

The Digital Financial Services Revolution

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I. The Digital Evolution will Drive Financial Inclusion

Banks are agents of financial Inclusion – They should understand and reach their market niche - Roll out products to reach and sustain their market niche:

- The poor are sensitive to financial products, their price and delivery channels – esp. for economies with segmented markets
- Financial inclusion will ensure savings for asset accumulation and investments to escape cycles of poverty.
- Financial inclusion increases the number of participants – reducing the unit cost of financial services hence more financial inclusion. – Success begets success
- Innovations will generate appropriate financial products and services for the market and even market segments – keeps the market vibrant.
- Financial institutions are embracing innovations - regulation and supervision must continuously evolve to keep pace with innovations in the market place.
- Regulatory capacity and regulatory technology must improve – So Better regulation.

II. Financial Inclusion has a Critical Role

- Inclusive growth works with access to markets – financial markets are critical: savings and investments for asset accumulation for sustainable poverty reduction.
- Banks need deposits to grow their intermediation capacity, lower unit costs and lower barriers to entry
- African economies with nascent financial sectors should recognize that technology will leapfrog financial services development and market access.
- Financial inclusion initiatives should provide an accessible, efficient and effective financial services platform – the Digital technological platform provided by the mobile phone revolution in the last 11 years has shown very positive results
- Digitization solves the problem of physical distance, mass market access will solve the unit costs problems but more importantly it is a platform to innovate and reach the target market niches required.
- Financial inclusion will grow the financial market and the economy

III. Financial Inclusion to Push Financial Development to the Next Level

- Success in FI will drive an endogenous demand to complete the financial infrastructure:
 - Information capital – Credit Reference Bureaus; Deposit insurance; Competition policy; Consumer protection/financial literacy, etc
- FI will drive an endogenous demand for regulatory reforms, regulatory capacity and regulatory technology – this will change the financial inclusion space
- Commercial banks will invest heavily on digital platforms to develop their capacity to grow and to serve their market niches – strong banks can weather shocks and roll out competitive products for their market niches.
- This will make it easier to develop and enlarge the infrastructure for screening and monitoring existing and potential participants in the financial system.
- Successful financial inclusion will improve the environment for monetary policy: forward looking monetary policy will be possible – like Inflation targeting.

III.1 The Digital Financial Services (DFS) Platform

1. Digital Financial Services platform will provide an effective efficient, safe, transparent technological platform for banks to operate in.
 - A retail electronic payments transactions platform in real time has emerged.
2. DFS has supported the development of virtual savings and credit supply platforms: Inclusive finance is good to ignite inclusive growth.
3. DFS platform will supply an infinite possibility to roll out sustainable business models and financial products for banks and for all sectors of the economy.
 - Products for SMEs, the agricultural sector and other sectors can be developed
4. DFS has supported the banking sector with an efficient technological platform to manage entry into the banking sector and MFIs – Unit costs' decline and endogenous developments will ensure further vibrancy

III.2 Digital Revolution has Pushed the FI Frontier

- Digital revolution taking place in developing and emerging economies has produced three important outcomes in the financial sector:
 - First, a retail payments and settlement platform has emerged and governments have joined them!
 - Second, it has enabled financial inclusion - financial services at the doorstep
 - Third, a combination of these two produces a game-changing environment that cuts across all the sectors of the economy and across market segments including the informal markets
- Recent studies like Mckinsey Report show that digital finance services has the potential to:
 - Provide access to financial services for 1.6 billion people in emerging and developing economies
 - Increase the volumes of loans extended to individuals and businesses by \$2.1 trillion
 - Allow governments to save \$110 billion per year by reducing leakage in spending and tax revenues.
- Evidence is thus mounting to show that digital revolution has produced fundamental changes in public policy formulation and has pushed the financial inclusion frontier.

IV. The Kenyan M-Pesa Example

- M-Pesa is an electronic money transfer product that enables users to store value in their mobile phone or mobile account in the form of electronic currency that can be used for multiple purposes including transfers to other users, payments for goods and services, and conversion to and from cash
- The M-Pesa has developed into a platform of financial services to provide a retail electronic payments platform, virtual savings accounts and a platform for short term credit.
- M-Pesa can be described as a technological platform that has allowed Kenyans to access a menu of financial services in the comfort of their homes, work places or locations they choose, without a trip to the bank.
- It is an important instrument for financial inclusion in Kenya.

