Center for Global Development

Regulatory Impact on Mobile Money and Financial Inclusion in African Countries - Kenya, Nigeria, Tanzania and Uganda

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This paper examines the role of regulatory environment in the development financial inclusion through digital means that use of mobile phones to provide financial services such as payments and deposits. Countries which embrace financial reforms will ultimately be the ones that drive innovation in mobile financial services and build inclusive, secure, and efficient financial sectors. The paper focuses on innovative mobile phones money and banking options in four African countries - Kenya, Nigeria Tanzania and Uganda. It highlights differences among the 4 countries and their financial regulatory environment. It further examines different regulations that have influenced the development of financial inclusion through the use of the mobile financial services in the 4 countries. MNOs still face a number of challenges in these countries that may undermine the growth of financial inclusion if not addressed. The paper concludes that MFIs should upgrade their technology to be able to adopt the emerging mobile banking technology and also seek solutions that are user-friendly and easy to implement. The increased access to cell phones by the unbanked Africans is the most cost-effective and economically efficient method of providing financial services to the majority of the African populations. This is promoting financial inclusion on the continent. Thus regulators need to address issues related to: enhancement of supportive regulatory frameworks; lack and/or limited interoperability; among other to promote financial inclusion. Regulations allowing MONs-led operations such as those in East African countries have proven to be more successful than those of bank-led such as in Nigeria in terms of increased financial inclusion. While the role of the state should be to develop supportive regulatory frameworks, build the financial infrastructure and conduct financial literacy programs, private sector role would be to create operators that can provide good quality financial services at an affordable cost to the majority of Africans.

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1. Background

Economic and social inclusion has become a key guide for economic policy in recent years. Promoting inclusive growth in the economy, including financial inclusion, is critical to sustainable development as it includes the majority of the population such as the poor and the disadvantage groups in both urban and rural populations in developing countries. Inclusive growth implies "economic growth that results in a wider access to sustainable socio-economic opportunities for a broader number of people, regions or countries, while protecting the vulnerable, all being done in an environment of fairness, equal justice, and political plurality[2]".

The provision of financial and banking services at affordable cost to economically disadvantaged groups including the underprivileged and low income groups supports financial inclusion (FI). A broad range of high quality financial products - savings, credit, insurance, payments and pensions should be availed to all in order to promote FI. These must be relevant, appropriate and affordable for the entire adult population[3]. Thus the populations that have no access to these products are considered as being financially excluded and have no access to formal banking services[4].

Financial inclusion supports the objectives of financial stability, integrity, and consumer protection and drives economic and social growth. It also requires that the financial regulatory

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[2] It connotes equal access by different sub-groups, including the rich and the poor, to employment and other sources of livelihood, consumption of goods and services, such as finance, health care and to expression of voice and accountability, among other dimensions - The African Development Bank, Inclusive Growth in Operations of the African Development Bank, Issues *of Assessment,* November 2013.

[3] Financial inclusion is therefore as the ability of an individual, household, or group to access appropriate financial services or products. Without this ability people are often referred to as financially excluded. See CGAP at: http://www.breckland.gov.uk/content/what-financial-inclusion.

[4] MasterCard's "Road to Inclusion" report for the second quarter of 2014 at: http://newsroom.mastercard.com/asia-pacific/files/2014/05/MasterCard-Road-to-Inclusion-Report2.pdf. At: http://www.cnbcafrica.com/news/financial/2014/07/04/breaking-barriers-of-the-unbanked-and-underserved/).

reforms become central to national strategies for improving financial stability and integrity, protecting financial consumers, and guarding the financial system against the risks of the widespread use of cash[5]. Countries enacting supportive mobile money regulatory policies will drive greater financial inclusion as these policies are critical to the development of mobile money services. They also contribute to the inclusion of a larger proportion of those who are still excluded from accessing financial services[6]. Regulatory environment should balance the needs of advancing access to finance with the stability of the financial system. Financial exclusion is increasingly being recognized globally as a risk to political stability that impedes economic advancement[7].

The three (3) important dimensions of financial inclusion (FI) that will profoundly promote inclusive financial systems in Africa are: *access* which makes financial services available; *usage* that allows financial services accessible and affordable; and *quality* which makes financial services adapted to population's needs. FI in an economy is given by the percentage of adults that have a bank deposit and other types of financial products (Tables 1 and 2). There is therefore need for regulators to provide an environment that allows formal financial services to be made a*vailable, accessible and affordable* to all segments of the population. And more specifically to segments of the population that have been historically excluded or underserved by the formal financial sector either because of their income level and volatility, gender, location, type of activity, or level of financial literacy. This should include improved access to credit; enhanced access to savings and risk mitigation products; and a well-functioning financial infrastructure that allows individuals and businesses to engage more actively in the economy, while protecting users' rights[8].

The financial sector services play an all-encompassing role in economic development and therefore, the rate at which the poor and vulnerable groups have access to financial services provides a good measure of the extent to which the broader economic policies are deemed to be inclusive[9]. It is this lacuna of poor access in the financial services market for the poor and vulnerable groups that is availing a unique niche for mobile network operators (MNOs) to develop, enabling a growing number of people to access financial services for the first time. The MNOs are offering opportunities for partnerships between banks, non-bank financial institutions,

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[5] Countries that embrace the financial reforms will ultimately be the ones that drive innovation in mobile financial services and build inclusive, secure, and efficient financial sectors (see Simone di Castri, Mobile Money: Enabling regulatory solutions, February 2013).

[6] A mature and inclusive financial system should lead to a widespread availability of payment and other financial service in an economy.

