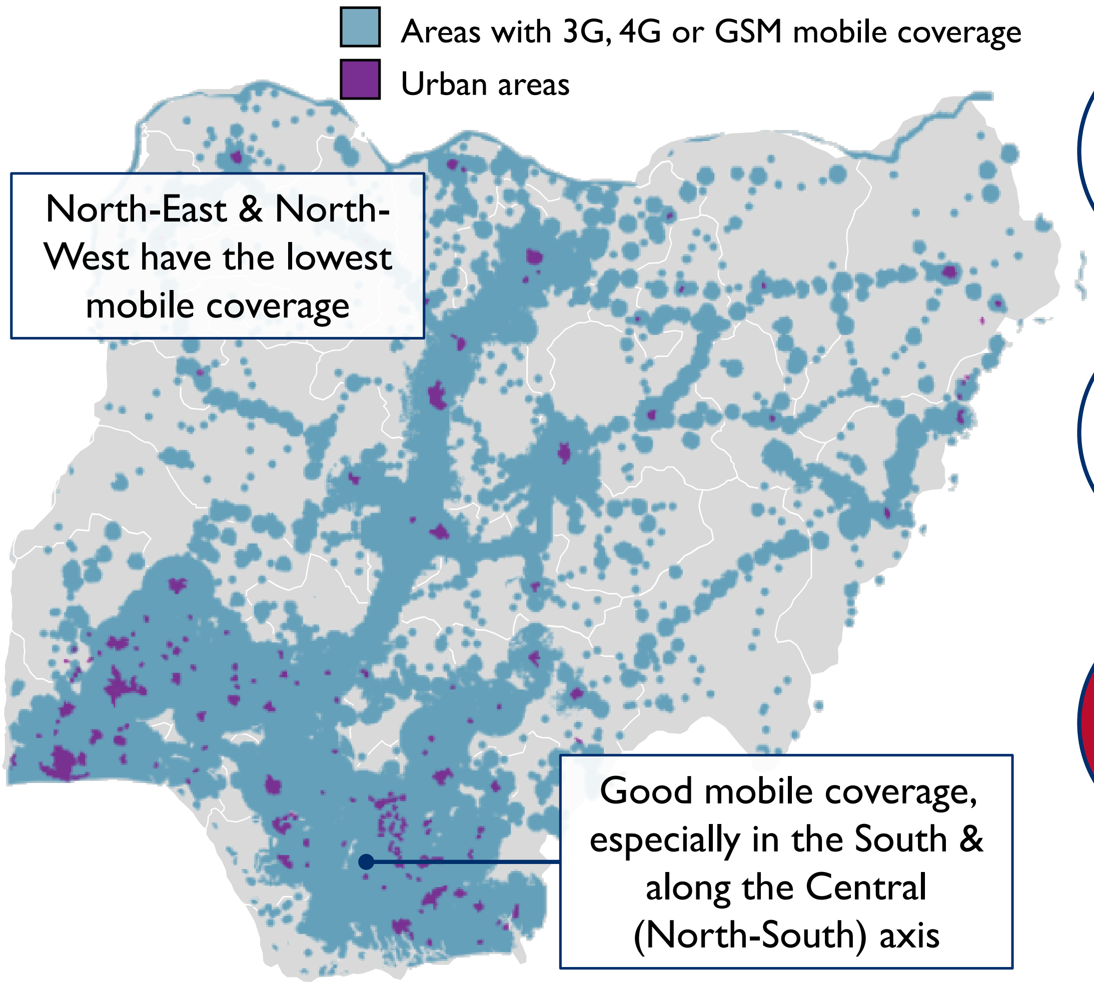
89% Not aware of banking agents

76% No access to financial institutions

Source: EFInA Access to Financial Services in Nigeria Survey, 2018

…despite having fairly good mobile network coverage in some parts of the country and high mobile penetration

Mobile coverage and penetration in Nigeria



190.9 million — Nigerian population

161.6 million — Mobile subscribers

84 % — Mobile penetration

Mobile network coverage in Nigeria roughly corresponds to patterns of financial inclusion

- Unfortunately, this means that areas with least financial inclusion (the North-East and North-West) also experience the worst mobile network coverage, making it difficult to deploy mobile payment solutions

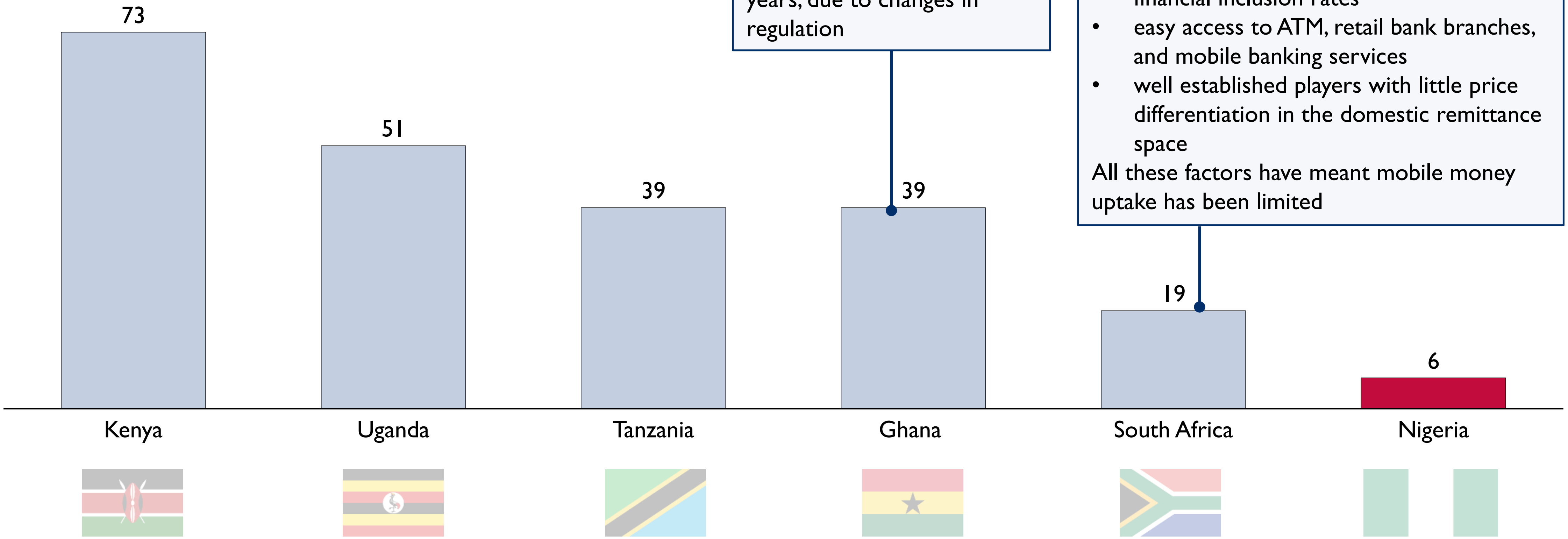
SHS companies need to develop work-around solutions to access areas with low network coverage and financial inclusion

- Agency banking and mobile money agent networks with footprints in these areas offer the most promising solutions

Source: FSP maps; Jumia Mobile Report 2018; World Bank population data

Low mobile money awareness has led to low mobile money uptake in Nigeria, as compared to other countries in sub-Saharan Africa

Mobile money uptake in select Sub-Saharan countries, 2017
(Percentage of population over 15 who own mobile money accounts)



Ghana, Nigeria's close neighbor, has experienced exponential growth in mobile money uptake in recent years, due to changes in regulation

South Africa's end-user environment has marked differences to other countries where mobile money uptake has grown, including:

- a sophisticated financial system, with high financial inclusion rates
- easy access to ATM, retail bank branches, and mobile banking services
- well established players with little price differentiation in the domestic remittance space

All these factors have meant mobile money uptake has been limited

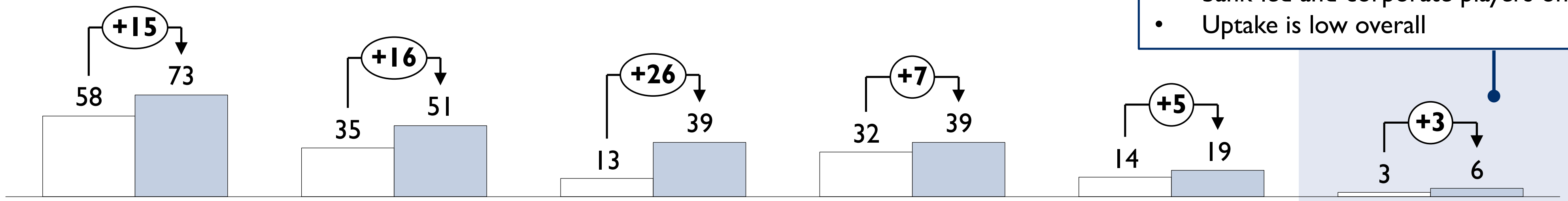
Source: Global Findex Database; FinMark Trust (September 2017), "Research Report on Mobile Money in South Africa"

In addition, prohibitive regulation restricting telco participation in the delivery of mobile money services has hampered mobile money uptake in the country

Mobile money uptake, 2014 & 2017
(Percentage of population over 15)

2014 | 2017 | x Growth in mobile money uptake (Percentage)

- Nigeria's mobile money market is highly fragmented, as compared to peer countries, and restricted to bank-led and corporate players only
- Uptake is low overall



	Kenya	Uganda	Ghana	Tanzania	South Africa	Nigeria
Bank-led		✓			✓	✓
Non-bank					✓	✓
Telco-led	✓	✓	✓	✓	✓	
***Select* mobile money operators**	1. Safaricom 2. Airtel 3. Telkom	1. MTN 2. Airtel 3. Uganda Telecom 4. AfriCell 5. Smart Telecom 6. MCash 7. EzeeMoney	1. Tigo Cash 2. MTN Mobile Money 3. Vodafone Cash 4. Airtel Money	1. Vodacom M-Pesa 2. Tigo Pesa 3. Airtel Money 4. Halotel Money 5. Zantel Ezy Pesa 6. TTCL	1. Vodacom m-Pesa (closed down) 2. MTN MoMo (closed, set to relaunch) 3. Shoprite 4. Pick 'n Pay 5. FNB	1. FCMB 2. Fidelity Bank 3. Stanbic IBTC 4. Sterling Bank 5. Access Bank 6. Paga 7. eTranzact 8. Teasy Mobile 9. PayCom

Uptake & growth highest in countries whose primary focus is telco-led mobile money

The newly-proposed PSB license will allow telco participation in financial services, which may raise mobile money uptake, increase financial inclusion and simplify payment collection

What is the PSB license	Payment Services Bank (PSB) is a change in CBN licensing regime which allows telco participation in mobile money and financial services
Permissible activities	• Accept deposits & maintain savings accounts • Carry out payments & remittances (including inbound cross-border personal remittances) • Issue debit & pre-paid cards (in partnership with existing card schemes) • Operate electronic purse (i.e. eWallet) • Invest in government and CBN securities
Restricted activities	• Granting any form of loan, advance or guarantee • Trade in the forex market (exceptions apply)* • Underwriting of insurance
Application requirements	Approval-in-Principle (AIP) 1. NGN 500,000 non-refundable bank draft, payable to CBN 2. Minimum capital deposit of NGN 5 billion License 1. NGN 2 million non-refundable licensing fee, payable to CBN