IV.1 DFS in Kenya Driven by M-Pesa Success

Frontier evolution in 4 stages: M-Pesa started as a money transfer platform in 2007 - I argued then that it would become a technological platform for a menu of financial services – this has now become the digital financial services (DFS):

- **First Stage** – Technological platform for payments and settlement – Trust accounts in specific banks that developed into **transactions platforms** supported by a network of Telco Agents. Telco formed the transmission backbone to a Trust Account in a bank
 - **Other commercial banks, MFIs and SACCOs were integrated with this platform.**
- **Second Stage** – Telcos and Banks moved to the next stage and partnered to develop **Virtual Savings Platform** – a technological platform to manage micro accounts – **A virtual banking service developed.**
- **Third Stage:** A platform of virtual credit supply - Transactions and savings data used to generate credit scores for use as the basis to evaluate and price short-term micro credit.
 - **Changing and transforming the costly collateral technology that forms the major obstacle in the credit market development, especially in Africa.**
- **Fourth Stage:** Developments in cross-border payments and international remittances.
- **Regulatory flexibility, reforms and capacity have been a major catalyst to this evolution**

IV.2 The Kenyan M-Pesa – Why the Success?

- Facilitating and innovative regulatory environment
- Available infrastructure – Phone network and network of agents - scalable
- Existing vector of agents and potential agents: Pre-paid airtime network of agents as well as potential agents whose role easily changed to be POS as well as aggregators to become liquidity distributors (see next slide for agent model)
- Marketing design that easily targeted early adopters who easily became the network builders
- Consumer receptiveness who initially were in the mobile phone network driven by:
 1. Spatial demographics – Urban-Rural links and pattern of financial flows
 2. Cost – visiting banks for transactions inhibitive
 3. Reliability and in real time – turn around time is 5 seconds
 4. Potential positive effects – business opportunities
 5. Reducing potential negative effects – reduced urban- rural trips or family visits
 6. Social and cultural norms
 7. Trust in the system – institutional (Regulator and regulated) and inter-personal (agent level)

IV.3 Kenya's Agent Network Management Model

- M-Pesa started with direct agents offering mobile phone based financial services combined with pre-paid airtime distribution
- The role of an Agent in a POS, Point of Service, was simple – Change cash into electronic units of money and store into the SIM card and vice versa
- The evolution facilitated the formation of specialised agents model with specific responsibilities:
 - **Agents** or **Sub-Agents** who formed the lower end of POS or CICO - Cash in Cash out platform
 - **Aggregators (Master Agents)** who were directly responsible for Agents in a given locality and provided liquidity to Agents.
 - **Super Agents** with no limitations on transactions threshold and provided liquidity to all other agents.
- This model has enabled an easier access to financial services across the country efficiently and effectively.
- In the emerging literature, this is the **Master Agent Model**, that is considered as the Global Best Practice in Agent Network Management once the market has evolved.

V. The Celebrated Outcomes -From M-Pesa to Digitization -5 Celebrated Outcomes

1. An Electronic Retail Payments System has evolved – it is effective, efficient, transparent and safe.

- Retail electronic payments is an easier entry point for financial services and also formalising the informal market
- Those retail payments platforms are operated from commercial banks.
- Kenya's case demonstrates that once a successful electronic payments platform is operational, it becomes a game-changer – Fintechs can roll out new products across all sectors of the economy.