[7] The global financial Standard Setting Bodies are changing their guidance to respond to this need to facilitate financial inclusion. The G20 has also recognized financial inclusion as an important global development priority at: CGAP at: http://www.breckland.gov.uk/content/what-financial-inclusion.

[8] Adapted from Thouraya Triki and Issa Faye, 2013. "Brief on Operationalizing Financial Inclusion at the AfDB."

[9] S. Kayizzi-Mugerwa and P. Ondiege, AFDB, Financial Inclusion in Africa: Innovation, Challenges, and the Road Ahead, Paper Presented at AERC 25 Years and Beyond Workshop, Nairobi Dec 2013.

micro finance institutions (MFIs) and international financial institutions (IFIs) to increase access to finance to all[10].

A large share of the African population is still at low income levels. This, coupled with a general lack of/ or inadequate financial infrastructure means that traditional banking models are not economical to deploy. This makes access to finance a key challenge for populations across Africa, particularly in SSA. Although financial sector in Africa has attracted new entrants in the recent past, including multinational banks, and a sharp increase in services on offer, banking penetration remains low on the continent. It is also important to note that many parts of the continent embarked on financial reforms and began sector expansion from a very low base. Therefore, access to financial services is still fairly low compared to other developing areas, and services are mostly concentrated in urban centers. However, it is observed that mobile money services are making a significant contribution to delivering financial inclusion, but much remains to be done as only about 24% of adults in SSA have access to formal bank accounts[11].

A number of current ICT innovations are changing the way financial services are being delivered and thus the rate of access as never before. These are getting support from the governments that are putting in place the requisite regulatory framework and infrastructure. This has provided an enabling environment that supports private sector participation in mobile telephony, thereby contributing toward greater financial inclusion.

The paper examines the role of regulatory environment in the development of financial inclusion through digital means, which use of mobile phones to provide financial services such as remittances, payments and deposits. It focuses on innovative mobile phones money and banking options in African countries focusing on Kenya, Nigeria Tanzania and Uganda. It examines different regulations that have influenced the development of the mobile money services in these countries, such as interoperability and agency banking and role of agents.

The Paper has 5 sections, the background, which is followed by section 2 that gives a brief background on financial services providers in each of the 4 countries, which includes: Financial development in each country: Financial market structures; banking penetration; telecommunications structure and penetration; the general regulatory structures for financial markets and telecoms. Section 3 discusses the Demand: Needs and Initiatives **-** the potential demand for mobile money services relative to current supply. In section 4, we examine the barriers and problems in the development of digital finance, focusing on regulatory issues; while section 5 discusses lessons leant - success and failure focusing on the role of differences in regulations; and on issues for the future; while the last section presents the conclusion.

2. Financial Sector Banking and Non-banking Service Providers in the 4 Countries

[10] Peter Ondiege, Mobile Banking in Africa: Taking the Bank to the People, AFDB, Africa Economic Brief, Vol.1, Issue 8, December 2010

[11] http://ssa.gsmamobileeconomy.com/GSMA_ME_SubSaharanAfrica_Web_Singles.pdf

Financial Development

The Global Financial Inclusion (Global Findex) database shows that an average of 50% of adults worldwide has an account at a formal financial institution, with the high-income countries at 89% and developing economies at 41%. Africa has the lowest formal account penetration with SSA at 24%, and the Middle East and North Africa at 18% (Table 1)[12]. Only 22% of enterprises in SSA have a loan or a line of credit compared to an average of 43% in other developing regions. Majority of Africans still use informal finance to lend, save and pay for their commercial transactions. Rotating Savings and Credit Associations (ROSCAs) are still used by close to 100 million adults in SSA alone[13].

Table 1: Number of Mobile Money Accounts/100,000 Adults, By Regions, June 2013; and % of Adult Population Having a Formal Bank Account, April 2012

Region	Mobile Money Accounts/100, 000 Adults	% of Adult Population Having a Formal Bank Account*
Sub- Sahara Africa (SSA)	24,652	24
Middle East & North Africa	15,164	18
World Average	4,361	50
South Asia	3,485	33
Latin America, Caribbean	2,165	39
East Asia, Pacific	1,657	55
Europe and Central Asia	416	45

Source: State of the Industry Claire Pénicaud & Arunjay Kataka, 2013, State of the Industry 2013, Mobile Financial Services for the Unbanked at: http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/02/SOTIR_2013.pdf; The Wall Street Journal MARKETS & FINANCE Sept ember 3, 2014 at http://blogs.wsj.com/frontiers/2014/09/03/mobile-money-the-battle-for-africa/ and * Leora Klapper and Krista Hoff, 2012, Access in developing countries to a Formal Bank Account, April 2012 – based *on global financial inclusion data collected for the new World Bank Global Financial Inclusion (Global Findex) database throughout 2011 at:* http://www.gallup.com/poll/154040/half-adults-worldwide-report-having-formal-bank-account.aspx.

Mobile financial account penetration also varies widely across regions, income groups and individual characteristics (Table 1)[14]. Africa has witnessed dramatic improvement in access to financial services over the last decade driven mainly by financial reforms and mobile financial services as well as increased private sector participation in the financial and telecom sectors. African countries are increasingly capitalizing on the growing and innovative private sector to promote opportunities for private-public participation (PPPs) in the financial and telecoms sectors. It is recognized that achieving inclusive financial systems in Africa will not happen without private sector involvement. While the role of the state should be to develop supportive regulatory frameworks, build the financial infrastructure and conduct financial literacy programs,

[12] Account penetration is defined as the percentage of adult population having an account at a bank, credit union, a cooperative, post office, or microfinance institution.