Timeline for development and implementation	2017: • CBN & Nigeria Communication Commission (NCC) sign an MOU October 2018: • Guidelines for Licensing, Regulation & Operation of PSBs are approved Today: • Implementation phase
Potential impact	• Significant potential to accelerate financial inclusion of the unbanked population, which currently stands at 60%, since telcos have higher reach and coverage than traditional and agency banking
Successful precedent	M-PESA Kenya • 93% of population have access to mobile money • 50% of GDP processed via the M-PESA platform

"This regulation isn't so much targeted at existing fintechs but is, in essence still a banking license that finally allows telcos to lead"

Source: Central Bank of Nigeria Payment Services Banks Guidelines (2018)

A survey of various media sources show optimism about the PSB license's ability to drive financial inclusion, raise mobile money uptake and reach underserved populations

The move [will] enhance access to financial services to the rural poor, low-income earners and the financially-excluded in society

- Airtel Kenya representative

It is encouraging to see the CBN react to the fact that other measures are now necessary to move financial inclusion forward. On the list of potential promoters of this license are telcos, supermarket operators, and mobile money operators, and of course traditional retail Banks. Of this list, **the Telcos seem to be the most promising. Their historical hunger for this space coupled with their strong distribution networks and a strong incentive to play in the banking space have them primed for action**

Telcos have more penetration in the user demographic that is generally "under-banked" or unbanked, and possess the technologies needed to drive ease and generally lower cost of transactions. They are also incentivized to make this work to their benefit, as it is a low margin high volume business, and the more penetration they get, the more money they are able to make. This also paves the way for an interesting spin on mobile money. **The involvement of telcos in the banking space is also good for the end user**

- Business Day Nigeria

Nigeria's leading telecommunications providers have confirmed their intent to apply for the PSB license

We will be applying for a payment service banking licence in Nigeria in the next month or so, and if all goes according to plan, **we will also be launching Mobile Money in Nigeria probably around Q2 of 2019**

- CEO of MTN Group, Rob Shuter

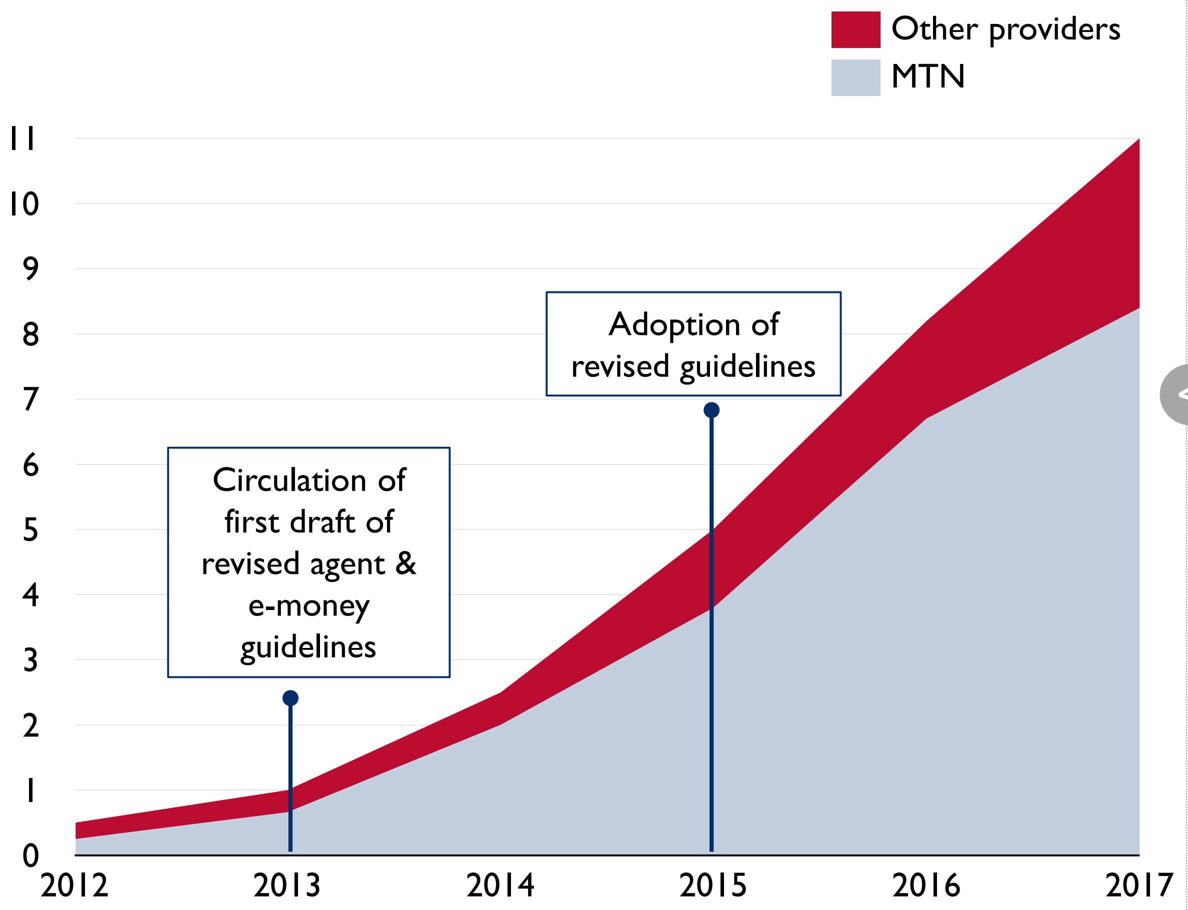
We have commenced the process of applying for a license as **we believe that we are at a vantage position to empower and connect more Nigerians** as well as deliver mobile banking services to the doorsteps of the financially excluded. **Folks will no longer need to keep their money inside cooking pots or under their beds** because we will securely connect them to the financial system

- CEO and MD of Airtel Nigeria, Segun Ogunsanya

Source: Financial Technology Africa, "Airtel Nigeria confirms plan to apply for PSB license"; Business Day Nigeria (2019), "10 Things to know about Nigeria's PSB Guidelines"

Case study: Changing regulation to allow telco-led mobile money dramatically increased mobile money uptake in Ghana, and increased financial inclusion

Active mobile money accounts by provider, 2012-2017
(Millions of mobile money accounts)



Ghana has quickly risen to become one of Africa's most successful and fastest growing mobile money markets, tripling mobile money uptake from 13% in 2014 to 39% in 2017

In 2008, Branchless Banking Guidelines were released

- The guidelines restricted e-money issuance and agent recruitment to the consortia of three licensed banks
- This discouraged MNOs from making crucial investments in launching products and recruiting agents who would ultimately be the "property" of the banks
- In 2009, mobile money was first deployed in the country
- However, uptake was slow and three years later, in 2012, there were still only 350,000 mobile money accounts in the country

In 2013, the Central Bank of Ghana worked with CGAP and industry stakeholders to draft revisions to the regulation

- The revised guidelines allowed mobile network operators to own and operate mobile money networks
- As a result, the MNOs invested aggressively in agent recruitment and customer education and grew mobile money from 350,000 in 2012 to over 11 million by 2017
- MTN has emerged as the industry leader, with over 75% of the market share

Source: MTN Ghana; Bank of Ghana; CGAP (2017), "How Ghana became one of Africa's top mobile money markets"

Case study: M-Pesa, a telco-led mobile money service in Kenya, revolutionized CICO, funds transfer and bill payment, bringing financial services to the unbanked population

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m-pesa

624 million	290k	20.6 million	81%
M-PESA Revenue (US$)	Agents[1]	Active accounts	Mobile Money Market Share

What is it?

- M-Pesa translates directly to M-Money in Swahili
- It is an SMS-based system that allows deposits, withdrawals, funds transfer and bill- and merchant-payments

History

- Launched by Safaricom, Kenya's leading telecommunications provider and member of the Vodacom group, in 2007
- M-Pesa was started using a grant, with the purpose of increasing financial access amongst the unbanked
- Financial access was particularly low at the time largely due to stringent KYC, minimum balance requirements and bank charges which the majority of the population could not afford
- M-Pesa was initially designed as a loan disbursement and payment tool but quickly evolved to include other services which were informed by the customer data collected by the service

Impact

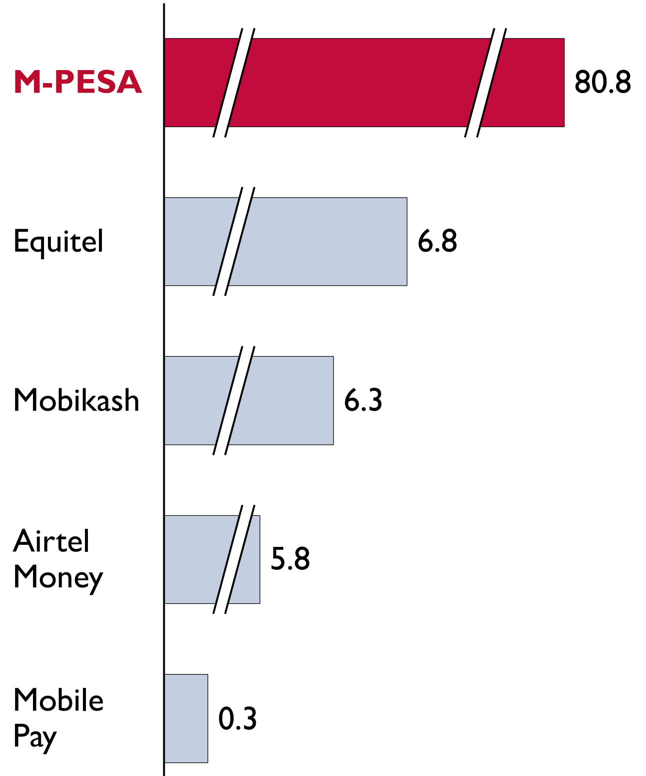
- M-Pesa has become the preferred transaction mechanism in Kenya for retail consumers
- As a result of M-PESA's success, 93% of Kenya's population have access to mobile money
- Over 70% of the country's GDP is processed via the M-PESA platform

1. Across 10 countries

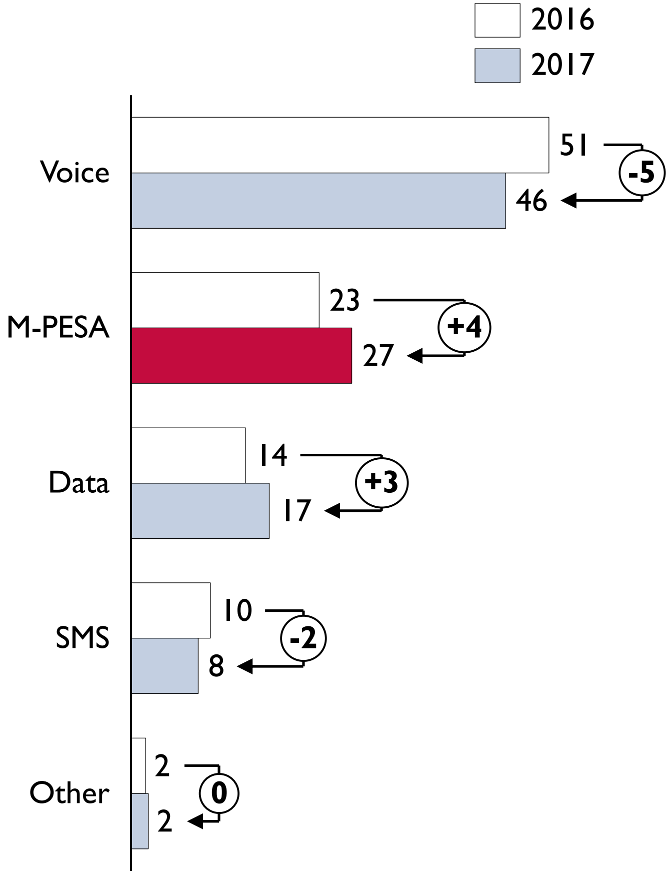
Source: Medium 2018, "Kenya Case Study: M-PESA story"

