TOWARDS AN INCLUSIVE AND SUSTAINABLE FINTECH ECOSYSTEM IN KENYA

Current outlook, challenges and policy options for the sector

KICTAnet
KENYA ICT ACTION NETWORK

Policy Guidance Note

TOWARDS AN INCLUSIVE AND SUSTAINABLE FINTECH ECOSYSTEM IN KENYA

Current outlook, challenges and policy options for the sector

Authors:

Peter M. Mwencha (PhD.),
Ali Hussein and Grace Githaiga

Design & Layout:

MediaForce Communications
www.mfc.ke | @mfcafrica

The publication of this policy guidance note was made possible by support from Huawei.

December 2019. Kenya ICT Action Network.

HUAWEI

ABOUT THE AUTHORS

Peter M. Mwencha (PhD.)

Dr. Peter M. Mwencha is a well-rounded researcher, lecturer and consultant with extensive business development, management and policy-making experience at institutional, country and regional levels.

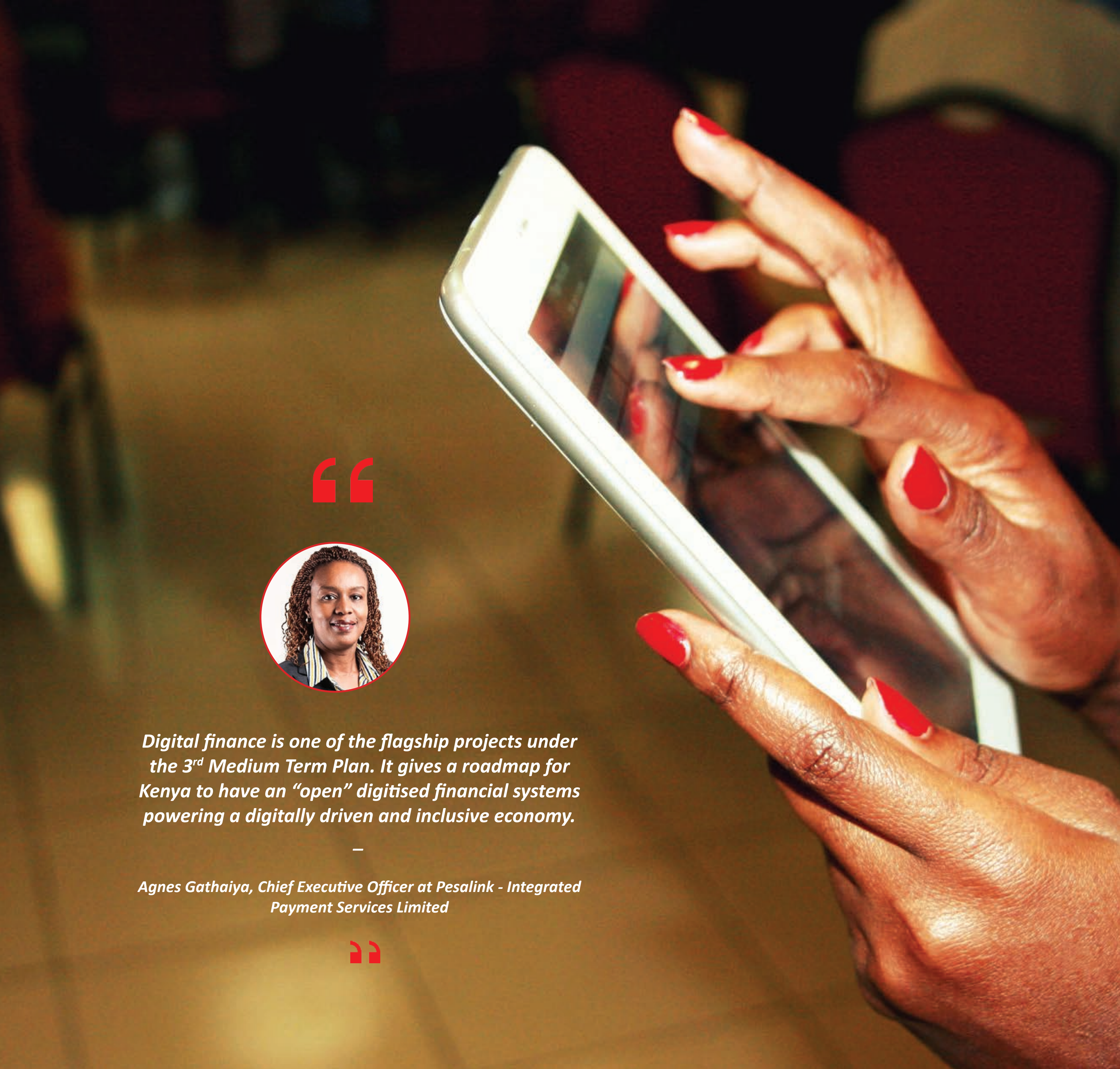
Ali Hussein

Ali is a C-Level Executive @ the Intersection of Marketing & Technology, who is passionate about Fintech. Ali is a regular commentator on matters Fintech, is a Fintech Enterpreneur and a Global Advisor at Mifos Initiative.

Grace Githaiga

A C-Level Visionary Leader and Expert in ICT Policy Advocacy and Regulation, and also an inspiring people Manager with mentoring and coaching experience.

Table of Contents



Digital finance is one of the flagship projects under the 3rd Medium Term Plan. It gives a roadmap for Kenya to have an "open" digitised financial systems powering a digitally driven and inclusive economy.

–

Agnes Gathaiya, Chief Executive Officer at Pesalink - Integrated Payment Services Limited

Kenya's Fintech Landscape at a Glance

Chart: © 2019. Kenya ICT Action Network

Systems Integrators

Eclectics International · Packline Systems Limited · redpulse Limited

Healthtech

m-tiba · Changamka Health Innovations · MYDAWA mPower Your Health

Comparision

PESABAZAAR.COM · InsureAfrika.com

InvestTech

ABACUS

Group Savings

ESACCO · chamasoft

Cloud Banking Platforms

kwara · musoni · Mifos

Lending / Financing

Personal

GetBucks · branch · mypepea · KCB M-PESA Account · iNUKaPAP · pesa na pesa · M-Shwari · ShieldFinance · TALA

P2P

ODYSSEY CAPITAL · kiva · PESAPATA

Business

CREDITINFO

Education

STUDENT FINANCE AFRICA

Agritech

FarmDrive · we farm

Bank led Fintechs

Finserve · VOOMA · LOOP · Timiza · PesaLink

Introduction

The digital transformation of financial services is gathering pace due to increased adoption and usage of technology-enabled innovative digital financial services also known as Fintech[1]. This transformation is largely driven by new technological disruptors[2] that leverage digital innovations to develop new business models, applications, processes and products. These have increased access to financial services for the underserved, thereby posing a serious challenge to traditional financial models such as money transfer, legacy banking, wealth management, brokerage services, insurance and lending. The innovations have radically transformed how consumers and businesses experience and engage with financial services including money transfer, settling payment, borrowing and saving, allocating capital, and risk sharing[3].

While the financial services sector has a long history of early adoption when it comes to new technologies – from the telegram, to high frequency trading, to automated teller machines and credit cards[4], the technological basis for new Fintech business models and services rests on the development of some digital innovations developed in recent decades. These include but not limited to distributed and cloud computing, open-source software, Application Program Interfaces (APIs), artificial intelligence, big data, cryptography, smart contracts, and mobile internet access. Taken together, these innovations have enabled the ability to collate and analyze vast amounts of data, develop more robust security systems, and connect economic agents through multiple types of platforms on a real-time basis[5].