[13] African Development Bank, 2014, Senior Management Brief for World Economic Forum Meeting by Triki Thouraya, 24 April 2014

[14] Global Findex measures how adults in 148 economies save, borrow, make payments, and manage risk.

that of the private sector would be to create operators that can provide good quality financial services at an affordable cost to the majority of Africa's population.

The continent leads in population having mobile money accounts (mobile money uses the mobile phone to transfer money and make payments to the underserved) though it lags in formal banking/financial penetration (Table 1). The increased mobile phone penetration discussed below, backed by supportive regulations that allows financial services such as M-SWARI (also discussed below), would lead to increased FI in Africa.

Only 22% of adults in Africa report having saved at a formal financial institution during 2011, and 9% have taken out a new loan from a bank, credit union or microfinance institution in the past year[15]. Table 2 shows the related data for selected African countries with Kenya taking the lead among the countries in mobile money accounts[16].

Table 2: Financial Penetration - Adults with Formal Accounts, Mobile Money, Savings and Credit in Selected 5 African Countries 2011* (%)

Country	Accounts & Payments		Savings, Credit, and Insurance	
	With an account at a formal financial institution	Using Mobile Money in Past Year	Saving in the past year using a formal account	Originating a new Loan in the Past Year from a Formal Financial Institution
Kenya	42	68	23	10
Nigeria	30	13	24	2
South Africa	54	11	22	9
Tanzania	17	23	12	7
Uganda	20	27	16	9

Source: Adopted from - Asli Demirguc-Kunt and Leora Klapper, Measuring Financial Inclusion: The Global Findex Database, World Bank Policy Research Working Paper 6025, April 2012
*Population Age of 15 and above

Only 22% of adults in Africa report having saved at a formal financial institution during 2011, and 9% have taken out a new loan from a bank, credit union or microfinance institution in the past year[17]. Table 2 shows the related data for selected African countries with Kenya taking the lead among the countries in mobile money accounts[18].

The degree of financial inclusion in the four countries is indicated in Tables 3. Table 4 presents degree of financial inclusion in Kenya based on FinAcces Survey 2006-2013 and the overall usage of financial services in Uganda based on FinScope Surveys of 2013. The result of the surveys in both countries show that financial inclusion increased in Kenya (2006-2013) as well as in Uganda (2009 and 2013). It further shows that that the percentage of adult populations that are

[15] Asli Demirguc-Kunt and Leora Klapper, Measuring Financial Inclusion: The Global Findex Database, World Bank, PRW Paper 6025, April 2012

[16] Kenya is second after South Africa.

[17] Asli Demirguc-Kunt and Leora Klapper, Measuring Financial Inclusion: The Global Findex Database, World Bank, PRW Paper 6025, April 2012

[18] Kenya is second after South Africa.

financially excluded in both countries decreased during the survey periods has decreased. On the other hand, the Uganda 2013 FinScope III survey shows that the share of the adult population accessing formal financial institutions increased from 28% in 2009 to 54% in 2013 (Table 4) as non-bank formal institutions increased from 20% in 2009 to 52% in 2013.

Table 3: Degree of Financial Inclusion According to FinScope Surveys 2009/10 (%)

Country	Year	Banked	Formal Other	Informally Served	Financially Excluded
Kenya	2009	23	18	26	33
Nigeria	2010	30	6	17	46
Tanzania	2009	12	4	28	56
Uganda	2009	21	7	42	30

Source: OECD/INFE Peer Review and Regional Reports – Financial Education in Africa and Latin America - FinScope Surveys - % of Adult Population

Notes: Banked+Formal=Formally Served+Informally=Financial Included

Table 4: Degree of Financial Inclusion in Kenya FinAcces Survey 2006-2013 and Overall Usage of Financial Services in Uganda – FinScope Surveys 2006/13 (%)

Country	Year	Formal*	Formal Bank	Non-Formal Bank	Informal	Excluded
Kenya	2006	-	18.6	7.5	35.2	38.4
	2009	-	22.6	17.9	26.8	32.7
	2013	-	35.0	32.0	7.8	25.4
Uganda	2009	28	21	20	60	30
	2013	54	20	52	74	15

Source: Njuguna Ndung'u, CBK Governor , Kenya's Mobile Phone Financial Services: A Revolution In The Financial Landscape, September, 2013; and UGANDA 2013 FinScope III, SURVEY REPORT FINDINGS Unlocking Barriers to Financial Inclusion, November 2013

Notes: * In Uganda this refers to banked and non-bank formal institutions.

Table 5: Selected Number of Financial Institutions in the 4 Countries 2013

Country	Banks	Bank Branches	Insurance Companies	ATMs/100,000 Adults[5]
Kenya	43	1303	51[2]	9.94
Nigeria	25[1]	N/A	59[3]	11.39
Tanzania	52	559	26	14.57
Uganda	24	N/A	30[4]	4.0

Source: AFDB, OECD and UNDP, African Economic Outlook 2014

Notes: N/A Data unavailable; 1/ At: http://en.wikipedia.org/wiki/List_of_banks_in_Nigeria; 2/List of registered insurance companies in Kenya, 2013 at: http://www.ira.go.ke/attachments/article/47/Registered%20Companies%20-%202013.pdf; 3/ Number of registered insurance companies in Nigeria, Jan 2015at: http://naicom.gov.ng/http://naicom.gov.ng/; 4/ List of insurance companies in Uganda at: http://en.wikipedia.org/wiki/List_of_insurance_companies_in_Uganda; 5/ At: http://data.worldbank.org/indicator/FB.ATM.TOTL.P5

The Central Banks of Kenya, Nigeria, Tanzania and Uganda are mandated to supervise the banking system in the four countries. Some of the selected financial penetration indicators of the 4 countries are given in Table 5.