Case study: M-Pesa has grown into Kenya's leading mobile money service, contributing an increasing share of Safaricom's revenue and raising financial inclusion in the country

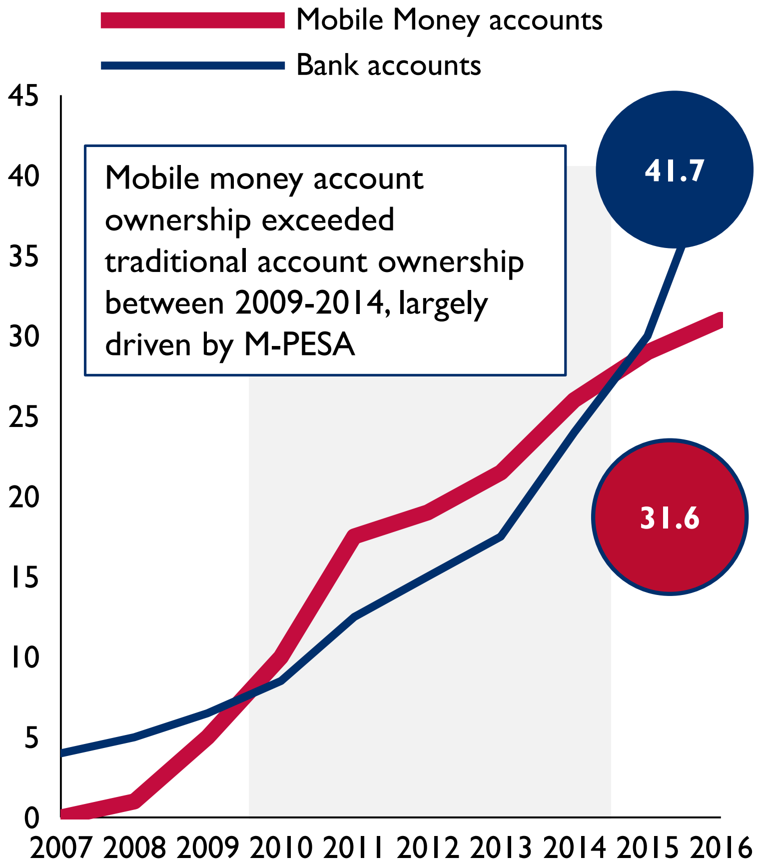
Market share of Kenya's mobile money providers, September 2017
(Percentage)



Contribution of different business segments to Safaricom's revenue, 2016 & 2017
(Percentage)



Total accounts housed by Kenyan Banks and Mobile Money Operators, 2006-16
(Millions of accounts)

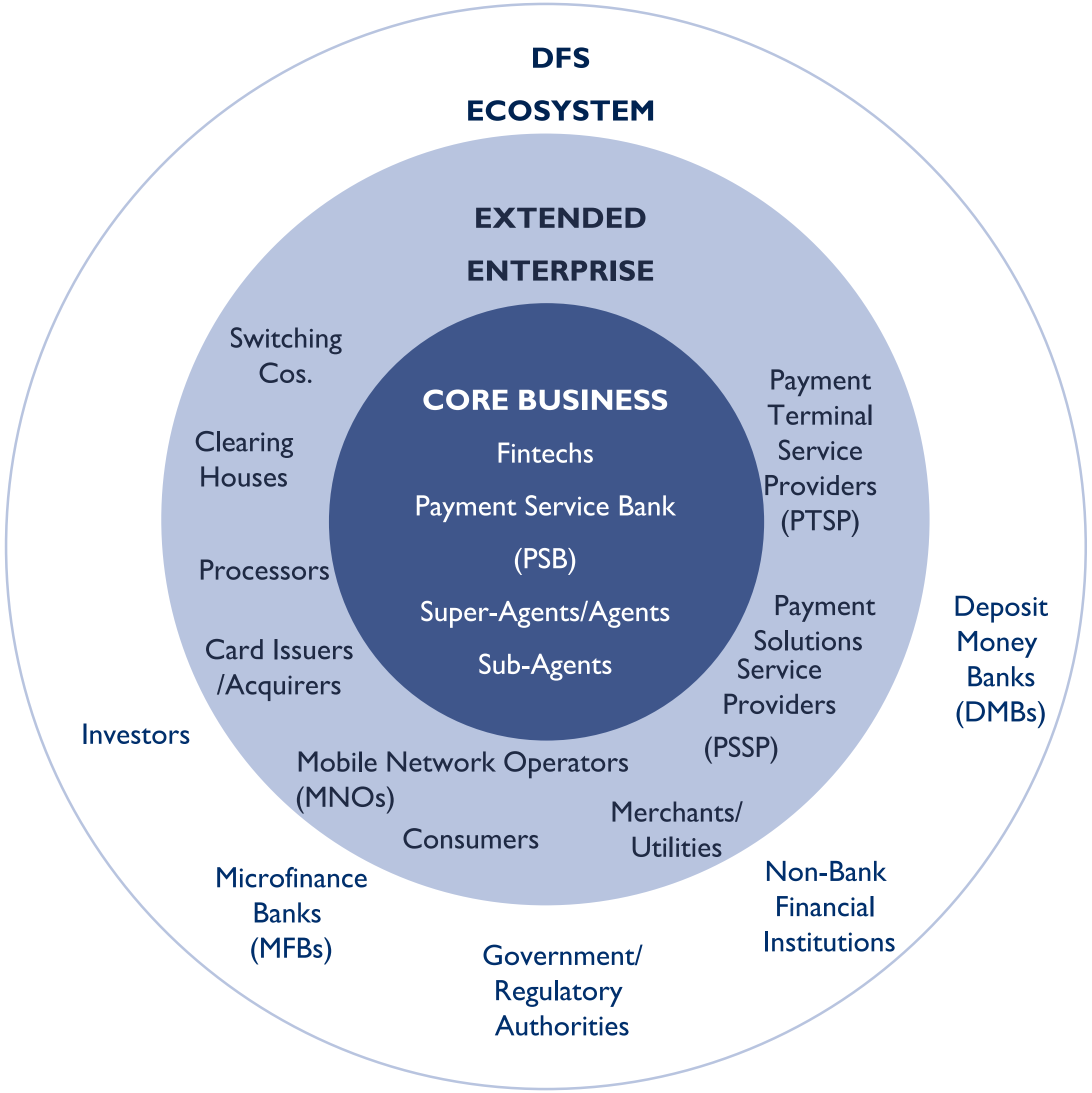


1. Across 10 countries

Source: Medium 2018, "Kenya Case Study: M-PESA story"; CGAP (2017), "Banking in the M-PESA Age"

Overview of Nigeria’s Digital Financial Services (DFS) system & players

Nigeria has a complex DFS space with a network of actors that have a range of capabilities and infrastructure to deliver value



Core business	• At the core of the Digital Financial Services (DFS) ecosystem are entities which provide mobile money services and agency banking services to customers • These include the issuers of e-money payment instruments as well as the client-facing agent networks who interface with the customer
Extended enterprise	• Consists of entities involved in the back-end processing of payment • These entities provide the underlying infrastructure and hardware for online, card and mobile payments
DFS ecosystem	• Wider ecosystem includes other financial institutes, government and regulatory bodies that create an enabling environment for DFS

This has been prompted by significant revolutionizing of Nigeria's financial services industry by Financial Technology companies (FinTechs)

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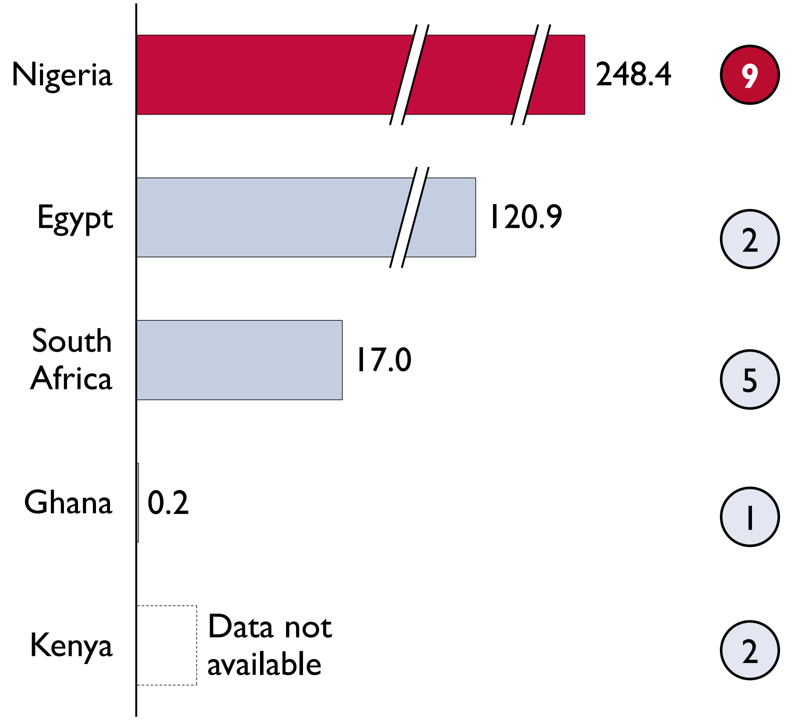
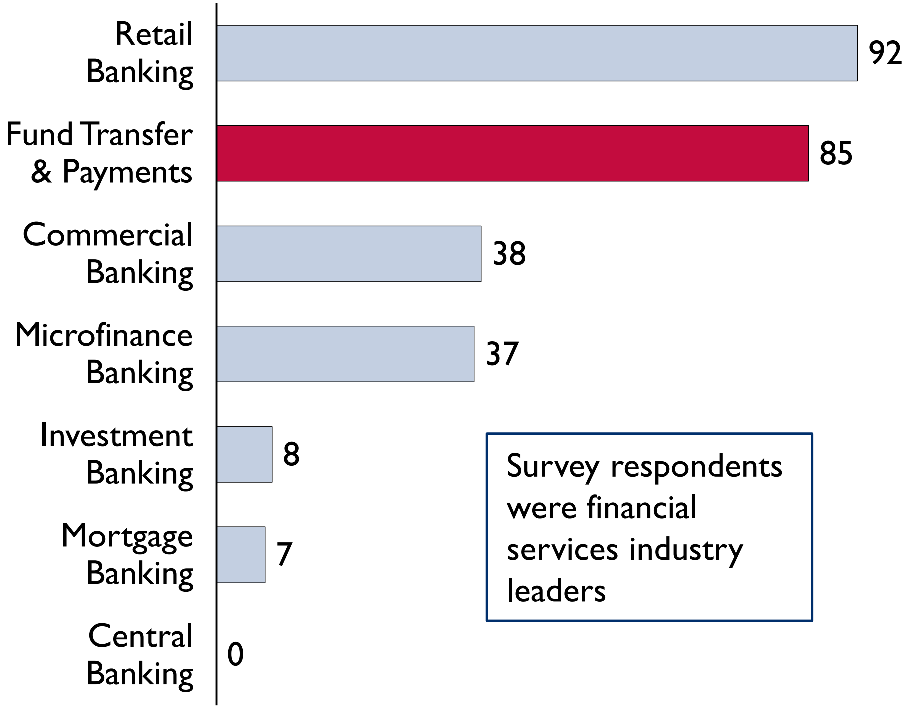
Nigeria has seen the highest levels of FinTech deal activity by value as well as number of deals