By changing the way the financial markets operate across the globe, Fintech has opened up the financial services value chain, leading to increased access, better services, and gains in efficiency. This has triggered deep changes to the existing market structure and financial market infrastructure for the provision of these services. The promise of hefty returns, as well as the potential to be at the forefront of a disruptive development, has seen considerable investment into the sector. Since 2010, more than US$376 billion has been invested in almost 2,500 companies worldwide[6]. In 2018 alone, a record USD 111.8 billion was invested in Fintech, and the sector garnered extensive media coverage and interest[7].

In Sub-Saharan Africa (SSA), Fintech presents opportunities that were hitherto unavailable as most SSA countries have a shallower financial system than those in other developing regions of the world. In terms of financial inclusion, only 20 percent of the population has a bank account compared to 92 percent in advanced economies and 38 percent in non-advanced economies. Underinvestment, poor infrastructure, and comparatively low levels of financial literacy have contributed to the region being underbanked[8]. The sector is growing rapidly in the East Africa region[9] particularly in Kenya where it has had tremendous impact on deepening financial inclusion by enabling the underserved population to overcome constraints to access of financial services

1 See a June 2017 report by the Financial Stability Board ("FSB") titled Financial Stability Implications from Fintech: Supervisory and Regulatory Issues that Merit Authorities' Attention, FIN. STABILITY BD. 7 (June 27, 2017), http://www.fsb.org/wpcontent/uploads/R270617.pdf [https://perma.cc/7KPY-DRR3] (emphasis added).

2 According to a 2016 PWC report, Fintech disruptors are fast-moving companies, often start-ups, focused on a particular innovative technology or process in everything from mobile payments to insurance They have been attacking some of the most profitable elements of the financial services value chain. This has been particularly damaging to the incumbents. See Financial Services Technology 2020 and Beyond: Embracing disruption.

3 Mcquinn, Alan, Guo, Weining, & Castro, Daniel, 2016. Policy Principles For Fintech. Information Technology & Innovation Foundation.

4 Consumers International, 2017, Banking on the Future: an exploration of Fintech and the consumer interest.

5 International Monetary Fund (2019) Fintech in sub-Saharan African countries: a game changer?

6 Skan, Julian, James Dickerson, and Luca Gagliardi. 2016. Fintech and the Evolving Landscape: Landing Points for the Industry. Dublin, Ireland: Accenture.

7 See Inclusive Fintech whitepaper. https://www.inclusiveFintech50.com/white-paper

8 International Monetary Fund (2019) Fintech in sub-Saharan African countries: a game changer?

9 EAVCA & Intellecap (2018). Fintrek:exploring new frontiers in Fintech investment in East Africa. p.7

"Fintech has opened up the financial services value chain, leading to increased access, better services, and gains in efficiency. This has triggered deep changes to the existing market structure.

Benefits of Fintech

Potential benefit and its link to financial stability

Source: Financial Stability Board (2017)

01

Decentralization and diversification

Decentralization and diversification in the financial system can dampen the effects of financial shocks in some circumstances. Failure of a single (or type of) institution is less likely to shut down a market as there would be other (types of) providers of financial services.

02

Efficiency

Efficiency in operations, including through incentives created by contestability, supports stable business models of financial institutions and contributes to overall efficiency gains in the financial system and the real economy.

03

Transparency

Transparency reduces information asymmetries and enables risks to be more accurately assessed and better priced. It can further foster the creation of financial instruments with exposure to specific risks, completing markets and improving market participants' ability to manage risk.

04

Access to, and convenience of, financial services

Access to, and convenience of, financial services affects the financial inclusion of households and businesses, including SMEs. This is important for supporting sustainable economic growth and providing a diversification of exposure to investment risk.

While acknowledging the large potential gains from Fintech, there are concerns about new vulnerabilities that these technologies and business models may bring[10]. Given the variety of and significant differences between the different Fintech services, it is extremely difficult to come up with a bespoke, overarching framework that effectively addresses the unique blend of risks and challenges arising from the growing access and use of these novel services. Nonetheless, failure to address these concerns could impede the pace and scale of growth of the Fintech industry. It is therefore in the interest of Fintech stakeholders to try and come up with appropriate legal, policy and regulatory frameworks for the Fintech space that will foster growth in financial inclusion without stifling innovation.

Against this background, this Policy Guidance Note aims to provide various insights into Kenya's fast-evolving Fintech ecosystem. It analyzes the evolution of, and outlook for the Fintech sector in Kenya. It Against this background, this Policy Guidance Note aims to provide various insights into Kenya's fast-evolving Fintech ecosystem. It analyzes the evolution of, and outlook for the Fintech sector in Kenya. It further identifies the challenges facing the Fintech ecosystem in Kenya and provides practical recommendations for the development of frameworks for an enabling environment, while safeguarding the integrity of the sector. This will allow for further discussions and consultations amongst stakeholders within the Fintech space in Kenya. In addition, it will provide for action-oriented guidance and policy tools designed to inform the objectives, proposed approach and shape of future laws, policies and regulation in the Fintech area in Kenya.

10 IMF, 2019, p.2

The Fintech Ecosystem Outlook

a. What are Fintechs?

'Fintech' in its broadest sense[11] refers to the use of technology to deliver financial solutions[12]. In practical terms, a Fintech is typically a startup that identifies a pain point in financial services, something incumbents do badly or not at all (perhaps as a result of regulatory changes or lack of digital customer focus). Fintech seeks to provide a remedy for the pain point, with the goal of selling the solution or service directly to customers or to an incumbent or selling itself to an existing financial services firm[13]. Fintechs are the latest outcome of a long standing process, spanning to date three eras, that has recently accelerated[14]. The 2008 Global Financial Crisis opened a new era of Fintech, marked by the arrival of waves of new startups delivering either directly (P2P, B2C) or indirectly (B2B) new technologies to be used in finance[15]. These Fintech startups tend to be agile and seek to disrupt, compete with, do business with, or be acquired by incumbent financial institutions. This new trend is pushing incumbent financial institutions to increasingly focus on technology in order to compete with the threat posed by emerging startups[16].

In the recent past however, we have seen a new wave of Fintechs that have been spawned out of established financial players. The most relevant examples in Kenya include the following:

Finserve

Founded a few years back by Equity Bank to counter the Safaricom hegemony, Finserve has evolved from a Mobile Virtual Network Operator (MVNO) into a Payment Gateway, and provider of various financial services APIs – literally a Banking as a Service (BaaS)

Vooma

The Fintech arm of KCB Group founded to take advantage of the opportunities of Fintech, and still evolving to find its feet. One of its most successful products is the KCB-Mpesa.

New Business Ventures (NBV)

NCBA's inherited home for Mshwari, probably the most successful B2C Fintech in the region. It also domiciles CBA Loop, it's upmarket 'Digital Bank'

Timiza

Timiza is a virtual banking platform by the Absa Group Limited local subsidiary (Barclay Bank)

---

11 It is difficult to defining Fintech with legal certainty. For evidence on the Fintech multiverse of definitions, see P Schueffel, Taming the Beast: A Scientific Definition of Fintech, Journal of Innovation Management 4,4 (2016) 32-54.