2. Financial inclusion has been a success and there is evidence of financial development, inclusive finance and poverty reduction

- i. Banks now have a technological platform to manage micro accounts and to reach out to customers cost-effectively.
- ii. Virtual savings and virtual credit supply platforms have emerged – in addition to solving information asymmetry problems via credit scoring for pricing short term loans.
- iii. Strong banks with intermediation capacity have emerged – Kenyan banks have covered EAC region.
- iv. Allows the formulation of an effective and forward looking monetary policy
- v. DFS platform allowed monitoring of financial transactions and has improved the AML/CFT regime.
- vi. Women can save in instruments that cannot be encroached, they are efficient savers.
- vii. A recent study, Tavaneeet and Jack , 2017, shows that 2% of Kenyan households have been lifted from poverty – So Financial Inclusion leads to Sustainable poverty reduction

V.1 The Celebrated Outcomes -From M-Pesa to Digitization -5 Celebrated Outcomes...

3.From DFS to Digitization – Has allowed Fintechs to roll out **sustainable business models**.

These business models cut across all the sectors of the economy – Some Examples:

- i. One Acre Fund – Raised productivity and incomes for smallholder farmers
- ii. M-Kopa on domestic Solar energy supply
- iii. Water vending machines for urban slums for poor households
- iv. M-Tiba on financing health services
- v. M-Akiba on investments in Government securities

4.Digitization is influencing tax payments designs and revenue administration to minimize leakages

5.Finally, digitization is now allowing e-government services that are effective and easy to reach, as well as for Government to design social protection programs.

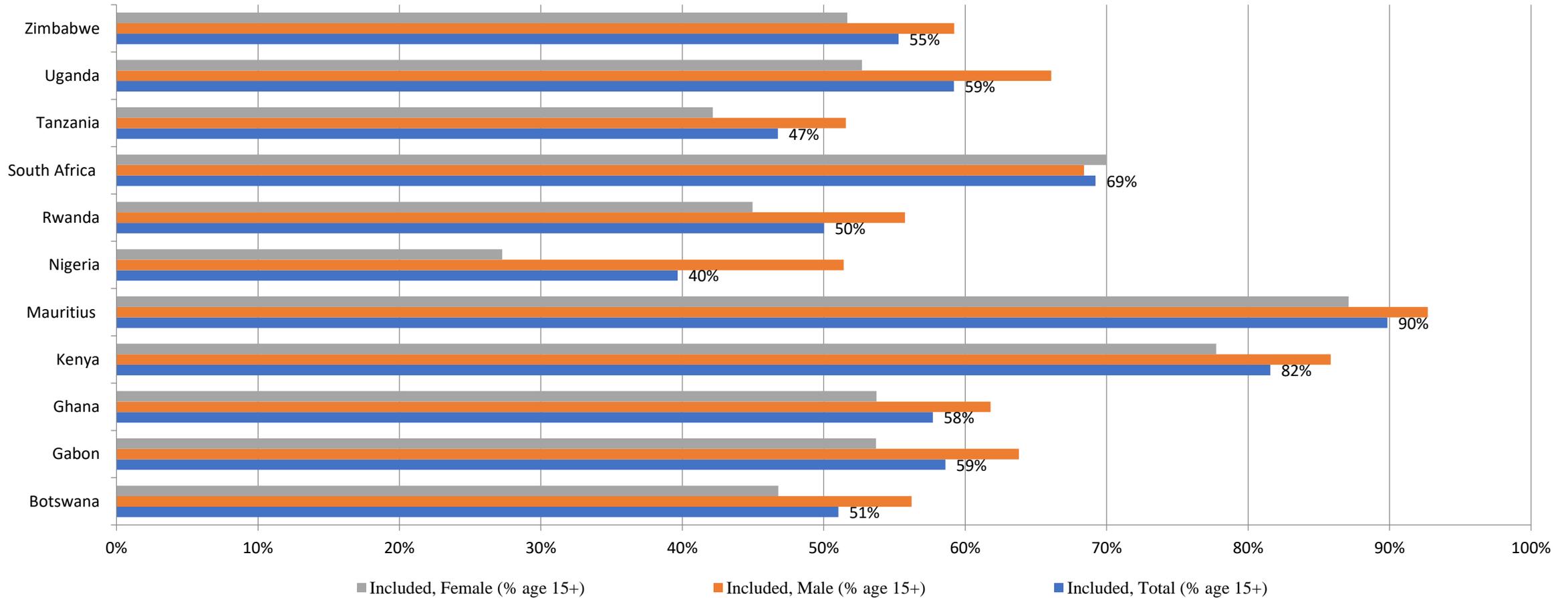
➤ **Kenya is in the Financial Inclusion and Financial Innovation *world map* because of M-Pesa. This innovative drive and capability can be replicated in Mozambique with ease.**