Aggregate value and number of major African FinTech deals, January 2010 - June 2016
(USD millions, number of deals)



One of the primary disruption by FinTech companies is anticipated to be in the payments sector

Which part of the sector is likely to be the most disrupted by FinTech over the next 5 years?
(Percentage of respondents choosing each area of disruption)



Survey respondents were financial services industry leaders

Source: "FinTech in Nigeria: Understanding the value proposition", KPMG, November 2016; Nigeria FinTech Survey 2017, PwC

This is reinforced by the fact that the most significant FinTech investments to date have been in the mobile payments space

Investee	Business category	Investor(s)	Investment date	Value (USD million)
Interswitch Ltd.	Payment switching & mobile payment	• Helios Investment Partners LLP • Adlevo Capital Managers LLC	December 2010	110.00
Vanso International Corporation	Mobile payment	• Interswitch Ltd.	March 2016	75.26
Interswitch Ltd.	Payment switching & mobile payment	• International Finance Corporation	September 2011	20.00
Venture Garden Nigeria	Fintech holding company	• Convergence Partners Management	September 2015	20.00
Pagatech Ltd.	Mobile payments	• Omidyar Network • Capricom Investment Group LLC • Goodwell Investments BV • Alitheia Capital • JCS Investments Ltd. • Acumen Fund • Endowment ARM	October 2015 June 2012	13.00 8.00
Pagatech Ltd.	Mobile payments	• Adlevo Capital Managers LLC	August 2013	2.00
Flutterwave	Payment switching	• Y Combinator	June 2016	0.12
		• VC FinTech Accelerator	May 2016	0.05

Source: "FinTech in Nigeria: Understanding the value proposition", KPMG, November 2016; Nigeria FinTech Survey 2017, PwC

There are four important actors in the Digital Financial Services (DFS) system, which provide a framework for understanding the roles of different players in the Nigerian landscape

Core Business			Extended Enterprise
(Sub) Agent	**Super-Agent**	**Financial Service Provider (FSP) or Mobile Money Operator (MMO)**	**Infrastructure provider**

Consumer

(Sub) Agent

- Typically the client-facing mobile money agent, who is sub-contracted to a super-agent network
- Provide financial services on behalf of the MMO
- They are non-exclusive and can therefore provide agent banking to as many MMOs as they can accommodate

Super-Agent

- Entity contracted by the mobile money operator to maintain the agent network
- May sub-contract other agents to deliver

Financial Service Provider (FSP) or Mobile Money Operator (MMO)

- Entity in charge of providing financial, clearing and settlement services to the agent banking ecosystem

Banks

MNO (PSB)

Corporates

Infrastructure provider

- Responsible for providing platforms to enable switching, processing, clearing and settlement facilities for mobile money and agent banking

MNO

Switches
Clearing House
PTSP[1]
PSSP[2]
Third Party Processor
Card scheme

1. PTSP is Payment Terminal Solution Provider/provider of POS machines
2. Payment Services Solution Providers

Trade-offs exist when choosing between different types of payment collection providers; PSBs and agent networks are most accessible to customers at the bottom of the pyramid

Consumer-related factors

	Agent Network	MMO	PSB	Infrastructure Provider
Accessibility	● • Physical locations across the country • Accept cash	◐ • Relatively low due to limited consumer education and low national uptake (~1%) • Typically requires agent interface/intervention	◕ • Good national coverage through airtime vendors, who will also provide PSB mobile money top-up • Likely to have USSD interface	◐ • Relatively low • Client must be somewhat tech-savvy to download & use provider app
Affordability	○ • Relatively high transaction fees charged to incentivize agents, especially in remote areas	◌	◕ • TBD • Likely that USSD charges will be waived & transaction fees minimal	● • Transactions made on infrastructure provider's platform/app typically free
Opportunities for customer acquisition	● • High • Agents are client-facing & can cross-sell SHS products to customers • Non-exclusivity of agents means that agents can offer competitors' products	○ • Low • Most MMOs are bank-led, and uptake driven by customers	● • High • MNO can send marketing messages to all network users & advertise products through airtime vendors	○ • Low • Platform traffic restricted to people who have made a conscious decision to use the platform (via mobile app or website)

● Favourable ○ Unfavourable ◌ Unknown

Trade-offs exist when choosing between different types of payment collection providers; infrastructure providers are most cost-competitive for merchants

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Merchant-related factors

	Agent Network	MMO	PSB	Infrastructure Provider
Transaction fees	• Relatively high fees due to human resources component and need to incentivize agents			• Lowest fees (under 2% per transaction)
Cost of integration	• Varies • Highly negotiable		• PSBs likely are the largest MMOs in the country & will have leverage over merchants due to their brand power	• Varies: most of the popular providers provide free integration
Ease of integration	• Integration is simple and quick (only to list merchant as an option on agent app) • Training of agents in merchant's products may take longer	• Should be straightforward: simply have the merchant registered as one of the bill pay options	• Should be straightforward: simply have the merchant registered as one of the bill pay options	• Typically have the capacity and inhouse resources (staff and standardized manuals) to support integration • Depending on provider platform compatibility with merchant, integration may take time
Other considerations	• Distribution of products through the agent network can be negotiated, for a commission • Agents, if-well managed, can provide valuable feedback & insights gained from interactions with customers			

Nigeria has a vibrant DFS ecosystem with 40+ market participants and many prominent players

Mobile Money Operators		Payment Services Banks[1]	Infrastructure Providers						Super Agents
MMOs (Bank-led)	MMOs (Non-bank led)		Switches	Clearing Houses	Card schemes	Third Party Processors	Payment Solution Service Provider	Payment Terminal Service Provider	
FCMB Fidelity Stanbic IBTC Sterling Bank access Firstmonie Zenith Fortis Ecobank GTBank MobileMoney	MKudi ReadyCash cellulant Chams Contec Global Eartholeum etranzact fetswallet Paycom Teasy mobile VCash paga Visual ICT konga Zoto	MTN airtel 9mobile glo	ARCA Chams Switch Interswitch XPRESS etranzact Unified Payments e-rg (e-revenue gateway Ltd)	NIBSS	American Express VISA mastercard Verve	etranzact EMP Unified Payments XPRESS	etranzact Interswitch Flutterwave Parkway PayAttitude cellulant PayU SystemSpecs Unified Payments Upperlink VentureGarden Group XPRESS Infiniti	NetPlusDotCom Bringq Africa citiSERVE Computer Warehouse Group eTOP Fidesic Nigeria Wi-PAY Global Accelerex Interswitch IntelliFin easyfuel XPRESS itex Chams Globasure UP Grand Towers netop	Capricorn Digital Innovectives Interswitch

Notes: 1. Not yet licensed by CBN; High likelihood for Telco to obtain PSB license in 2019

Process for selecting a payment solution provider

We profiled nine payment providers, organized into three categories: agent networks, mobile money operators and infrastructure providers…

	Company	Agent network	Mobile Money Operator (MMO)	Infrastructure provider
1	paga	✓	✓	
2	Swifta	✓	✓	
3	Interswitch Financial Inclusion Services	✓		
	Interswitch			✓
4	access	✓	✓	
5	FirstBank Since 1894	✓	✓	
6	Stanbic IBTC Bank A member of Standard Bank Group	✓	✓	
7	NIBSS			✓
8	Flutterwave			✓
9	SANEF	✓		

- Primary basis for provider selection was their ability to reach SHS companies' target demographic (largely rural, low-income, unbanked population), followed by affordability (from the consumer-perspective)
- Most providers do not fit into a single type of payment collection provider, but are a hybrid of the different types
- Hybrid nature allows SHS companies to optimize/maximize advantages associated with each different provider type

Note:
Data obtained through secondary research and provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validating data reported with field data.

…and performed a side-by-side comparison of their leading payment solutions, to develop the Payment Collection Provider Matrix, a tool to help SHS companies choose amongst competing providers

Company	Agent network	MMO	IP	Affordability	Reach	Integration fees	Transaction fees (payable by merchant)
paga	✓	✓		🟡	🟢	🟡	🟢
Swifta	✓	✓		No data	🟢	🔴	🔴
Interswitch Financial Inclusion Services	✓			🟢	🟢	🟡	🟡
Interswitch			✓	🟡	🟢	🟡	🟢
access	✓	✓		No data	🟡	No data	🟢
FirstBank Since 1894	✓	✓		🟡	🟢	🟡	🟢
Stanbic IBTC Bank A member of Standard Bank Group	✓	✓		No data	🟢	No data	No data
NIBSS			✓	🟢	🟡	🟢	🟢
Flutterwave			✓	🟢	🔴	🟢	🟢
SANEF	✓			No data	🟢	🟡	No data

*legend included on the following page

In developing the Payment Collection Provider Matrix, we assessed players against four criteria: customer affordability, reach, integration cost and merchant fees

Affordability (Customer fees)	Reach	Integration cost	Merchant fees
• Assesses affordability of using a certain payment provider from a customer perspective, looking at what convenience fees may apply for using the service	• Looks at reach or accessibility of a payment provider from two perspectives: 1. **Size of agent network or number of physical touch-points:** Useful to assess national footprint of the payment provider and how accessible the provider is for bottom-of-the-pyramid customers 2. **Convenience:** Depending on the customer demographic, convenience, such as being able to access the payment portal remotely or using USSD technology may be more important than the number of brick-and-mortar outlets	• Upfront cost that merchant (SHS company) would have to pay to connect to, or be listed on, the payment platform	• Fees incurred by the merchant (SHS company) on a transaction-by-transaction basis • Typically charged as a percentage of the gross transaction amount that the customer is paying

Legend for Payment Collection Provider Matrix

	Affordability (Customer fees)	Reach	Integration cost	Merchant fees
	Free (no fees payable by customer)	10,000+ agents	Free	<3% of gross transaction amount
	N20-N100 per transaction	0-10,000 agents	US$ 500 – 2,000	3-5% of gross transaction amount
	>N100 per transaction	No agent network	> US$ 2,000	>5% of gross transaction amount
	Unknown	Unknown	Unknown	Unknown
	Estimate	Estimate	Estimate	Estimate

The tool can be used in four simple steps to develop a relative ranking of Payment Collection Providers for a particular use case

1	Determine the customer profile of your target demographic and consider what the most effective ways to reach them may be
2	Rank the criteria for selecting your payment provider in order of importance, choosing from the below: i. Reach (physical footprint) ii. Reach (convenience) iii. Customer affordability iv. Transaction fees (payable by merchant) v. Integration cost
3	Refer to the Payment Collection Provider Matrix to systematically eliminate providers based on your ranking of selection criteria *(explained in detail in upcoming pages)*
4	List the remaining providers in terms of suitability for your needs

*Example following the four-step process given on following pages

Illustrative example
Results are not final

An example of how we used the Payment Collection Provider Matrix to find the best matched providers for different system sizes

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1 Determine the customer profile of your target demographic and consider what the most effective ways to reach them may be

	Small systems (3-10 W)	Mid-sized systems (11-20 W)	Large systems (>50 W)
Income level	• Low income/ • bottom of the pyramid	• Low income/ • bottom of the pyramid	• Lower middle income
Geographic distribution	• Rural and Northern states	• Nationwide	• Peri-urban to urban • Central to South
Mobile phone ownership	• May or may not own a mobile	• Highly probability of ownership	• High ownership rates, maybe even smartphones
Effective payment channels	• Agent network offering additional distribution capabilities	• Agent network • USSD[1]	• USSD • Agent network or bank branch • Mobile app/website • ATM/POS

2 Rank the criteria for selecting your payment provider in order of importance

Note: Ranking criteria for each system type are illustrative and may vary according to developer requirements