12 DW Arner, J Barberis and RP Buckley, 2016, 'The Evolution of Fintech: A New Post-Crisis Paradigm?' 47(4) Georgetown Journal of International Law, 1271.

13 See Bonneau, et al 2017. From Fintech to TechFin: The Regulatory Challenges of Data-Driven Finance, EBI Working Paper Series. 2017 – no. 6. Available online at

14 Ernst & Young, 2015. Fintech – reimagining and reinventing financial services. Available online at

http://www.ey.com/gl/en/industries/financial-services/fso-insights-Fintech-reimagining-and-reinventingfinancial-

services (last accessed 25 April 2019).

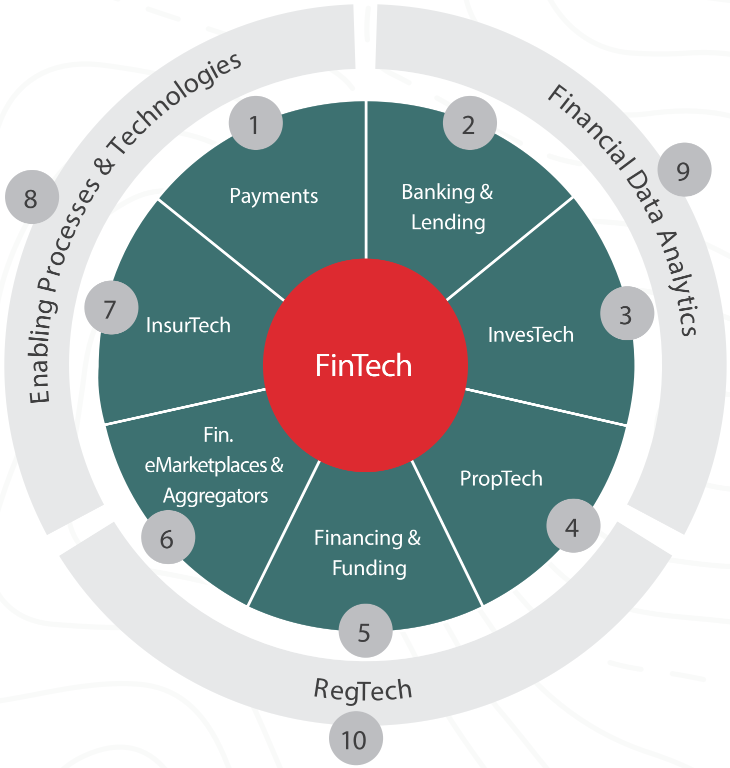
15 Deutsche Bank, Fintech 2.0: Creating new opportunities through strategic alliance, Available online at

http://www.gtb.db.com/docs_new/GTB_Fintech_Whitepaper_A4_SCREEN.pdf. (21 April 2017) 2.

16 See Bonneau, et al 2017. From Fintech to TechFin: The Regulatory Challenges of Data-Driven Finance, EBI Working Paper Series. 2017 – no. 6. Available online at

A wide variety of approaches have been used to classify Fintechs, with the most common approach based on the economic functions and/or financial products and services they provide. Other approaches use a hybrid method which combines the technology innovation and economic functions[17]. On this basis, they can be classified into two categories; those Fintechs that provide financial services (Core Fintechs), and those that enable such services (Enabling Fintechs)[18]. The Fintech Segmentation Framework further organizes Fintech function into seven categories namely: (i) payments; (ii) banking and lending; (iii) InvesTech; (iv) PropTech; (v) Financing and funding; (vi) Financial eMarketplaces and Aggregators; and InsureTech[19].

There has been rapid growth of innovations touching all these categories of financial services, with activities at both the retail (i.e. households and small and medium enterprises (SMEs)) and wholesale (corporations, non-bank financial institutions and inter-bank) levels.[20]



Core FinTechs

Enabling FinTechs

Figure 1: The FinTech Segmentation

Source: EY Analysis

17 CCAF, ADBI, FintechSpace (2019). ASEAN Fintech Ecosystem Benchmarking Study. Cambridge, UK.

18 EY, 2019, Fintechs in Sub-Saharan Africa: An overview of market developments and investment opportunities, p.6.

19 Ibid

20 Financial Astability Board (2017). Financial Stability Implications from Fintech: Supervisory and Regulatory Issues

b. The Fintech Ecosystem

The Fintech ecosystem comprises a number of attributes and stakeholders that influence the strength of the overall sector's development. Fintech ecosystems are critical to nurturing the kind of technological innovation necessary to make financial markets and systems more efficient and improve the overall customer experience. Moreover, given the scope of financial technology, a vibrant Fintech ecosystem can stimulate the broader local economy by attracting talented, ambitious people and becoming a locus of creative thinking and business activity. Fintech ecosystems enable growth opportunities for many sectors, including software, data analytics, payments, platforms, mobile banking, and algorithmic asset management systems[21]. The following framework visualizes the relationships between the four pillars of an effective and healthy ecosystem and how stakeholders affect each other.

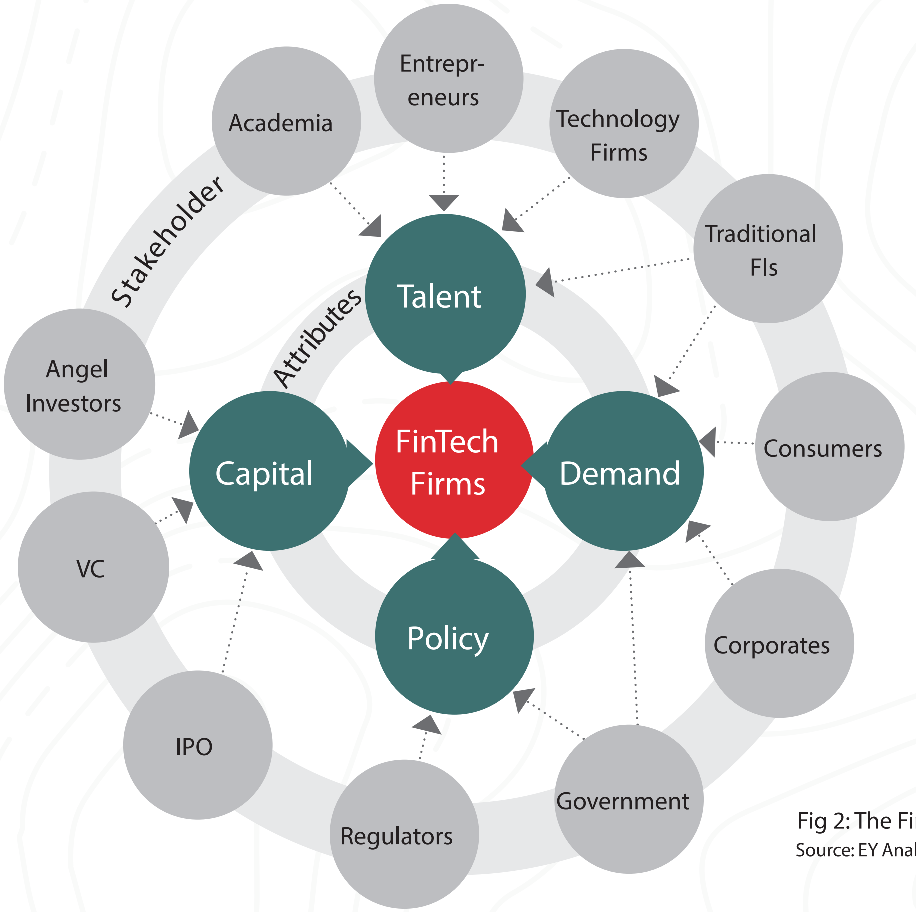


Fig 2: The FinTech Ecosystem
Source: EY Analysis

21 Strategyand. (n.d.). Developing a Fintech ecosystem in the GCC. Available online at https://www.strategyand.pwc.com/m1/en/reports/developing-a-Fintech-ecosystem-in-the-gcc.pdf

In the U.S. Asia and Europe, Fintech "ecosystems" have stimulated technological innovation, made financial markets and systems more efficient, and improved the overall customer experience. These ecosystems — composed of governments, financial institutions, and entrepreneurs — have also shown that they can energize the broader local economy by attracting talented, ambitious people and becoming a locus of creative thinking and business activity[22].