V.2 M-Pesa Provided Banks with a Technological Platform to Manage Micro Accounts

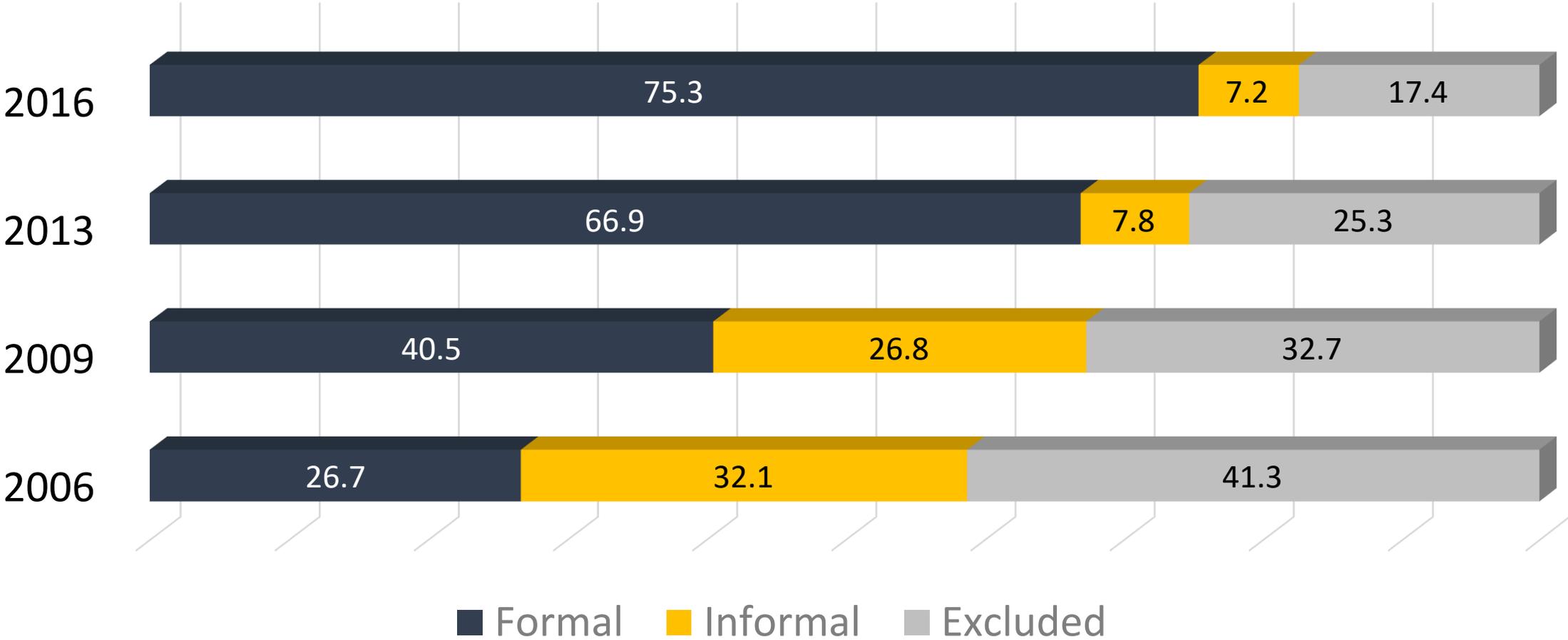
- Virtual savings and short term credit platforms
 1. M-Shwari launched in 2012 – has moved to Tanzania as M-Pawa, to Uganda and Rwanda as Mokash
 2. KCB M-Pesa launched in 2015
 3. Equitel launched in 2015
- Total number of bank accounts in Kenya increased to 41.7 million in 2016 while the number of mobile phone accounts stood at 31.6 million.
- Cook and Mckay (2017) show inflection points in the data profile and they demonstrate that these virtual banking products have pushed the financial inclusion frontier in Kenya.
- Latest data shows that Kenya's financial inclusion hit 82% in 2017, which is substantially higher than most of the selected African countries (followed by South Africa at 69%) except Mauritius that recorded 90% financial inclusion for adults aged 15 years and above – The Global Findex 2017 database by Demirgüç-Kunt *et al.* (2018).