Small systems	Mid-sized systems	Large systems
1 Customer affordability	1 Reach (footprint)	1 Reach (convenience)
2 Reach (footprint)	2 Customer affordability	2 Integration cost
3 Transaction fees (payable by merchant)	3 Transaction fees (payable by merchant)	3 Customer affordability
4 Integration cost	4 Integration cost	4 Transaction fees (payable by merchant)

1. Unstructured Supplementary Service Data (USSD): mobile technology that allows users to use quick codes or short codes to send instructions. Often used for airtime recharge or balance checking and takes the format * quick code #

Illustrative example
Results are not final

An example of how we used the Payment Collection Provider Matrix to find the best matched providers for different system sizes (focusing on small systems 3-10 W)

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3

Refer to the Payment Collection Provider Matrix to systematically eliminate providers based on your ranking of criteria

a

- Since affordability ranked highest for our customer segment, we refer to the affordability column to eliminate all providers who performed relatively poorly along this metric (rated yellow and below)
- This would eliminate Paga, Interswitch and Firstbank

b

- Next we refer to the reach column to eliminate providers with relatively low reach
- This would eliminate NIBSS and Flutterwave

Company	Agent network	MMO	IP	Affordability (Customer fees)	Reach (agent network size, channels)	Integration fees	Transaction fees (payable by merchant)
paga	✓	✓		🟡	🟢	🟡	🟢
Swifta	✓			No data	🟢	🔴	🔴
Interswitch Financial Inclusion Services	✓			🟢	🟢	🟡	🟡
Interswitch			✓	🟡	🟢	🟡	🟢
access		✓		No data	No data	No data	No data
FirstBank	✓	✓		🟡	🟢	🟡	🟢
Stanbic IBTC Bank		✓		No data	No data	No data	No data
NIBSS			✓	🟢	🟡	🟢	🟢
Flutterwave			✓	🟢	🔴	🟢	🟢
SANEF	✓			No data	🟢	🟡	No data

c

- We could keep eliminating providers based on the ranking of our criteria
- We also remove any providers with insufficient data to make any determinations or perform further investigation of them if we believe they may be promising matches
- We would then end up with an "absolute" best match or could rank the providers in terms of suitability

Illustrative example
Results are not final

An example of how we used the Payment Collection Provider Matrix to find the best matched providers for different system sizes

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Outcome if the Payment Collection Provider Matrix is used to determine the best providers for all system sizes

4 Rank the remaining providers in terms of suitability for your needs

Small systems (3-10 W)	Mid-sized systems (11-20 W)	Large systems (>50 W)
1. SANEF[1] 2. Interswitch Financial Inclusion Services Quickteller Paypoint 3. Paga 4. Swifta	1. Interswitch Financial Inclusion Services Quickteller Paypoint 2. Paga 3. Swifta	1. Interswitch Quickteller Premium + Paypoint bundle 2. Flutterwave (customer must be banked) 3. NiBSS (customer must be banked)

1. Currently unclear if merchant accesses SANEF directly, or goes through one of the participating Super-Agent networks

Profiles of select payment solution providers

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Paga: Offers a single payment solution that offers the merchant a national footprint, leveraging one of Nigeria's largest agent networks

paga

Customer affordability	Customer reach	Integration cost	Merchant fees
Yellow	Green	Yellow	Green

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees[1]	Customer fees[2]
paga ePayment Solution	• Payment collection via all online/Internet, USSD and mobile channels • Includes support for cash, debit cards and mobile money wallet payments, among other e-payment value sources	1. Agent 2. Mobile app (Paga) 3. Website (Paga) 4. USSD	19, 143	• Negotiable • Waived for sufficient volumes	• 1.5% of gross transaction amount • 5% VAT of transaction fee	N501 - 5,000,000: N100 + 5% VAT

1. Applies to payments N501 and above; assuming most bills will be >N500
2. Tiered fee structure in effect. Assume all payments >N500

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Swifta: OmniBranches offers one of the country's largest agent networks, though has the downside of high integration cost for the merchant and high transaction fees

Swifta

Customer affordability	Customer reach	Integration cost	Merchant fees

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees	Customer fees
OMNIBRANCHES TRANSACT ANYWHERE	Managed agent network that provides last-mile services on behalf of financial services companies, digital goods merchants, utilities, service providers through a network of agents Services include: • Cash-in, cash-out services (deposit into own or third party account & cash withdrawal) • Funds transfer • Solar power subscription payment (off-grid electric, BBox, Greenplanet, Oolusolar etc.)	• Agent • USSD (expected launch in Q3 2019)	20,000	N 1.5 – 3 million	5%	**TBD**

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Interswitch: Recommendation to integrate into Quickteller Premium, which gives access to Paypoint agent network, all of Nigeria's ATMs, website and mobile app

Customer affordability	Customer reach	Integration cost	Merchant fees
Green	Green	Yellow	Yellow

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees	Customer fees

Quickteller Paypoint	• Interswitch Financial Inclusion Services (IFIS) agent locations
	• Provide services including:
	  • Airtime recharge
	  • **Bills payment/settlement**
	  • Funds transfer
	  • Cash-in, cash-out etc.
		1. Agent	18,149	N 150,000	3.5% of gross transaction amount	N 200 account opening fee

Quickteller Premium	• Web portal and mobile app for making payments	1. Website (Quickteller) 2. Mobile app (Quickteller) 3. ATM	Leverages Quickteller Paypoint network	N 500,000	1.5% of gross transaction amount[1]	N 100 per transaction

0. Highlighted cells are what would likely be included under the Quickteller Premium proposal
1. Capped at N 2,000
2. Unclear if integration cost for Quickteller Paypoint is waived if merchant integrates into Quickteller Premium (Quickteller Premium members have access to Quickteller Paypoint's agent network as a value-add). Assume Paypoint fee (3.5%) applies whenever customer pays through agent locations, even if merchant is under Quickteller Premium subscription (1.5%)

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Interswitch Financial Inclusion Services (IFIS) has 18,000+ Quickteller Paypoints across the country

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Distribution of Quickteller Paypoint outlets

(Number of outlets in each state, percentage of outlets in each geopolitical zone)
100% = 18,149

2,509 (14%) North West

Bauchi	146
Jigawa	142
Kaduna	798
Kano	942
Katsina	353
Kebbi	106
Sokoto	13
Zamfara	9

1,786 (10%) FCT

FCT	1,786

211 (1%) North East

Adamawa	85
Borno	10
Gombe	30
Taraba	75
Yobe	11

1,878 (10%) North Central

Benue	142
Kogi	147
Kwara	728
Nasarawa	288
Niger	120
Plateau	453

1,125 (6%) South East

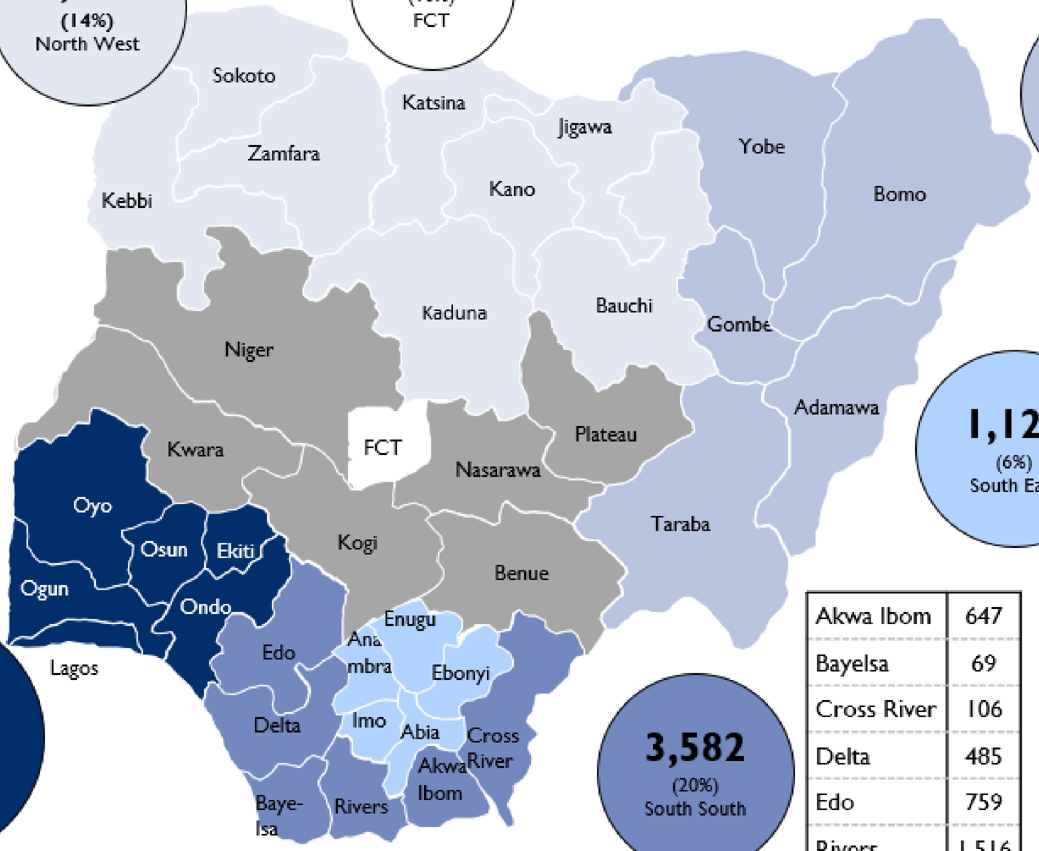
Abia	127
Anambra	202
Ebonyi	34
Enugu	570
Imo	192

7,058 (39%) South West

Ekiti	135
Lagos	4,239
Ogun	826
Ondo	230
Osun	356
Oyo	1,272

3,582 (20%) South South

Akwa Ibom	647
Bayelsa	69
Cross River	106
Delta	485
Edo	759
Rivers	1,516



Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

First Bank: First Bank offers a mobile money solution, leveraging one of Nigeria's Super Agent networks to maximise reach

Customer affordability | Customer reach | Integration cost | Merchant fees

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees	Customer fees
Firstmonie	• First Bank of Nigeria's channel to broaden access to financial services within the low income segment (popularly referred to as the unbanked and under-banked population)	1. Agent 2. Mobile app (firstmonie)	17,000+	**Unknown**	**TBD: Assume around 1.5% similar to Paga & Flutterwave**	Range between N100 – 300, depending on transaction amount Typically N100 + 5% VAT of transaction fee

1. Information gathered from interview with company representatives
2. Distribution is not offered as a value-added service
3. Have signed an agreement with Azuri technologies, scope of which is unknown, but prohibits co-branding with other SHS companies. The agreement, however, does not force exclusivity on payments & collections

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

NIBSS: mCash is completely free of charge for merchants and highly subsidized for customers, making it the cheapest way to collect payments from *banked* customers

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Nigeria Inter-Bank Settlement System

Customer affordability	Customer reach	Integration cost	Merchant fees
Green	Yellow	Green	Green

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees	Customer fees
mCash	• Solution for merchants to receive payments from customers using USSD • Payer dials *402*Sellercode*Amount# • Leverages the NIBSS Instant Payments infrastructure (NIP) for immediate fund delivery to merchants' accounts	1. USSD	Not applicable	Free[1]	Free[2]	N 20-25 per transaction[3]

1. Stamp duty of N 50-100 may apply if merchant applies for seller short code through their bank branch. Seller short code assigned through USSD channel is free
2. For all intents and purposes, merchant fees will be zero. Transactions above N10,000 attract a N50 fee, but most SHS bills will be below that
3. USSD charges are waived, but transaction fee applies