Europe is probably the most robust Fintech ecosystem in the world with the ecosystem working in tandem to advance the industry. Infact, the U.K has an appointed Fintech Ambassador. The most critical part of this collaboration is the policy and regulatory framework that has made Open Banking a reality in Europe. Dubbed PSD2 (Payment Service Directive), it is an EU Directive, administered by the European Commission (Directorate General Internal Market) to regulate payment services and payment service providers throughout the European Union (EU) and European Economic Area (EEA). The Directive's purpose was to increase pan-European competition and participation in the payments industry also from non-banks, and to provide for a level playing field by harmonizing consumer protection and the rights and obligations for payment providers and users.

22 Strategyand. (n.d.). Developing a Fintech ecosystem in the GCC. Available online at https://www.strategyand.pwc.com/m1/en/reports/developing-a-Fintech-ecosystem-in-the-gcc.pdf

c. The Fintech Ecosystem in Kenya

Sub-Saharan Africa has emerged as one of the fastest growing Fintech regions across the globe. The three main Fintech hubs in SSA have been formed in the economic centers of South, East and West Africa: South Africa, Kenya and Nigeria respectively. Kenya, the second largest Fintech hub, hosts around 20% of the entire SSA Fintech landscape, and has a stronger focus on the payments segment. The Kenyan hub is located in Nairobi, which is home to more than 50 Fintechs[23]. Though scoring poorly relative to hubs in the Global North, it was one of only three cities from Africa included in a Deloitte study into global Fintech hubs. The other two were Johannesburg and Lagos[24].

Developments in Kenya's Fintech Ecosystem

Source: EY (2019)

TALENT
Medium-High

Kenya has some of the most prominent Fintech success stories in Sub-Saharan Africa

DEMAND
High

Has significant number of local investors and VCs and is complemented by the steady rise of international investors. In addition, there is a growing interest amongst international technology players keen to invest in accelerator programs led by VISA, Mastercard, Microsoft and Barclays.

POLICY
Low

Policy framework in Nairobi is showing signs of improvement. The government's recently released draft regulation for Fintech companies is expected to be turned into law soon.

Kenya has developed into a renowned Fintech hub because of its early adoption of M-Pesa, a mobile money system that led to significant gains in financial inclusion, coupled with the extent of financial infrastructure and an enabling policy environment[25]. Following in M-Pesa's footsteps, a variety of other companies offering an array of new Fintech services including insurance, lending, capital raising and investment management have set up shop in Nairobi. Many of these Fintechs for whom Kenya is something of a test case aim to serve market segments that are "underserviced" by traditional players.

---

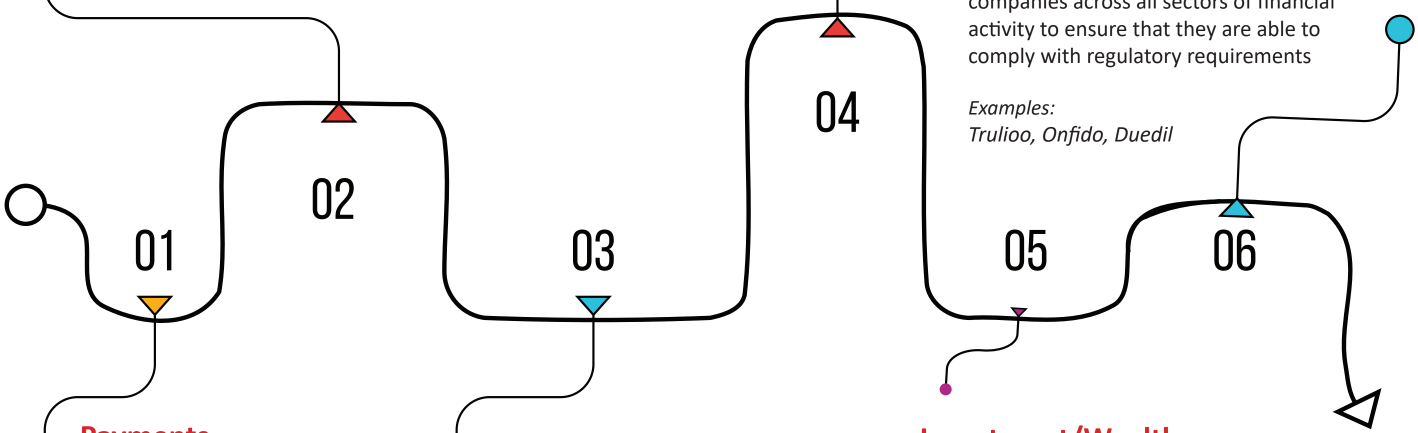
23 EY, 2019, p.6.

24 Deloitte. (2017). A Tale of 44 Cities Connecting Global Fintech: Interim Hub Review 2017, Report, Available online: https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/Innovation/deloitte-uk-connecting-global-Fintech-hub-federation-innotribe-innovate-finance.pdf [Accessed 4 May 2017]

25 Cook, Tamara 2018, Why Fintech matters: Reflecting on FSD Kenya's work. Accessed on 7th October, 2019. Available online at https://fsdkenya.org/blog/why-Fintech-matters-reflecting-on-fsd-kenyas-work/

Fintech Business Models and Products/Services in Kenya

Source: Blythin & Van Cooten (2017)[26].



Payments

Integrating mobile and internet technologies for online exchanges, remittances and non-bank exchange systems which are leading Kenya towards becoming cashless. This has the potential to make payments more secure, faster and easier.

Examples:
M-Pesa, PesaPal, Kipochi, Cellulant, Finserve

Money Transfer platforms

Digital money transfers which utilize internet and mobile technology. These increase ease of access and usage as well as reducing customer overheads in comparison to traditional money transfer systems. Used nationally and internationally, some build on existing technologies, while others incorporate new innovative solutions e.g. cryptocurrencies.

Examples:
BitPesa, Juba Express, WayaWaya, Wave, WapiPay

Deposits and Lending Services

Fintech innovations that allow individuals easier access to finance from peer-to-peer and private lenders.

Examples:
Branch, Tala, Mode, Alternative Circle, Zenka

Capital Raising

Online alternative funding platforms facilitate MSMEs to gain capital investments through crowd-funding, individuals and venture capitalists. Platforms limit involvement of intermediaries allowing increased transparency and communication between parties.