According to the Central Bank of Kenya (CBK), financial reforms in Kenya in the last five years or so have led to significant financial developments. These include: enhanced risk management and supervisory standards and practices; decline of the financial sector entry barriers and cost of maintaining accounts resulting in increased number of deposit and loan accounts; the introduction of innovative financial service instruments and delivery channels; and notable increase in penetration of financial services as indicated in Table 4.

The CBK is positively promoting financial inclusion policy and is a leading member of the Alliance for Financial Inclusion (AFI)[19]. In addition to the 43 banking institutions in 2013, Kenya, for instance, had 1 mortgage finance company, 9 deposit taking microfinance institutions, 2 credit reference bureaus, 5 offices representing foreign banks and 115 foreign exchange bureaus[20]. In 2010, Kenya launched agency-banking model that has since contracted 19,649 agents that have facilitated over 58.6 million transactions worth KES 310.5 billion[21].

In the 1990s, the Central Bank of Nigeria (CBN) embarked on banking sector reforms to consolidate the sector. It increased the minimum capital base of any bank to NGN 25 billion. This drastically reduced the number of banks from 89 to 24 in 2005[22]. Although the banks have shown their capacity to offer financing of big-ticket items to large creditworthy investors and to invest in government securities, SMEs which have the highest potential for driving inclusive growth are largely ignored and this could have contributed to lower financial penetration unlike has been the case in the other three countries.

In Tanzania, the recent increase in the number of commercial banks and other nonbank financial institutions (including several micro-credit institutions/companies and, more recently, mobile phone companies) has resulted in increased competition in the sector, increased financial penetration and the introduction of new products. The country is continuing with financial reforms and has introduced the Credit Reference System.

[19] CBK is one of the original 17 regulatory institutions to make specific national commitments to financial inclusion under the Maya Declaration during the 2011 Global Policy Forum in Mexico.

[20] This include including Central Bank of India and Bank of Kigali that was opened in 2013

[21] The Financial developments in the four countries discussed in this section draws from a joint AFDB, OECD and UNDP, African Economic Outlook 2014

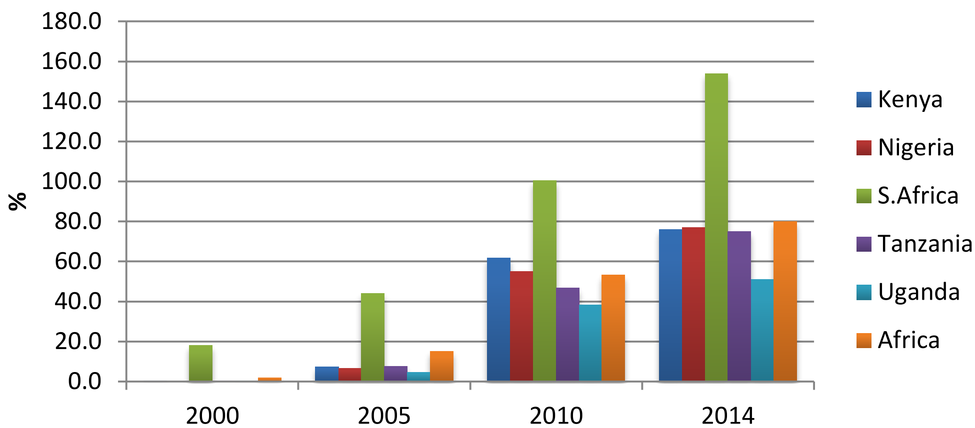
[22] Anthonia T. Odeleye, Pre-Consolidation and Post-Consolidation of Nigerian Banking Sector: A Dynamic Comparison, International Journal of Economics and Financial Issues Vol. 4, No. 1, 2014, pp.27-34

In Uganda, the Bank of Uganda (BoU) introduced Basel III additional capital requirements in 2012/13, beefing up the commercial bank's paid up capital and enabling it to comply with the UGX 25 billion requirement. It also revised the Financial Institutions instrument in 2012 to enhance the minimum on-going capital requirements for banks.

Telecommunication Structure and Penetration

In 2014, mobile phones accounted for an estimated 90% of all telephone lines in Africa. The mobile phones market penetration passed the 65% mark in early 2012 and stood at about 80% by December 2013[23]. In terms of mobile phone penetration, Africa is still the fastest growing region in the world and the second largest after Asia. This is also contributing to high competition among MNOs leading to increased financial inclusion. Africa's population has a mobile phone market of about 802.4 million people (Table 6, Figure 1 and Annex 1).

Figure 1: Mobile subscribers/100 population in Selected African countries (%)*



Source: BuddeComm based on various sources at: http://www.budde.com.au/Research/Africa-Mobile-Voice-and-Data-Communications-Statistics-tables-only.html#sthash.k2qk6LI2.dpuf; and AfricaTelecom Market 2013 via VentureBeat at: http://www.phonearena.com/news/Mobile-penetration-in-Africa-is-now-at-80-and-growing-fast_id50014.