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

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Access Bank: Access Bank offers agency banking services and is currently piloting NFC technology, which works without internet connectivity or mobile signal, in the northern states

access

Customer affordability	Customer reach	Integration cost	Merchant fees

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees	Customer fees
access Agency Banking	• Agency banking platform with agents at outlets across the country	• Agent	• 6,818 agents exclusive to Access Bank • 89,000 MMO & Sub-Agents through SANEF	Unknown	**Unknown: Assume around 1.5% similar to Paga & Flutterwave**	Unknown
access NFC Pilot	• Near-field communication (NFC) technology, which allows chips in payment and reader devices to exchange encrypted data when in close contact to complete payments • Technology works even when offline (without internet or mobile network) • Access Bank to work with third parties to issue NFC-enabled pre-paid cards • Currently in pilot phase in northern states with player in agricultural value chain	• POS • Agent	6,818	Unknown	**Unknown: Assume around 1.5% similar to Paga & Flutterwave**	Unknown

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Access Bank has just under 7,000 agents spread across the country, with the majority concentrated in the South West

Distribution of Access Bank Agents

(Number of agents in each state, percentage of agents in each geopolitical zone)

100% = 6,818

745 (11%) North West

Bauchi	31
Jigawa	16
Kaduna	405
Kano	218
Katsina	37
Kebbi	10
Sokoto	16
Zamfara	12

766 (11%) FCT

Abuja	93
FCT	673

585 (9%) North East

Adamawa	66
Borno	111
Gombe	20
Taraba	367
Yobe	21

892 (13%) North Central

Benue	197
Kogi	81
Kwara	37
Nasarawa	284
Niger	254
Plateau	39

415 (6%) South East

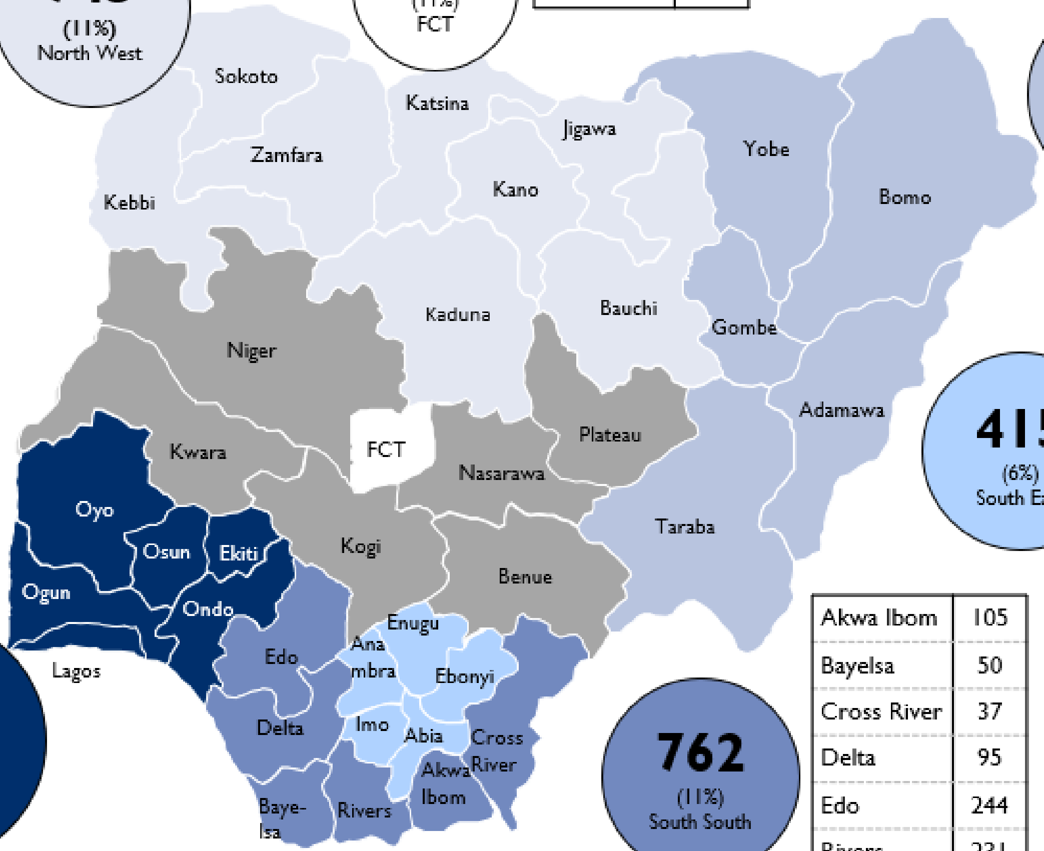
Abia	170
Anambra	37
Ebonyi	49
Enugu	76
Imo	83

2,658 (39%) South West

Ekiti	54
Lagos	1,697
Ogun	396
Ondo	66
Osun	205
Oyo	235

762 (11%) South South

Akwa Ibom	105
Bayelsa	50
Cross River	37
Delta	95
Edo	244
Rivers	231



Source: Access Bank Management (March 2019)

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Stanbic Bank: Stanbic offers a suite of payment channels through their agency banking including mobile app, USSD, ATM and agent channels

Customer affordability

Customer reach

Integration cost

Merchant fees

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees	Customer fees
Stanbic IBTC Bank – A member of Standard Bank Group **Agency Banking**	• Merchant is placed on various platforms operated by Stanbic (see customer interface options) • Each payee is given a unique identifier as a reference for their payments (may be SHS device number)	• Mobile app • USSD • Agent • ATM	10,128	Unknown	Unknown	Unknown

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Stanbic Bank has just over 10,000 agents country-wide, with a strong presence in the North West, North East and North Central zones

Distribution of Stanbic Bank Agents

(Number of agents in each state, percentage of agents in each geopolitical zone)

100% = 10,128

4,770 (47%) North West

Bauchi	878
Jigawa	421
Kaduna	116
Kano	1,682
Katsina	358
Kebbi	138
Sokoto	119
Zamfara	1,058

66 (1%) FCT

FCT	66

1,843 (18%) North East

Adamawa	322
Borno	86
Gombe	1,020
Taraba	156
Yobe	259

1,752 (17%) North Central

Benue	28
Kogi	56
Kwara	371
Nasarawa	53
Niger	1,036
Plateau	208

166 (2%) South East

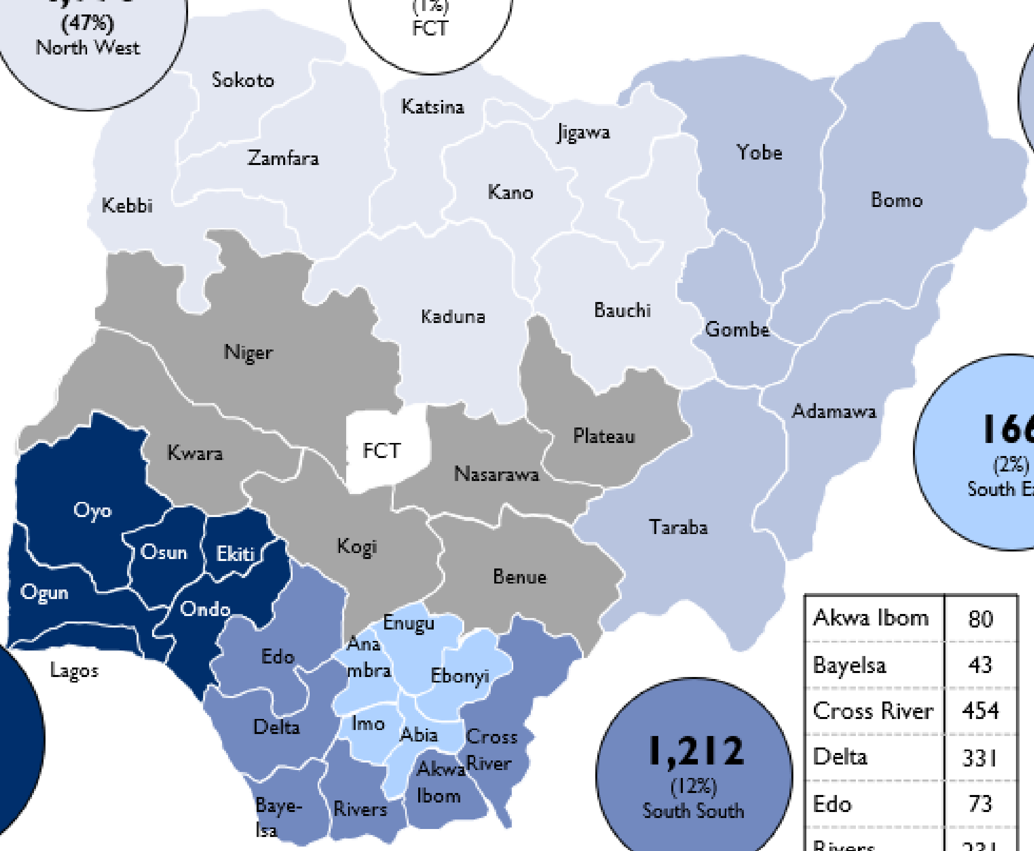
Abia	53
Anambra	27
Ebonyi	43
Enugu	12
Imo	31

319 (3%) South West

Ekiti	33
Lagos	195
Ogun	37
Ondo	11
Osun	9
Oyo	34

1,212 (12%) South South

Akwa Ibom	80
Bayelsa	43
Cross River	454
Delta	331
Edo	73
Rivers	231



Source: Stanbic Bank Management (March 2019)

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Flutterwave: Products offer free integration and low fees for merchants, however, uptake is limited to narrow customer segment that is comfortable transacting on apps

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Flutterwave

Customer affordability | Customer reach | Integration cost | Merchant fees

Product	Description	Customer interface	Agent Network	Integration cost	Merchant fees	Customer fees
rave payment gateway	• White-label acquiring platform that allows merchants to collect payments via USSD, direct bank account, local & international cards	1. Mobile app (merchant) 2. Website (merchant) 3. Call centre 4. POS 5. USSD	1,000[1]	Free	Local cards & USSD: • 1.4% of gross transaction amount[2]	Using platform: • Free Through an agent: • Tiered fee structure (exact fees to be negotiated, however will be capped at N500)
barter mobile app	• Web portal/mobile app for consumer payments, sending and borrowing money • Merchant registers as one of the payment options	1. Mobile app (barter) 2. Agent				

1. Merchant may be able to grow this number by negotiating separate integration agreements to with agent networks who use Flutterwave products
2. Capped at N 2,000

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

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Shared Agent Network Expansion Facility (SANEF): An initiative to increase financial inclusion through an aggressive roll-out of 500 thousand agents by 2020

- SANEF is an initiative co-sponsored by the Central Bank of Nigeria (CBN), deposit money banks, licensed mobile money operators and super agents
- Designed to extend financial services to 60 million unbanked Nigerians by deepening access to mobile and digital financial products and services
- Entails an aggressive roll out of a 500,000 agent network in under-served urban and rural areas, with priority in the Northern geo-political zones where financial exclusion is worst
- Agents will offer basic financial services, such as Cash-in, Cash-out, funds transfer, bill payments, airtime purchase and government disbursements

Targets

	2018	2020
Access points (agents)	70,000	500,000
Bank accounts	34 million	70 million

Agent distribution
(Percentage of agents)

North	20
North East	30
North West	30
South	7.5
South East	7.5
South West	5

Customer affordability | Customer reach | Integration cost | Merchant fees

MMO Partners

cellulant (life is mobile), etranzact, paga

Super Agent Partners

Innovectives (we innovate the future), Capricorn Digital (Digital Solutions and Distribution), Interswitch (FINANCIAL INCLUSION SERVICES), XPRESS (PAYMENT SOLUTIONS LIMITED), UNIFIED PAYMENTS (...innovations that work for you), INLAKS (own tomorrow.)