Examples:
Kiva, Lelapa, GoFundMe, RocketHub

Investment/Wealth Management:

Integration of technology and data analytics (e.g. robo-advisors) have reduced costs and allowed a proliferation of online and mobile; open, efficient and client oriented platforms and services. Other disruptive investment management services function as enablers.

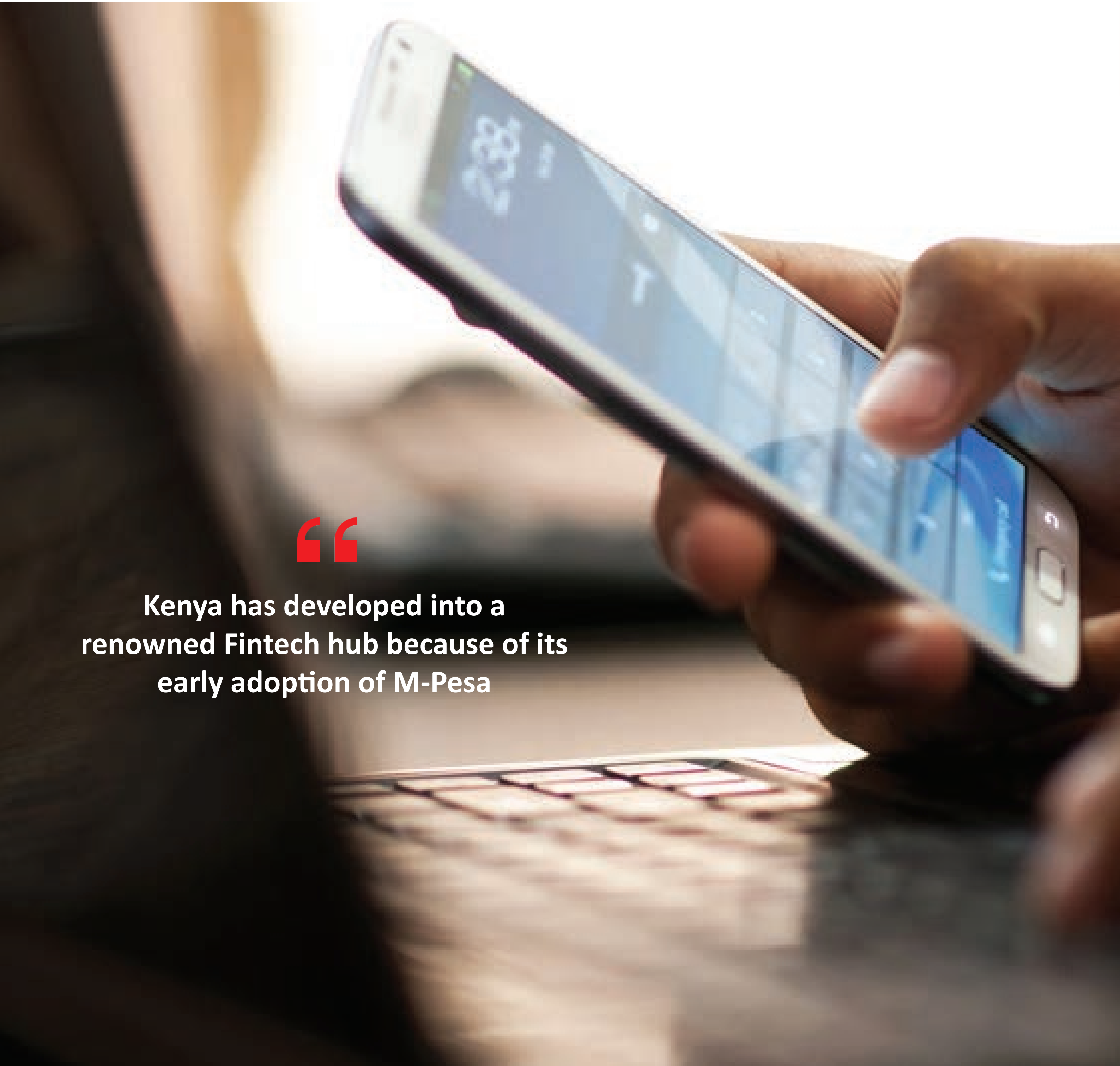
Examples:
DarkMatter, Abacus

RegTech

Technology that is providing solutions to companies across all sectors of financial activity to ensure that they are able to comply with regulatory requirements

Examples:
Trulioo, Onfido, Duedil

26 Blythin & Van Cooten (2017). The Development of Fintech in Nairobi: Contributions to Financial Inclusion and Barriers to Growth.



Kenya has developed into a renowned Fintech hub because of its early adoption of M-Pesa

Challenges Facing the Fintech Ecosystem in Kenya

Despite its obvious benefits, the Fintech ecosystem in Kenya faces a number of challenges that are multidimensional and stem from a variety of sources. These challenges can be organized into four main categories namely:

Regulatory concerns

Customer concerns

Technological concerns

Market Systems concerns

a. Regulatory concerns

While a Fintech friendly regulatory environment is recognized as one of the key drivers for the unprecedented success of the sector in Kenya, innovative Fintech firms pose a significant test to the current regulatory paradigm. This section summarizes some of the key challenges underlying Fintech regulation in Kenya.

i. Uncertainty Regarding Existing Regulations

One of the major challenges of Fintech innovation is that it is inherently disruptive for any legal system as it does not easily fit into the existing regulatory regimes[27]. While new Fintech solutions often end up being already covered by existing law, in many situations, the legal status of the new product or service cannot be clearly determined, either because there is a "gap" in regulation, or because different regulations conflict with each other[28]. Regulators therefore need to carefully consider whether to alter the existing regulatory approaches or to develop entirely new frameworks for new Fintechs entering the market (e.g. the market (e.g. in case of rapid growth of online lending platforms)[29]. While Kenya does not have an overarching Fintech-specific legal and regulatory framework, cautious permissiveness through flexibility and forbearance has ensured that Fintech firms are regulated by a variety of statutes and rules governing various financial products, services and market participants, as well as other rules applicable to all companies generally (e.g. company laws, electronic communications laws, etc.)[30].

ii. Regulatory Fragmentation

Since Fintech products and services cut across a number of sectors, it is often difficult to assign them to a single Fintech regulator. This multiplicity of regulators, coupled

27 See Didenko (2018). Regulating Fintech: Lessons from Africa.

28 Didenko, Anton. 2017. Regulating Fintech: Lessons from Africa. San Diego International Law Journal 19(2), Available at: http://digital.sandiego.edu/ilj/vol19/iss2/5

29 Ibid, p. 320.

30 Didenko (2017). Regulatory challenges underlying Fintech in Kenya and South Africa. P.7

with overlapping responsibilities and authority, may lead to inefficiencies and inconsistencies[31]. In Kenya, there are concerns about the of lack of coordination among regulators, and potential conflicts of jurisdiction in regulating Fintech[32]. The regulation of virtual currencies has exposed the different positions taken by different regulators regarding the issue. While the CBK has warned the public to desist from transacting in Bitcoin and similar products, the Capital Markets Authority (CMA) has adopted a more Fintech-friendly approach by confirming the upcoming establishment of the sandboxing regime[33].