The Success of financial inclusion in Kenya

Financial Inclusion in Selected African Countries, 2017



Financial inclusion in Kenya: 2006 - 2016



Financial Access Touch Points have Expanded – Financial services at the door step

Figure 1: Percentage of population within 5 km

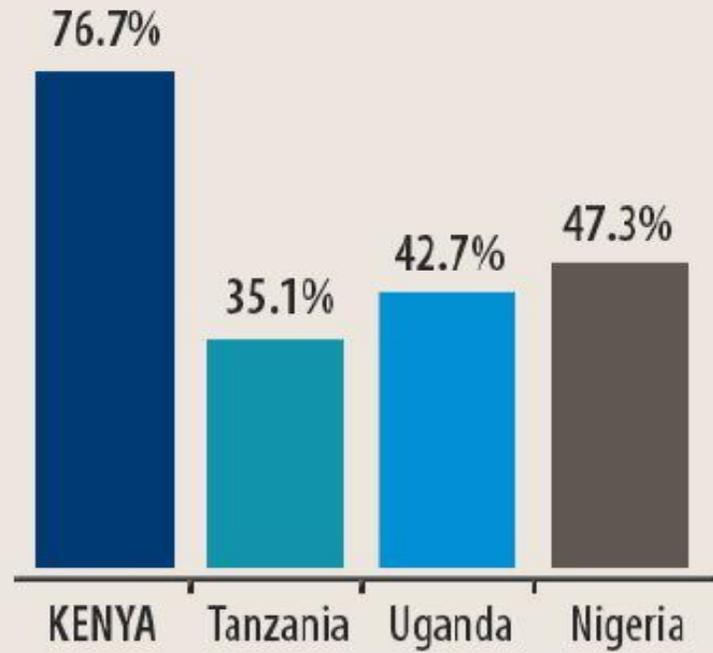


Figure 2: Number of financial access points

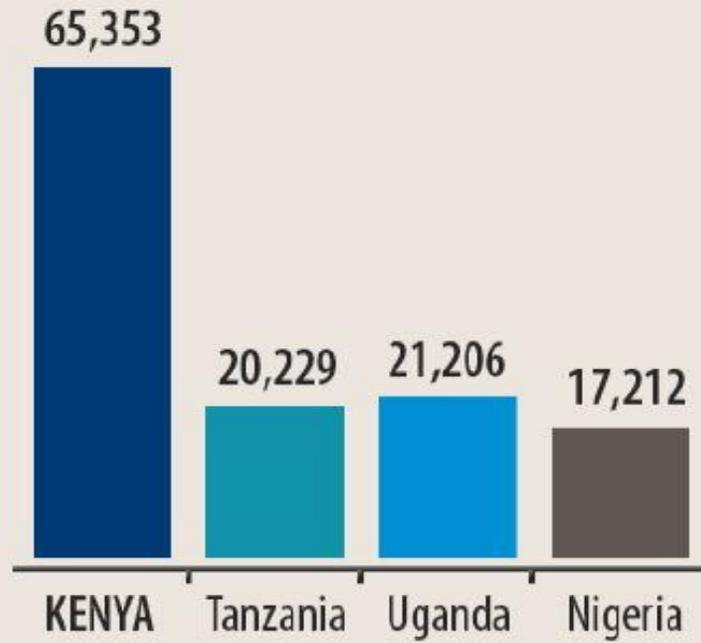
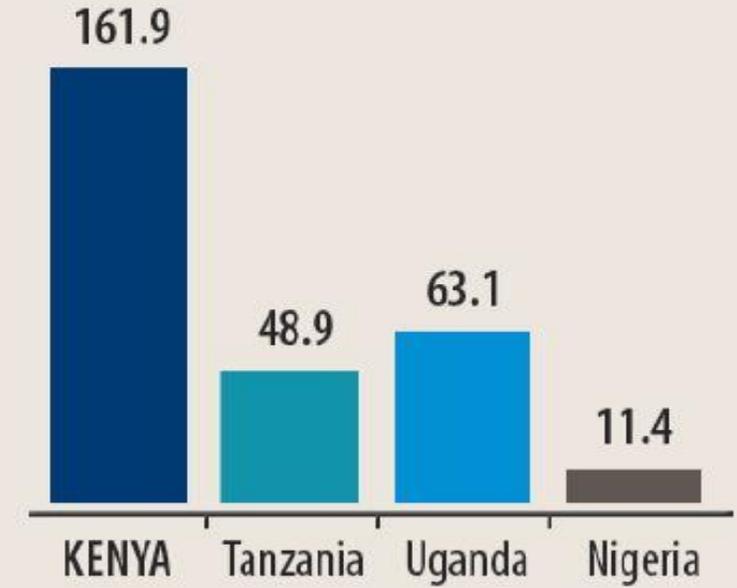