Note: Data obtained through research & provider interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Appendix

Side-by-side comparison of Payment Collection Providers (data)

Company	Agent network	MMO	IP	Affordability (Customer fees)	Reach (agent network size, channels)	Integration fees	Merchant transaction fees
paga	✓	✓		N 100 per transaction	19, 143 USSD, Agent	Negotiable	1.5%
Swifta	✓	✓		Unknown	20,000 Agent	~USD 6,000	~5%
Interswitch Financial Inclusion Services	✓			Free	18,149 Agent	N 150,000	3.5%
Interswitch			✓	N 100 per transaction	18,149 Agent, ATM	N 500,000	1.5%
access	✓	✓		TBD	6,818 Agent, POS	TBD	TBD
FirstBank Since 1894	✓	✓		TBD	10,000 Agent	TBD	TBD
Stanbic IBTC Bank A member of Standard Bank Group	✓	✓		TBD	10,128 Agent	TBD	TBD
NIBSS			✓	N 20 per transaction	No network USSD	Free	Free
Flutterwave			✓	Free	1,000 agents Mobile app	Free	1.4%
SANEF	✓			Unknown	500,000 (2020 ambition) 150,000 (Q4 2018 target)	TBD	TBD

Note: Data obtained through research & providers interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

A comparison of Stanbic and Access Bank's agent presence in different geopolitical zones suggests that Stanbic would be the preferred provider for collections in northern states

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Agent network presence in different geopolitical zones

(Number of agents)

	Stanbic IBTC Bank (A member of Standard Bank Group)	access	Multiple[1]
North West	4,770	745	6.4
North Central	1,752	892	2.0
North East	1,843	585	3.2
South West	319	2,658	8.3
South South	1,212	762	1.6
South East	166	415	2.5
FCT	66	766	11.6

x Multiple <5x

x Multiple >5x

Preferred collections provider in each state

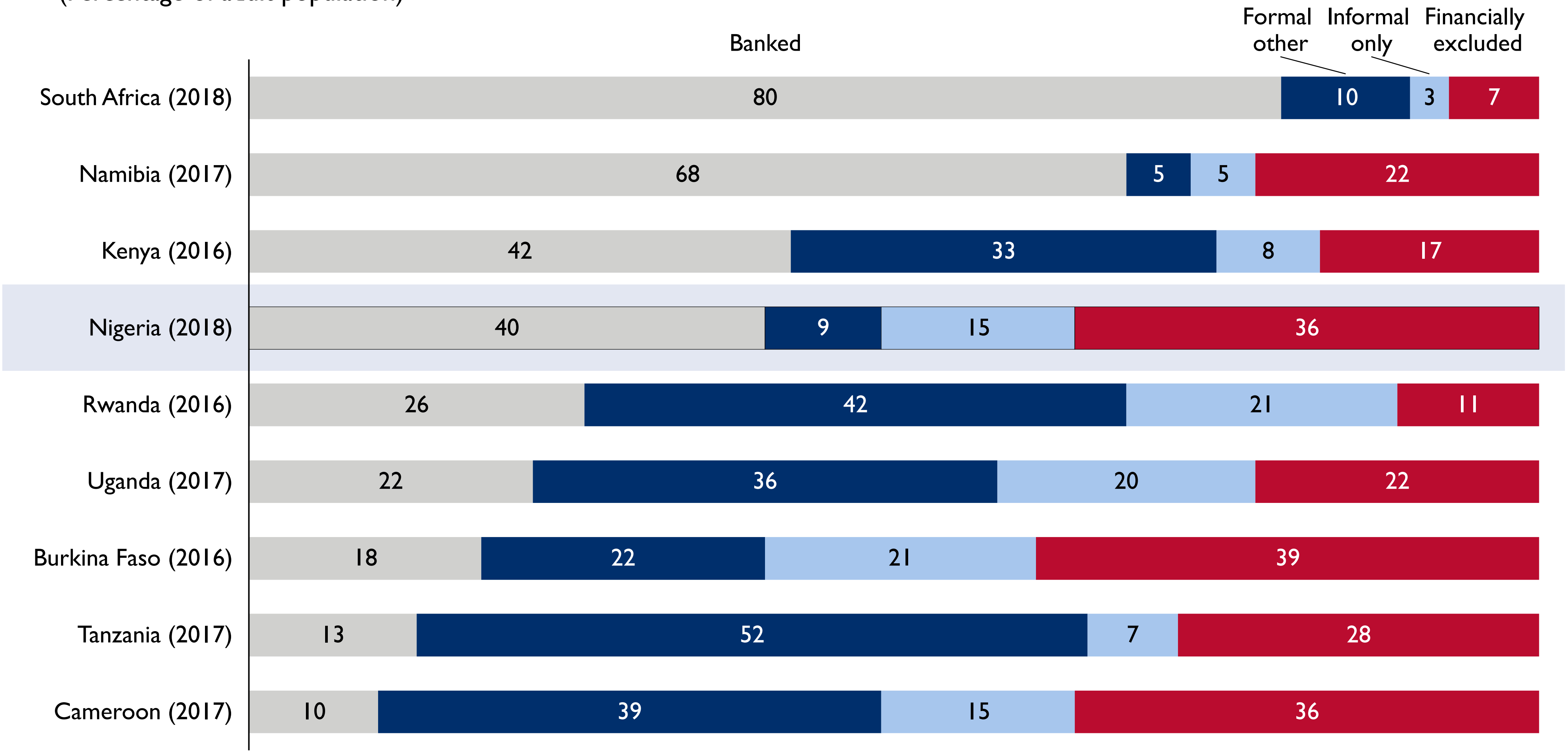
- SHS providers may consider using different payment collection providers in different regions of the country, depending on the strength of the providers' product offering and size of their agent network
- A comparison of the agent networks of Stanbic and Access Bank in different regions suggests:
  - Stanbic would be the preferred provider in the northern states, due to a larger agent presence, with the size of its agent network ranging from two to six times that of Access Bank depending on the region
  - Access Bank has a larger agent footprint than Stanbic in the southern states, and would be the preferred provider in the south

1. The multiplicative factor of the provider with largest number of agents divided by provider with least number of agents

Note: Data obtained through research & providers interviews have shown some variation with field data obtained from agents and sub-agents. The team is in the process of validation

Nigeria's financial inclusion rates are on par with Burkina Faso and Cameroon and significantly lag behind South Africa and Kenya

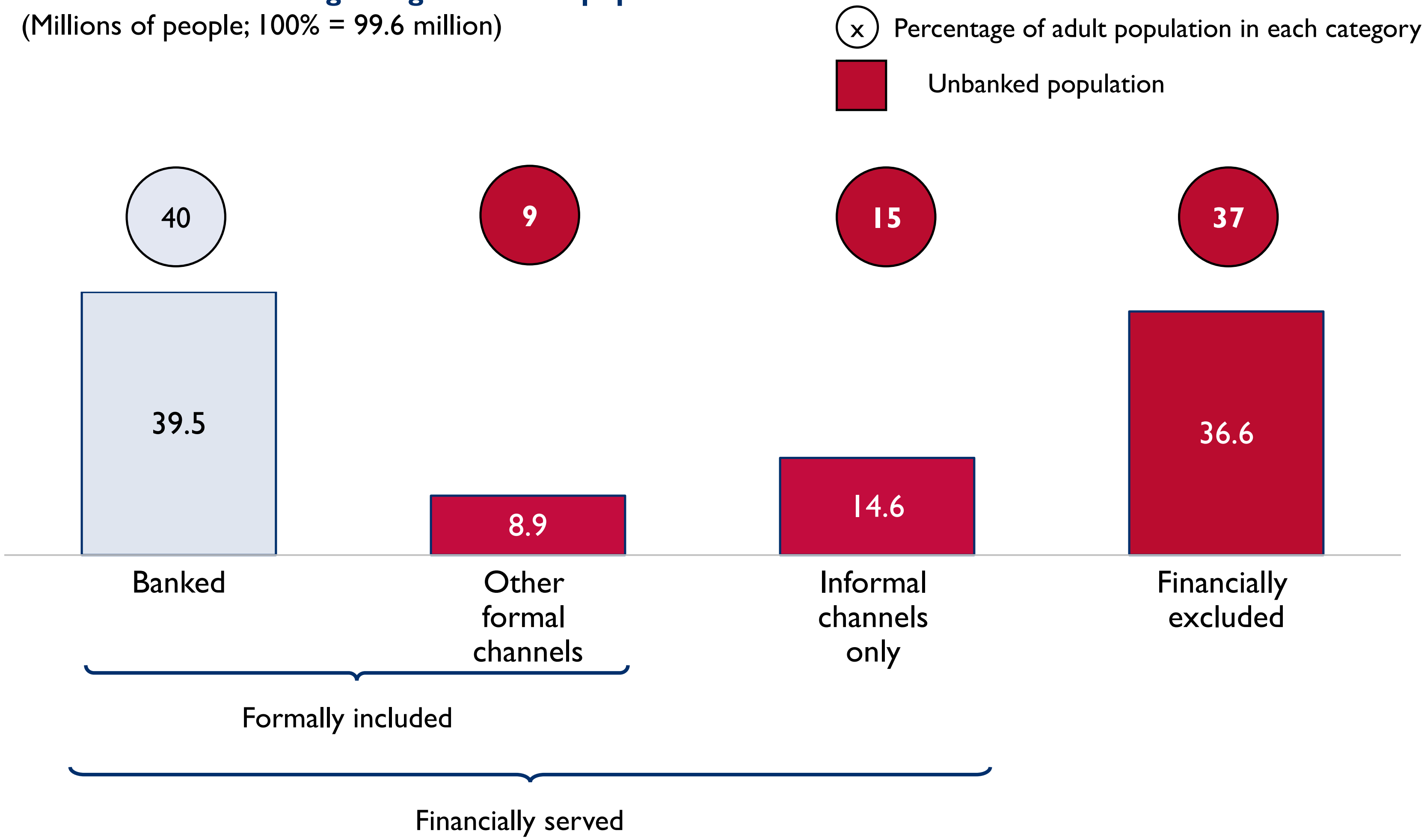
Comparison of financial access in select sub-Saharan African countries, 2016-18
(Percentage of adult population)



Source: EFInA Access to Financial Services in Nigeria Survey, 2018

Nigeria has one of the highest unbanked populations in Sub-Saharan Africa (60% of the adult population) making it difficult to conduct financial transactions