iii. Weak Oversight Agencies

The common view is that many financial sector regulators in emerging markets and developing economies have poor regulatory capacity due to inadequate resources, staff, expertise, and tools[34]. This is despite of working closely with the financial industry in the evolution of robust technological and regulatory solutions, to cross-border electronic payment systems, as well as securities trading and settlement systems. The regulators are particularly under-resourced in terms of acquiring and implementing technology. However, with the rapidly growing amount of information reported to regulators and new technology such as artificial intelligence (AI) and deep learning, there seems to be great potential for a lot more to be done in terms of automating market supervision, consumer protection, and prudential regulation using what is now commonly referred to as RegTech[35].

iv. Regulatory Approach

There are various Fintech-promoting regulatory techniques that can be employed to balance the traditional regulatory objectives of financial stability and consumer protection, with promoting growth and innovation. According to a recent study, the four common alternative approaches to Fintech regulation include: (i) doing nothing, (which spans being permissive to highly restrictive, depending on context), (ii) cautious experimentation on a case-by-case basis (e.g. no-action letters), (iii) structured experimentation (such as sandboxes or piloting) and (iv) so-called smart regulation (i.e. the development of specific new regulatory frameworks) which involves four stages. The stages are testing, a regulatory sandbox, a restricted license and a full license[36]. In most cases, regulatory measures aimed at Fintech businesses do not take the form of a standalone "Fintech law" or "Fintech statute". Instead, regulators generally try to adjust the existing legal framework to address the peculiarities of Fintech. This usually involves tackling Fintech on a product by product basis[37].

v.Government Support

Governments can influence many aspects of the ecosystem, including easing business regulations (such as copyright, product registration, initial public offering [IPO] requirements) to keeping taxes and fees low. However, the extent of the government's involvement can vary. In relatively mature Fintech ecosystems such as in the U.K. and the U.S., the private sector dominates the service provider landscape. In these countries, the government's role is limited to policy setting, regulations, and property development. In Kenya, Safaricom had a good working

31 See Knight, supra note 9, at 23–25.

32 Didenko, Anton. 2017. Regulatory challenges underlying Fintech in Kenya and South Africa. Accessed on 12 October, 2019. Available online at

33 Didenko, A. (2018). Regulating Fintech: Lessons from Africa, p. 54.

34 GPFI (Global Partnership for Financial Inclusion). 2016. "Global Standard-Setting Bodies and Financial Inclusion: The Evolving Landscape." Washington, D.C.: CGAP.

35 Arner, Douglas, Barberis, Janos & Buckley, Ross P. 2017, Fintech, RegTech, and the Reconceptualization of Financial Regulation. Northwestern Journal of International Law & Business, Vol 37, No. 3, 371-413. Available online at http://scholarlycommons.law.northwestern.edu/njilb/vol37/iss3/2

36 Dirk A. Zetzsche, Dirk et. al.,2017, Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation, 23, Fordham J. Corp. Fin. L. 31.

37 Didenko, Anton. 2018. p. 322.

relationship with the Central Bank of Kenya and was given regulatory space to design M-Pesa in a manner that fit its market. This provided sufficient prudential comfort to the central bank[38].

vi. Cross-Border Cooperation

Fintech operations are often international, which creates implications for cross-border movement of data among states[39]. In addition, the provision of financial services through digital channels can facilitate cross-border transactions which can present particular risks, e.g. in terms of the ability to seek redress or take enforcement action if required[40]. However, most authorities are normally focused on how Fintech is affecting the domestic financial landscape; while cross-border issues are generally not being discussed. In several jurisdictions, frameworks address domestic market participants. Given this, oversight bodies from different jurisdictions should cooperate to ensure that consumers remain adequately protected.

> "While the CBK has warned the public to desist from transacting in Bitcoin and similar products, the Capital Markets Authority (CMA) has adopted a more Fintech-friendly approach by confirming the upcoming establishment of the sandboxing regime

38 IMF (2019) Fintech in sub-Saharan African countries: a game changer?

39 See Didenko, 2018.

40 OECD (2018), G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age

b. Customer concerns

Fintech are undoubtedly transforming the lives of consumers of financial services as evidenced by their experience of and engagement with financial services. At the same time, the adoption and usage of these innovative digital financial services is giving rise to new risks and challenges for consumers[41].

The customer related challenges include the following:

i. Cyber-Fraud

Cyber-attacks are a growing threat to the entire financial system, and Fintech could serve to accentuate this risk. The susceptibility of financial activity to cyber-attacks is likely to be higher the more the systems of different institutions are connected, amongst which there is a weak link[42]. Recent data breaches and successful cyberattacks have resulted in incidents of large-scale fraud. One of the most high-profile acts of cybercrime relating to Fintech involved the theft of Bitcoin. Mt.Gox, which was the world's largest Bitcoin exchange, collapsed in 2014 after a hacker's heist on its virtual vaults siphoned away $473 million worth of Bitcoin. 90% of the stolen Bitcoin belonged to 24,000 customers[43]. In general, greater use of technology and digital solutions expand the range and number of entry points cyber hackers might target. This is the case for Fintech activities which may spread data across a larger number of institutions, for example, via increased use of digital wallets and e-aggregators[44]. For such Fintech applications, critical information may be stored on mobile devices that oftentimes get lost or stolen. Security of mobile devices can also be compromised through payment applications such as Google Wallet and MasterCard PayPass[45]. Unless such vulnerabilities can be addressed satisfactorily

41 In some cases, such as with irresponsible and predatory lending, Fintech magnifies existing risks, in other it creates new ones.

42 FSB, 2017, p.19.

43 Hedge funds gamble on Mt Gox bitcoin payout', Financial Times, February 2017

44 See FSB, 2017, p. 24

45 Lee, In & Shin, Yong Jae, 2018, Fintech: Ecosystem, business models, investment decisions, and challenges. Business Horizons, 61, 35-46.

and in demonstrable ways, the adoption of Fintech may significantly slow down significantly.

ii. Over-Borrowing

Fintech firms have created platforms that both streamline the application processes and crunch data in ways that enable a rapid decision on whether a loan is made. This can mean qualifying consumers are able to access loans in minutes. Regrettably, this can mean that consumers denied credit elsewhere and/or quite possibly in desperate circumstances can now access high cost, potentially toxic credit within minutes[46]. In countries where access to banking is limited, Fintech is opening up credit to many for the first time. As a result of the ease of accessing digital credit, a number of digital borrowers have taken multiple loans from more than one provider at one time, resulting in numerous customers being driven into debt and many borrowers struggling to repay their loans[47]. Default is quite common given that an estimated 2 million people have been reported to the Kenyan credit bureau for defaulting on M- Shwari[48]. This has raised concerns about the risk of excessive borrowing and over-indebtedness among lower-income households.

iii. Data Privacy and Protection

Fintech's reliance on vast amounts of digital data concerning the context, circumstances and behaviors of the consumer is fueling data and privacy concerns. Case in point is digital credit, whereby the use non-traditional customer data (in particular, digitized financial transactions such as mobile money and airtime usage) to develop alternative credit scores for people excluded from the normal financial system thereby making it possible to extend credit to large groups of individuals without collateral or traditional scores[49]. As a data intensive ecosystem fundamental for data mining and analytics, Fintech also gives rise to security concerns around hacking and data breaches; and in a banking context, identity theft and the theft of assets can be simultaneous, leading to potentially catastrophic detriment for consumers[50]. With the increased adoption of Fintechs in Kenya, huge debate has ensued about how to best and lawfully collect, aggregate and exploit this consumer data.

iv. Financial Literacy

A large segment of the target client base for Fintech credit services have little to no experience working with a financial institution, let alone through complicated user interfaces. A recent study on Fintech ecosystem in Kenya acknowledged that financial literacy is a huge problem and cause for concern as they believe that many customers do not understand the implications of the contracts they are signing. There is however a growing concern that a lack of financial literacy amongst customers, coupled with aggressive and predatory business practices could start (or, is already) producing outcomes detrimental to the livelihoods of consumers. The biggest concerns lies with Fintech companies that operate as mobile lenders[51]. Many of their customers have little awareness of the products, fees, the lending terms, and several respondents report taking their first loan without an intentional purpose for it. Such unsophisticated borrowers may end up borrowing too much, may get shut out of the system through accidental default, or suffer in other unintended ways[52].