Figure 3: Financial access points per 100,000 people



VI. Emerging Issues 1: The Digital Platform for Financial Inclusion

- First, accessibility to financial services – Transactions is the entry to banking services.
- Second, commercial banks and microfinance banks have been provided with a ready platform for managing micro-accounts.
 - Banks have built huge mountains of deposits that has given them power to intermediate in the market and the capacity to grow.
- Third, has lowered cost of financial services both at the transactions cost level and time to visit the bank, the physical distance level.
 - In Africa, a trip to the bank to transact, to deposit or to withdrawal money is a very expensive affair both in time and physical distances. In short it has helped to lower barriers to entry into the banking sector.
- Fourth, has supported SMEs and households – First by accessibility of financial services, second, the ease of transactions – poor households and SMEs are transactions heavy and finally, the virtual credit supply developed within the ecosystem and its ease of application.
- Finally banks earn ledger fees 24/7

VI.1 Emerging Issues 2: FI will facilitate the process of Financial Development and inclusive growth

Once the economy has embraced digitization, it becomes easier to focus on market structure, financial inclusion for households, SMEs and all the sectors of the economy.

- In Kenya DFS Demonstrates that:
 1. Once supported by an innovative regulatory environment DFS drives innovations for appropriate financial inclusion products
 2. Retail Payments technology has developed; it is efficient, effective, transparent and real time – has covered other markets/sectors – Insurance, capital markets, Pensions and governments' targeted social protection
 3. Strong banks, MFIs and SACOs have emerged – branch outlets, bank deposits and loans accounts have increased. Kenyan banks have covered the EAC region – widened the market.
 4. Ability to change the collateral technology will support further developments in the credit market for low and middle income groups
 5. Financial inclusion and financial market development have improved the environment for monetary policy.
 6. Finally, financial inclusion has supported a better AML/CFT regime.
- These results can be replicated across developing economies: **-Individual banks can adapt, invest and innovate to benefit from these established outcomes – encouraged by the Regulator!**

VII. Digitization Lessons from Kenya

- Regulatory technology and transformative regulatory environment
- Retail electronic payments – the entry point in financial services for most of the unbanked/excluded: Klein and Mayer (2012) showed that liquidity distribution in Kenya was taking place outside banking halls!
- Governments' adoption of electronic payments ignites the digital transformation, including e-government services.
- Fiscal policy designs, electronic tax payments platforms and revenue administration have been very positive outcomes
- Sustainable business models have emerged with efficient payments platforms – they cover all sectors of the economy.

VIII. Digitization Lessons – Consolidating the Future

- **Connectivity** – Both for mobile phones and internet: the Fibre Optic cables are now covering rural Kenya.
- **Interoperability**, market conduct and competition
 - MNOs and MVNOs interoperability
 - Agent network interoperability
 - Agency banking interoperability – Uganda model is the best so far
- **Electronic-ID system** to cope with market innovations and security
- **Institutional capacity** to cope with market innovations and dynamism
- **Regulatory technology** must move in partnership and encourage sustainable and tractable innovations