* Data for years 2000-2010 are derived from AfDB Statistics Department and ITU, see M. Ncube and P. Ondiege, 2013

Table 6: Estimated Market Penetration rates (%) in 5 African Countries Telecoms Sector – end 2014

Market	Kenya	Nigeria*	South Africa	Tanzania*	Uganda
Mobile Phones	76	77	154	75	51
Fixed Phones	0.1	0.2	7	0.4	0.4
Internet	63	47	53	14	22

[23] AfricaTelecom Market 2013 via VentureBeat at: http://www.phonearena.com/news/Mobile-penetration-in-Africa-is-now-at-80-and-growing-fast_id50014

Source: BuddeComm based on various sources at: http://www.budde.com.au/Research/Africa-Mobile-Voice-and-Data-Communications-Statistics-tables-only.html#sthash.k2qk6LI2.dpuf

Notes: *As at end 2013

Kenya has a more improved financial access in the region among the four countries discussed in the paper. For instance, about 58.7% of Kenya's population lives within a 3km distance of a financial access touch point (Table 7)[24]. Kenyans are experiencing greater access to mobile phone financial services providers compared to banks, with 58.6% (23.64 million) living within 3km of a mobile phone money agent compared to only 21.2% (8.57 million) living near a bank branch[25].

Table 7: Population Living within a 3km Distance of a Financial Access Touch Point

Financial Access	Kenya	Nigeria	Uganda	Tanzania
Financial access touch points	58.7	42.7	44.1	28..3
Financial access touch points/100,000 people	161.7	11.4	63.1	11.4

Source: FinAccess GIS Mapping of all Financial Access Touch Points 2014

Kenya had 31.8 million mobile subscribers, a mobile penetration of 78.2% and 103,660 mobile money agents countrywide as at March 2014[26]. Safaricom remains the largest MNO (with 67.8% market share and 21.24 million subscribers)[27]. Kenya's mobile money subscriptions increased to 26.2 million in December 2014, up from 26 million in 2013[28].

In 2011, Nigeria had 20 MNOs with 93 million mobile subscribers, up from 266,000 in 2001[29]. In 2012, rural areas mobile phone coverage stood at 40% and this is expected to rise to 60% by 2015 and 100% by 2017. Mobile penetration increased to 71.5% in 2012 and is expected to rise to 97.7% by 2015.

Over 75% of Tanzania's population lived within range of a GSM signal in 2010. This is lower than

[24] TouchPoint helps improve every stage of the customer relationship life cycle across all delivery channels: the branch, ATM, call center, online banking and mobile at: http://www.fisglobal.com/products-salesandservice-branchautomation-touchpointsalesandservice. Kenya is second only to South Africa in the region.

[25] Njuguna Ndung'u: Understanding and expanding financial inclusion in Kenya, Keynote speech, Governor of the Central Bank of Kenya, at the launch of the FinAccess GIS Mapping of all Financial Access Touch Points 2014, Nairobi, 13 March 2014.

[26] The term agent or "third party" refers to any third party that acts as the primary customer interface on behalf of the mobile money provider, whether or not there is a legal contract that states that the service provider is legally accountable to the customer for the acts of the third party. In some countries, the term "correspondent," or "facilitator" is used.

[27] It is followed by Airtel (16.5% having 5.2 million); YU (with 8% having 2.6 million); and Orange (Telkom Kenya) with 8.3% having 2.2 million subscribers.

[28] Communications Authority of Kenya, Third Quarter-2014 Statistics

[29] This include MTN Nigeria; Glo Mobile (Globacom); Bharti Airtel (formerly Zain, Celtel); Etisalat Nigeria (EMTS, Mubadala); M-Tel (Nitel); Visafone; Starcomms (Capcom); Multi-Links; Reliance; Intercellular; Megatech Engineering (Zoda Fones); Telkom SA; Econet Wireless; Vodacom. Nigeria has overtaken South Africa to become the continent's biggest mobile market in the past three years (Business Monitor International Report).

that of Kenya and Uganda, where more than 90% of their population is covered by mobile networks[30]. Tanzania has 12 MNOs out of which seven are currently operational[31]. The four major operators – Vodacom, Bharti Airtel (formerly Zain), Tigo and Zantel – have mobile penetration that is approaching 70%, with annual subscriber growth of more than 20% and the four MNOs have launched mobile money platforms i.e. Vodacom (M-PESA), Airtel (Airtel Money), Tigo (Tigo Pesa) and Zantel (ZPESA).

Uganda's telecommunications industry market with seven MNOs, is overcrowded. It is experiencing price war and consolidation among the operators[32]. The No. 2 MNO in the market (Bharti Airtel) took over the No.4 (Warid Telecom), while a new operator (Smart Telecom) was launched in March 2014. In May 2014 Orange exited the market selling to Africell.

General Regulatory Framework of the ICT sector

The increased number of subscribers in these countries as a result of improved regulatory environment has led to an increase in mobile financial services over the years (Box 1). Both central banks and telecommunication agencies regulate mobile financial markets in the four countries. The regulators are offering two models i.e. a telecom-led model and a bank-led model[33]. A telecom-led model can offer savings facilities through a partnership with a bank. In this case, sharing of operations, payment instructions and branding, may well displace the telecom's position by banks. Countries that are operating teleco-led models like Kenya, have realized increased financial inclusion as discussed above (Tables 2-5 and 7). The bank-led system like in Nigeria ensures that the MNOs work as a business correspondent for a bank by furnishing the electronic link over which financial transactions may occur and also supply and retain agent network that interface directly with the customers.

In Kenya, the communications sector is regulated by Communication Authority of Kenya (CAK)[34]. Together with the Ministry of Information and Communications, CAK works closely with the Kenya ICT Authority whose mandate is to promote Kenya as an ICT destination, especially

[30] Shkaratan (2012: 23-24), World Bank.