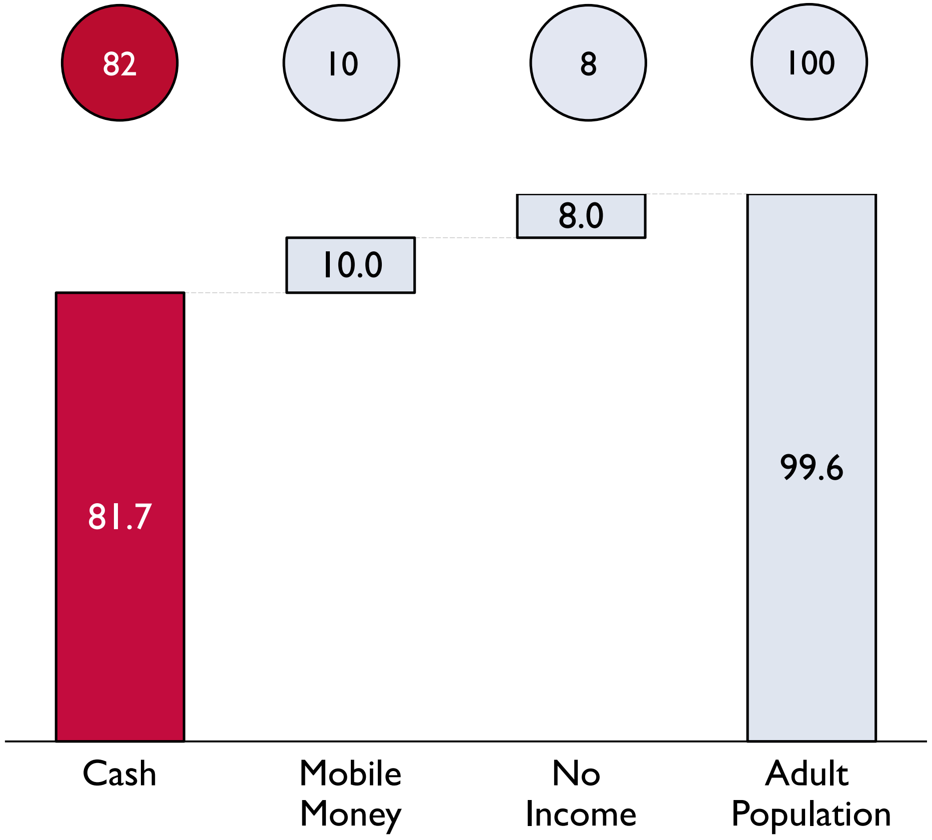
Financial access amongst Nigerian adult population
(Millions of people; 100% = 99.6 million)



Source: EFInA Access to Financial Services in Nigeria Survey, 2018

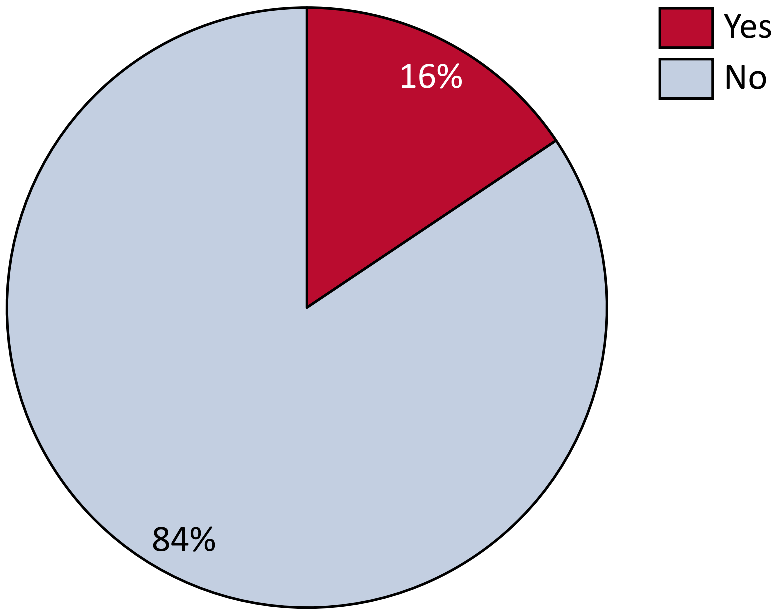
The market is still heavily reliant on cash with over 80% of adults receiving their income in cash and less than one fifth of adults making a digital payment in the past year

How Nigerian adults receive their income
(Millions of people; 100% = 99.6 million)



x Percentage of adult population in each category

Nigerian adults who made at least one digital payment in the past 12 months
(Percentage; 100% = 99.6 million)



Source: EFInA Access to Financial Services in Nigeria Survey, 2018

Although the banked population is growing, a significant proportion of the population remains excluded, and unaware of alternative means of accessing financial services (mobile money & agency banking)

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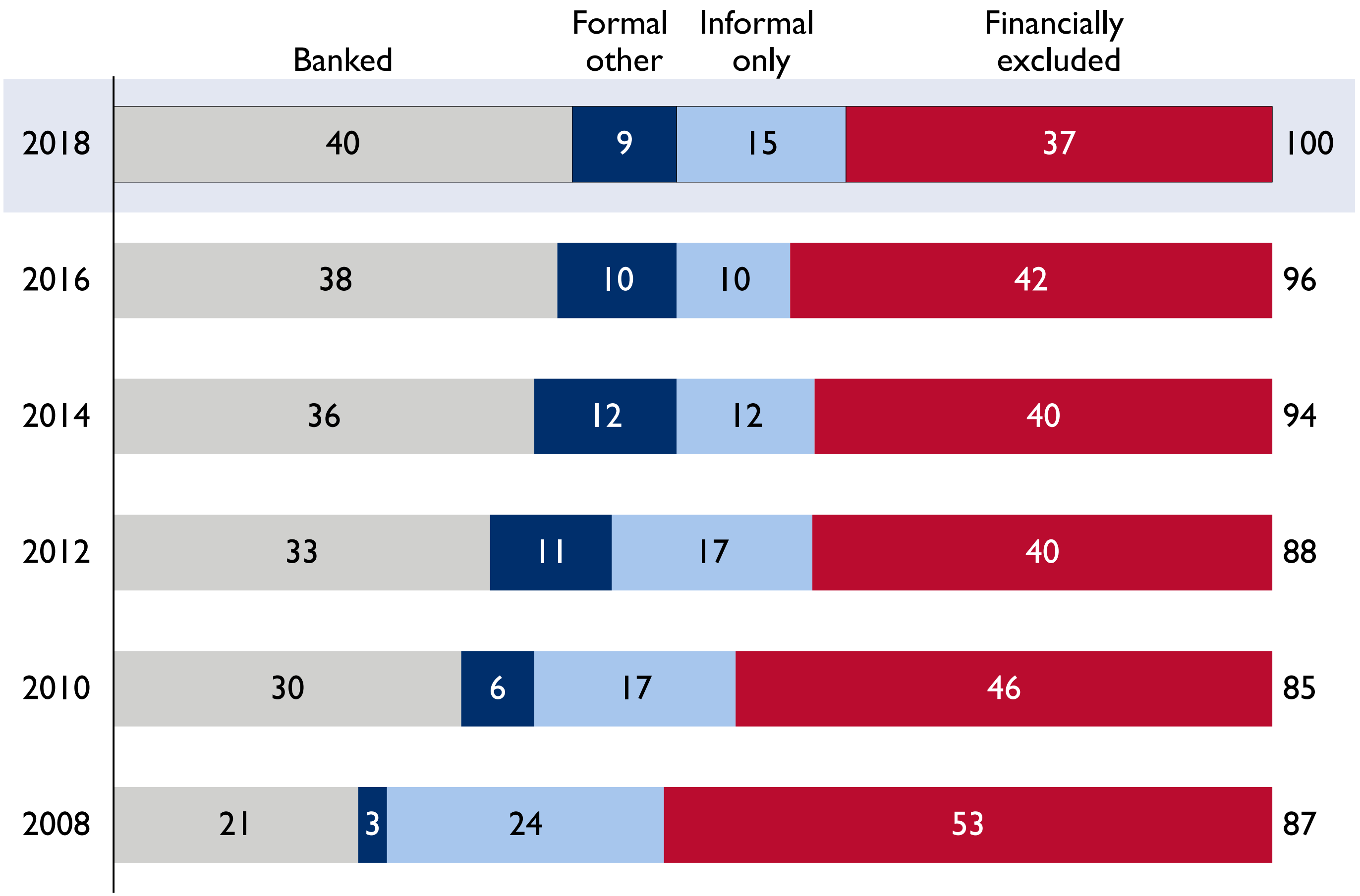
Evolution of Nigerian Financial Access, 2008-18
(Percentage of adult population; adult population in millions)



Awareness of, and access to, non-traditional means of financial service delivery
(Percentage of financially excluded population)
100% ~ 40 million

96% Not aware of mobile money

89% Not aware of banking agents

76% No access to financial institutions

Source: EFInA Access to Financial Services in Nigeria Survey, 2018

Electricity access in East Africa is growing faster than in West Africa, largely driven by high PAYG unit sales, enabled by the high mobile money uptake and mobile payments

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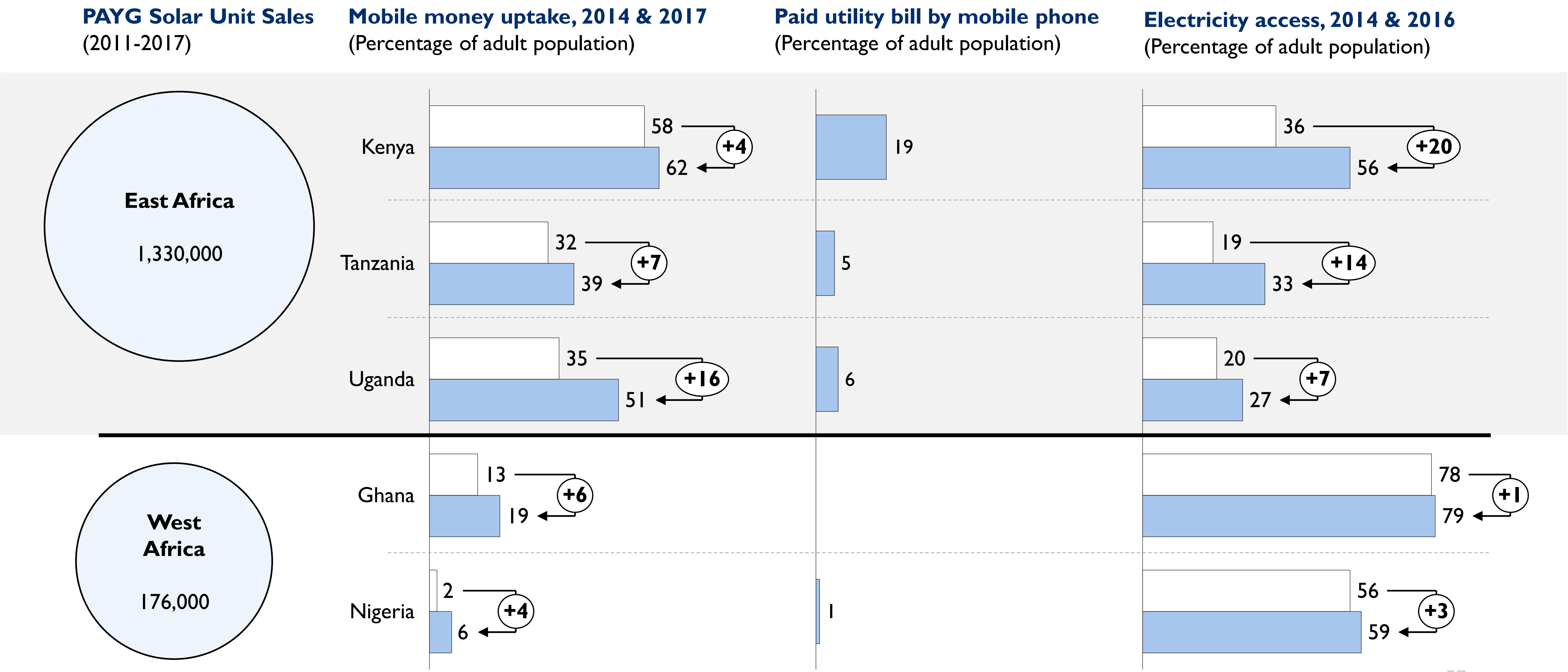

Source: PAYG and the Internet of Things, Mastercard, 2018; Global Findex Database; World Bank Development Indicators (30 January 2019)