46 Consumers International, 2017, Banking on the Future: an exploration of Fintech and the consumer interest.

47 Totolo, E. 2018. Kenya's digital credit revolution 5 years on. Available at: http://fsdkenya.org/blog/kenyas-digital-credit-revolution-5-years-on/ (Last accessed October 12, 2019).

48 See Francis, Blumenstock & Robinson (2017). Digital credit in emerging markets: A Snapshot of the Current Landscape and Open Research Questions.

49 See Cook, T & McKay, C. (2015). "How M-Shwari works: The story so far." Consultative Group to Assist the Poor (CGAP).

50 Consumers International (2017). Banking on the future: an exploration of Fintech and the consumer interest.

51 Blythin & Van Cooten, 2017, The Development of Fintech in Nairobi: Contributions to Financial Inclusion and Barriers to Growth.

52 Ibid., p.12

c. Technological concerns

The technological innovation has had a significant impact on financial inclusion and deepening in Kenya. At the same time, potential gains from the emergence of Fintech carry technological risks and introduce new vulnerabilities. These technological challenges are explained below.

i. Disruptive Innovation

Fintech is inherently disruptive for any legal system as it does not easily fit into the existing regulatory framework, thereby challenging regulators to produce an appropriate response[53]. In the same vein, digital credit firms are leveraging innovative technologies to develop new business models that are disrupting traditional lending while making a significant contribution to closing the consumer financing gap. As with any disruptive innovation, the disruptive power of Fintech innovations will manifest themselves clearly as the financial services market evolves.

ii. Illicit Financial Transactions

Digital currencies issued by the private sector are struggling to fully satisfy the functions of money, in part because of erratic valuations. In addition, they pose considerable risks as potential vehicles for money laundering, terrorism financing, tax evasion, fraud, and other financial crimes[54]. In 2015, the Central Bank of Kenya issued several clarifications concerning the legal status of virtual currencies, such as Bitcoin, warning the public to desist from transacting in Bitcoin and similar products. It remains to be seen whether the position taken by the CBK will be affected in any way by the more Fintech-friendly approach of the other regulators. For instance, the Capital Markets Authority (CMA) confirmed that it is in the process of establishing a regulatory sandboxing regime[55]. The digital credit marketplace in Kenya has also registered the entry of many unregulated players who

53 Didenko, A. (2017). Regulating Fintech: Lessons from Africa, p. 315.

54 IMF (2019) Fintech in sub-Saharan African countries: a game changer?

55 Didenko, A. (2018). Regulating Fintech: Lessons from Africa, p. 54.

do not respond to any law or regulatory authority[56]. The use of these institutions for laundering of illicit financial resources is a real concern for authorities.

iii. Hard and Soft Infrastructure

Investment in hard and soft infrastructure is needed to enable Fintech to develop and serve a rapidly growing digital generation. Hard infrastructure refers to the need for investment in internet connections and energy to enable firms to gain from the technological improvements. Soft infrastructure relates to the need for regulation to support a favorable business environment and investment in skills[57]. While Nairobi lies in the middle of the pack globally when it comes to Fintech regulation, it remains an excellent source for financial and technical expertise.

iv. Access to Smart Phones

One of the limitations to the reach of the Fintech services in Kenya relates directly to the integration and use of smartphones. Although mobile phone penetration in Kenya is high, rising to 90 percent in 2016, smartphone usage still lags behind at 44 percent as of 2016[58]. Because Fintech in Kenya is intrinsically tied to smartphone usage, not possessing a smartphone now represents one of the biggest barriers for those at the bottom of the pyramid accessing the wave of disruptive products and services offered by Fintech companies[59].

56 Didenko, A. (2018). Regulating Fintech: Lessons from Africa, p. 54.

57 IMF (2019) Fintech in sub-Saharan African countries: a game changer?

58 Kemibaro, Moses. (2016). Kenya's Latest 2016 Mobile & Internet Statistics, Website, Available Online: http://www.moseskemibaro.com/2016/10/01/kenyas-latest-2016-mobile-internet-statistics/ [Accessed 27 April 2017]

59 Blythin & Van Cooten, 2017.

d. Market System concerns

As regulators and policy-makers develop their understanding of Fintech and attempt to implement appropriate regulation, market participants continue to wrestle with concerns regarding lack of aggregate market data; stability of financial markets; conduct of market participants and reputation risk. The following section underscores these market systems concerns.

i. Lack of Market Data

Depending on the service being offered and the scale at which they operate, Fintech firms also have fewer regulations to comply with[60]. For instance, some entities that fall under the regulatory perimeter may have few or no financial reporting obligations due to their small size or because they are registered under licences that involve fewer reporting requirements than full banking licences. These technological applications and business models may not be included in traditional reporting requirements, therefore making it difficult for regulators to get relevant data and information about the true size and scope of Fintech activities as well as to monitor and respond to risks in the financial system. The lack of data and information therefore poses serious constraints to assessing the significance of the financial stability implications of Fintech. While industry and academic associations collect information on certain Fintech activities on a voluntary basis, this effort is at a nascent stage. Furthermore, the nature of the data needed by regulators and supervisors may also be different[61].

ii. Financial Market Stability

While a majority these Fintechs companies are still at the early stage and their user bases small, potential systemic risks to financial markets stability may build up unobserved, unmitigated and uncontrolled if the Fintech sector continue to grow as more providers enter the field to account for a significant share of overall financial services[62] , or if banks make greater use of similar

60 Consumers International (2017). P.21.

61 Financial Stability Board (2017). Financial Stability Implications from Fintech: Supervisory and Regulatory Issues that Merit Authorities' Attention.