[31] These include —Vodacom Tanzania, Airtel Tanzania, Tigo Tanzania, Zantel, Benson Informatics, Sasatel and TTCL Mobile

[32] Uganda Telecom (UTL, LAP Green, Telecel, Orascom, Deutsche Telekom); MTN; Bharti Airtel (Zain, Celtel); Warid Telecom (Essar); Orange (HiTS Telecom); i-Tel; Simba Telecoms

[33] In Nonbank-led model is a mobile financial services business model (bank-based or nonbank-based) in which the nonbank such as a telco is the primary driver of the product or service, typically taking the lead in marketing, branding, and managing the customer relationship; while bank-led model is a mobile financial services business model (bank-based or nonbank-based) in which the bank is the primary driver of the product or service, typically taking the lead in marketing, branding, and managing the customer relationship (Alliance for Financial Inclusion (AFI), Mobile Financial Services Working Group (MFSWG) - Mobile Financial Services Basic Terminology Guideline Note No.1, March 2013), at: http://www.afi-global.org/sites/default/files/publications/mfswg_gl_1_basic_terminology_finalnewnew_pdf.pdf

[34] CAK replaced Communications Commission of Kenya (CCK) in June 2014, which was established in 1999 through the Kenya Communications Act (KCA) No. 2 of 1998. CCK was initially established to regulate the telecommunications and postal/courier sub-sectors, and the management of the country's radio frequency spectrum

promoting Business Process Outsourcing (BPO) and Offshoring[35]. CAK together with the CBK has a duty to promote MNO-led model to support financial inclusion (Box 1).

The 2011 Study on the ICT Access Gaps in Kenya in 2011 shows that compared to other peer countries in Africa, Kenya is one of the leading countries on ICT and has made great advances since it started liberalizing the sector in 2000[36]. The sector is expanding and making inroads in terms of coverage as well as innovations. Some of CAK's functions include: facilitating the development of e-commerce; protecting consumer rights within the communications environment; managing competition in the sector to ensure a level playing ground for all players; and regulating retail and wholesale tariffs for communications services.

BOX 1: Central Bank of Kenya (CBK) as a Supportive Regulator

The CBK has provided support for a dynamic growth of mobile money and financial services in Kenya. In April 2010, the CBK for instance, issued new agent banking regulations which for the first time allowed banks to engage a wide range of retail outlets for transaction handling and product promotion. In response, the banks started using the M-PESA platform and associated network of M-PESA outlets as a channel for providing banking services.

Safaricom and Barclays Bank of Kenya signed a partnership in October 2010 allowing M-PESA subscribers with Barclays bank accounts to access them through their M-PESA accounts. In addition, the M-PESA agents having accounts with Barclays Bank are also able to purchase e-float for their daily operations. There are eight banks in Kenya with similar partnerships with M-PESA, including Family Bank and Kenya Commercial Bank, denoting the growing co-operation between the mobile money services and mainstream banks.

The CBK also allowed Safaricom through Vodafone to partner with Vodacom in Tanzania and Roshan in Afghanistan in 2008 as well as with Nedbank in South Africa in 2010 to unveil an M-PESA mobile-based cash transfer services in these markets. The CBK, in August 2009, authorized Safaricom to transact foreign exchange business while the UK partners were authorized by Her Majesty's Revenue & Customs (HMRC) to transact in international remittances. This led to the establishment of **M-PESA International Money Transfer Product**. Similar arrangements have been extended to other countries in East Africa.

Source: Drawn from Peter O**ndiege, 2010**. Mobile Banking in Africa: Taking the Bank to the People. AfDB, Africa Economic Brief, Volume 1, Issue 8, December 2010".

[35] The CAK Act was amended in 2009 and addresses: legal recognition of electronic records and signatures; creation of new offences with respect to electronic records and transactions including cyber-crime; destruction of electronic records and reprogramming of mobile telephones; definitions in relation to certification and electronic transactions; functions and powers of e-transactions regulator; licensing of e-certification services; and the formation and validity of e-contracts.

[36] Apoyo Consultoria, 2011 April, *Study on ICT Access Gaps in Kenya: Final Report prepared for* Communications Commission of Kenya (CCK).

The Nigeria Communications Commission (NCC) regulates MNOs and manages the Nigerian regulatory framework (2009)[37]. NCC is mandated with the responsibility of regulating the supply of telecommunications services and facilities, promoting competition, and setting performance standards for telephone services in Nigeria. It ensures that MNOs: subscribers are free to use any mobile payments system of their choice; do not receive deposit from the public except in the respect of prepaid air time billing of their subscribers; and are not allowed the use of the prepaid airtime. This seems to have not had a greater impact on financial inclusion as in the case of Kenya where regulators have allowed MNOs to handle financial transactions.

The CBN only allows bank-led and non-MNO led third party operators to operate mobile money services[38]. This policy excludes MNOs from providing mobile payments services as CBN does not have regulatory oversight over them. This limits MNOs role in the provision of infrastructure through which they can offer these services. The CBN initially licensed FirstBank/FirstMonie, Fortis Mobile Money, UBA/Afripay, GTBank Mobile Money, Pagatech, eTranzact, Monetise, Eartholeum, Paycom, FET, Ecobank and Kudi to provide mobile phone electronic payments.

MNOs in Nigeria do not own their own agent and this is holding back the expansion of financial services and financial inclusion in the country. CBN argues that a dominant MNO-led mobile money issuer could quickly create a monopoly and pose a systemic risk for the country[39]. This has contributed to slow take-up of mobile money across the country compared to Kenya and Tanzania. Nigeria has the highest number of mobile money providers in Africa (20), comprising banks and companies but this has not resulted in improved uptake compared to Kenya which is ahead of Nigeria. Thus the potential of the markets are not yet fully exploited and investment in the sector is limited[40].

In 2003, the Tanzania Communications Commission and the Tanzania Broadcasting Commission were merged to form the Tanzania Communications Regulatory Authority (TCRA). This streamlined the licensing framework leading to intensified competition in the mobile telephone sector[41]. Tanzania had seven MNOs by 2010 up from four in 2001, as a result of liberalization of the sector, making it one of the most competitive in the region.

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[37] The NCC was established in November 1992 and its roles include: - Provision of telecommunication network infrastructure; Ensure that a secure communication path is implemented; Make available, its network based on criteria which are transparent and generally applicable to all MMOs without discriminatory practices

[38] MTN had to suspend its mobile money service in late 2012 since the Central Bank's guidelines prohibit mobile network operators (MNOs) from playing a lead role in any mobile money service in Nigeria.

[39] Musa Itopa Jimoh, Mobile Money And Telco Regulation In Nigeria, Central Bank of Nigeria, International Conference On Payments System September 16th & 17th 2013

[40] Nigeria is currently witnessing low uptake of mobile money despite the fact that it has a very large mobile phone markets and high levels of rural unbanked poor people. Less money moves the mobile money services in Nigeria where there are over 170 million connected subscribers than in Kenya and Uganda with less than a combined customer base of 60 million.
[41] Shkaratan (2012: 23).

The Uganda Communications Commission (UCC) is an independent body supporting telecom-driven mobile banking model. However, it is yet to develop a comprehensive regulatory framework for mobile money services[42]. The Bank of Uganda's (BoU) has so far limited its activities in the mobile telephone services sector to the approval of banks' participation in partnerships with MNOs to offer mobile banking. In 2013, BoU set guidelines for the operators of mobile money services that require them to establish a partnership between a telecom and a financial institution before issuing a license for a mobile money service. This is to allow BoU to protect the monetary value of the mobile transactions through appropriate regulation of the financial institution.

Uganda formed a national working group comprising BoU and UCC to enhance cooperation and joint oversight of the mobile money services in order to strengthen controls around the mobile money transfer services. The regulatory environment is relatively open and does not prevent nonbank financial institutions from issuing mobile money services. In addition, the Uganda Communications ACT, 2013 consolidated and harmonized the Uganda Communications Act and the Electronic Media Act. It dissolved the UCC as well as the Broadcasting Council, reconstituting them in one body known as the UCC.

Mobile Number Portability (MNP) - Promoting MNOs Competition

Mobile number portability (MNP) allows subscribers to retain their telephone numbers when changing service providers, service types and locations. It also fosters competition among the MNOs as subscribers choose MNO depending on customer care, quality of service, value added services and the cost of communicating on the network. The success of implementation of MNP will be influenced by the porting time of the numbers and the fee charged to the subscriber.

In June 2012, following MNP implementation in Kenya in April 2011, the East African Communication Organization (EACO) agreed that all East African Community (EAC) member countries implement MNP. However, only Kenya has implemented the agreement while Tanzania and Uganda are yet to implement it as of April 2014. Nigeria also introduced MNP in 2013, which was expected to make the market more competitive and like Kenya, MNP is being implemented by third parties. Available data for Kenya and Nigeria shows that a negligible percentage (below 1%) of mobile phone subscribers has ported since the inception of MNP due to the challenges MNOs and regulators face, some of which are indicated in Table 8.

CAK introduced MNP in Kenya as a way of promoting competition and wider consumer choice in the market. This forced MNOs to lower both on-net and off-net tariffs in a bid to attract and

[42] The UCC's mandate include licensing, regulation, communications infrastructure development and the expansion of rural communications service

retain customers in their respective networks[43]. However, CAK reports indicate that MNP uptake remains very low in Kenya even after MNOs and CAK carried out mobile subscriber education. The performance of MNP in Kenya has continued to show a declining trend result, recording only 48,000 MNPs since April 2011, about 375 in-ports in October-December 2012, 275 in October-December 2013 and 254 in July-September 2014.

Table 8: Mobile Number Portability (MNP) Status in the Four Countries

Implementation Milestones	Kenya	Nigeria	Tanzania	Uganda
Planned/ Target date	2010	2009	2012	2012
Implementation date	April 2011	April, 2013	Not Yet implemented	Not yet implemented
Status/Level- Intake	Very Low	Very Low	Talks on-going	Sees no need
Porting Time (Days)	2 (Orange MNO)	30 min to 2 days	-	-
Price	KES 200 (CAK Price)	Free	-	-
Challenges - Why Low uptake/ or lack of implementation	Reduced MNOs tariff differentials; poor and inadequate dialogue and consultations between the regulator and MNOs; long porting duration experienced by the customers; club effect in the mobile telephony which is enhanced by the subscription to mobile money transfer service coupled with consumer preferences and choices; cheaper to buy a new SIM than to port; introduction of dual SIM card mobile handsets; mistrust and inadequate MNOs cooperation	NCC adopted a phased out approach to launching MNP. The porting of numbers was to begin on completion and launching of GSM porting process. MNP was initially made to GSM MNOs: MTN, GLOBACOM, ETISALAT and AIRTEL; Donor MNOs frustrating porting for fear of losing clients; loss of data on old SIM Card that must be surrendered on porting	discussions are still ongoing with the country's mobile operators, Vodacom, Tigo, Airtel, Zantel and Tanzania Telecommunication Company Ltd (TTCL)	UCC does not yet consider MNP as a requirement in the competitive market until the numbers go beyond 10 million. UCC sees MNP as a rather costly venture requiring a big subscriber base, needs further research before it is implemented and will be carried out by a third party.