62 See Bonneau, et al., 2017. P.30.

technological innovations in their credit provision[63]. A good example is the systemic importance of M-Pesa for businesses and consumers in Kenya, such that it is now a critical system for many individuals and enterprises in the country.

iii. Unfair Competition

The key goal of any regulation of Fintech should be to create a level playing field between new entrants and incumbent financial services to ensure neither has a regulatory advantage. As it is, traditional financial companies, such as banks, tend to have a higher regulatory burden, and are the focus of many different national and subnational regulatory agencies. In contrast, entrants and start-ups tend to have less of a regulatory spotlight on them. For instance, there are strict and complex guidelines for what kind of lending can be done based on the capital held by a traditional financial institution that may not apply to a lending Fintech startup that does not technically lend (e.g., a P2P lending firm)[64]. The dangers of unfair competition in Kenya are illustrated by the serious threat that microfinance banks in Kenya currently face, ironically, not directly from M-Pesa, but from the entry of banks with low-cost deposits into the digital consumer lending space. Interest rates caps imposed on their traditional credit products have encouraged banks to shift toward digital channels, where providers have largely been able to circumvent the cap. This has resulted in dramatic growth in digital credit, and signs of competitive pressure on the microfinance sector[65].

iv. Reputation Contagion

Reputational contagion is a potential concern for Fintech, particularly where activities interact directly with households and businesses. For example, significant and unexpected losses incurred on a single Fintech lending platform could be interpreted as indicating potential losses across the sector. Increased access, combined with risks like cyber risk that suffer from weak link problems, may also increase contagion risk. As Fintech firms seek to further reduce their cost base with automation and the use of AI, a lack of human supervision may entail new risks. For example, greater automation in trading strategies (more sophisticated algorithmic trading, social trading, etc.) may lead to new and unpredictable sources of contagion in financial markets[66]. Most countries appear to have taken or be taking legislative measures to mitigate Fintech-related financial integrity risks[67]. In Kenya, the CBK has already taken steps to tighten regulations aimed at mitigating Fintech-related financial integrity risks.

63 Claessens et. al. (2018). Fintech credit markets around the world: size, drivers and policy issues. BIS Quarterly Review, September 2018.

64 Lee, In & Shin, Yong Jae, 2018, Fintech: Ecosystem, business models, investment decisions, and challenges. Business Horizons, 61, 35-46.

65 Omondi, Eric, 15th January, 2019. Mobile lenders drive microfinance entities to early grave. Available online at https://www.standardmedia.co.ke/article/2001309493/mobile-lenders-drive-microfinance-entities-to-early-grave

66 Andrei A. Kirilenko and Andrew W. Lo (2013), "Moore's Law versus Murphy's Law: Algorithmic Trading and Its Discontents," Journal of Economic Perspectives 27(2): 51–72.

67 World Bank & International Monetary Fund, 2019, Fintech: the experience so far,


Reputational contagion is a potential concern for Fintech, particularly where activities interact directly with households and businesses.


© Amos Ochieng/pixelskenya.com

Next Steps for a Flourishing Fintech Ecosystem

The following are four sets of recommendations for policymakers makers, regulators, financial services providers and consumer advocacy groups that should be taken immediately in order to capitalize on this potential and to accelerate growth and innovation in the ecosystem further.

a. Policy Makers

Policy makers should:

- Develop a legal framework for Fintech that supports innovation and promotes industry growth while protecting consumers from harm.
- Create parity by ensuring that companies offering similar Fintech products and services follow similar sets of rules.
- Give incentives for Fintech startups so as to strengthen Kenya's position as the leading Fintech hub in Africa.
- Establish a multi-stakeholder platform for dialogue on Fintech.

b. Regulators

Regulators should:

- Maintain a balance when crafting the much-needed regulations to avoid creating a regulatory burden that could stifle the development of the Fintech industry.
- Rely on market data and empirical studies to inform the development of Fintech policies and regulations that support inclusion while protecting consumers from harm.
- Institute oversight mechanisms such as know-your-customer (KYC) requirements for effectively monitoring to ensure compliance with financial regulations.
- Develop a collaborative framework for effective coordination between telecom and financial sector regulators.
- Engage in international cooperation by entering into agreements with relevant bodies and authorities to facilitate learning from each other's monitoring and regulatory experiences.
- Form a multi-stakeholder policy working group on Fintech for structured dialogue to provide certainty on regulatory issues.
- Build regulatory capacity by investing in adequate resources, competent staff, relevant expertise, and right tools.

c. Financial Services Providers

Financial services players should:

- Form an industry association to represent members' interests and champion self-regulation.
- Explore partnerships with higher learning institutions and other financial service providers to offer innovative products and services that will satisfy additional customer needs.
- Proactively engage in a continued dialogue with other stakeholders such as policy makers, regulators and consumer groups.
- Enhance risk management provisions in the operations of the firm.
- Commission regular studies that will help provide data and information regarding the industry.
- Use the media and other platforms to disseminate information regarding the findings of the studies to sensitize make lawmakers, consumers groups and regulators about the pertinent issues.

d.Consumer Protection Groups

Consumer advocacy groups should:

- Work with other stakeholders to promote financial literacy for users of Fintech services.
- Empower consumers by developing online scorecards where consumers can share information with one another and rate the Fintech companies and services.
- Develop a mechanism for consumers to report complaints regarding their service provider.
- Engage in advocacy through media platforms to sensitize the public on consumer protection issues related to Fintech.

"Consumer Protection Groups should engage in advocacy through media platforms to sensitize the public on consumer protection issues related to Fintech.

About KICTANet

KICTANet is a multi-stakeholder platform for people and institutions interested and involved in ICT policy and regulation. It was was formed as part of a World Summit of Information Society (WSIS) project under catalyzing Access to ICTs in Africa (CATIA) initiative in 2003. The network aims to act as a catalyst for reform in the ICT sector in support of the national aim of ICT enabled growth and development.

Objectives of the Network are:

1. To improve the effectiveness of ICT policy and regulatory processes by expanding support for ICT initiatives, providing support for member's actions and audience for member's ideas.
2. Facilitate effective dissemination channels regarding ICT policy and regulatory processes to keep everyone updated on what is going on in the sector
3. Provide access to varied and multiple resources/skills
4. Link organisations and networks working at the community level to those specialised and working in the broader political space

Our Pillars

POLICY ADVOCACY

We work to bring stakeholders together to discuss on the best policy alternatives and also monitor the progress of policy development processes.

CAPACITY BUILDING

To ensure continuity and diversity in the policy development, we bring in new voices in the different stakeholder backgrounds through training and events.

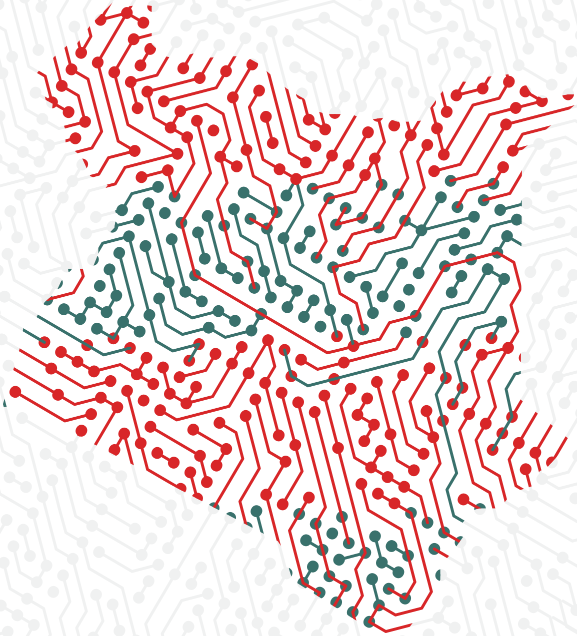
RESEARCH

Our policy advocacy and capacity building are supported by evidence based research through an established working group on both current and emerging issues.

STAKEHOLDER ENGAGEMENT

We facilitate ICT stakeholder engagement through collaborative initiatives in face-to-face Town Hall meetings, and in the KICTANet's interactive mailing list where multiple stakeholders engage regularly on ICT policy issues.

Follow us on twitter @KICTANet
www.kictanet.or.ke
Email: info@kictanet.or.ke



KICTAnet
KENYA ICT ACTION NETWORK

HUAWEI