In Nigeria, about 22,000 out of 114 million subscribers (about 0.02%) across all four networks have ported, with MTN accounting for 49%, followed by Globacom (23%), Airtel (17%) and Etisalat (11%) as of August 2013.

3. Demand: Needs, Initiatives and the State of Mobile Money and Financial Services Penetration in Africa

Potential Demand for Mobile Money Service

African economies have been recording improved growth since the last decade. These improvements with resultant growth of affluent consumers and underbanked population create

[43] However by end of 2012, MNP, which allows subscribers to switch from one MNO to another without losing their original numbers, remained very low in Kenya even after mobile service providers and the government carried out mobile subscriber education, according to the CCK at: http://www.humanipo.com/news/1829/mobile-number-portability-in-kenya-a-failed-project/

demand for new financial products and services. Africa is witnessing high mobile telephony penetration, mobile phone technology and high uptake of mobile financial services thereby offering an unprecedented growth opportunity for banking industry.

Mobile telephony has reduced geographical constraints, transaction costs as well as assisted commercial banks to have a costless expansion strategy[44]. Thus going mobile may increase banks' opportunities to unlock the inherent potential of underbanked segments. A number of factors such as mobile phone penetration, financial and conventional infrastructure development, population density, regulation, and the appetite of private players to pursue the opportunity tend to drive variation in mobile financial services. Currently, 36 countries out of 47 in the SAA region have mobile banking services[45].

In December 2013 Global System for Mobile Communications Association (GSMA) data shows that there are 219 deployments globally of which 52% are in SSA. In addition, there were 47 planned deployments in the region, out of 113 planned worldwide. With roughly 2.5 billion people in lower to-middle income countries who have no access to banking services, the potential is clear.

GSMA Report on Africa estimates shows that out of about one billion Africans, nearly 735 million (in 2012) are mobile phone subscribers, with Nigeria having the highest number of mobile phone subscriptions in Africa (16% of the continent's subscriptions). Regulatory reforms being undertaken by African countries, enabling growth in mobile money services are contributing to the growth of the industry in terms of number of deployments[46].

There were over 203 million registered mobile money accounts worldwide in June 2013 out of which, 98 million are in SSA. The East Africa subregion accounts for the highest share (34%) globally. By end of 2013, at least nine countries - Cameroon, the Democratic Republic of Congo, Gabon, Kenya, Madagascar, Tanzania, Uganda, Zambia and Zimbabwe - had more registered mobile money accounts than bank accounts, compared to just four in 2012[47]. This has made financial services accessible to more people than the traditional banking industry ever has[48]. In addition, many African countries also experienced robust mobile penetration between 2003 and 2013 period.

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[44] P. Ondiege, AFDB, Fostering financial inclusion with mobile banking, Private Sector and Development, Proparco, May 2013

[45] Claire Pénicaud & Arunjay Katakam, 2013, State of the Industry, The GSMA's Mobile Money for the Unbanked Program (MMU), The Bill & Melinda Gates Foundation, The MasterCard Foundation, and Omidyar Network. These include Côte d'Ivoire, Ghana, Kenya, Madagascar, Mali, Nigeria, Niger, South Africa, Senegal, Tanzania, and Uganda

[46] For instance, in 2013, mobile money services were rolled out in nine new markets worldwide: Bolivia, Brazil, Egypt, Ethiopia, Guyana, Jamaica, Tajikistan, Togo, and Vietnam.

[47] Claire Pénicaud & Arunjay Katakam, 2013, State of the Industry, The GSMA's Mobile Money for the Unbanked Programme (MMU), The Bill & Melinda Gates Foundation, The MasterCard Foundation, and Omidyar Network.

[48] It is important to note that unlike bank accounts, mobile phone accounts do not pay interest on the funds in the account or represent the possibility of a loan, and they are typically fairly small, being topped up as needed with a few exceptions like M-SHWARI in Kenya.

The high numbers of the population that have no access to formal banking financial services on the continent provides an opportunity for mobile telephony and mobile financial services deepening. In 2012, SSA had the lowest deposit institution penetration in the world (16.6%) compared to 63.5% in developing countries. But this varies considerably, ranging from 42% in Southern Africa to 7% in Central Africa and 12% in the East Africa Community (EAC) region.

In most African countries, MNOs using their agents, are taking financial services to remote areas where conventional banks have been physically absent or too expensive. Subscribers can now open accounts, check their balances, pay their bills, transfer money, and buy basic everyday items. M-banking is 19% and 54% cheaper compared with traditional banks and informal options respectively. It is also technologically the safest, quickest and cheapest method of transferring money, for conducting both personal and business transactions.

According to MobileMoney Expo 2014, there are active 113 mobile money deployments around Africa being managed by MNOs, financial institutions, microfinance enterprises and independent organizations[49]. More than 25 new deployments are expected to go live by 2015. Mobile financial services offer more opportunities for partnerships between banks, non-bank financial institutions. In many African countries, banks and MNOs are also competing to tap the market of the unbanked population. This is leading to the expansion of financial services being offered to mobile subscribers by providing mobile financial services to the unbanked.

Thus a necessary condition for M-banking to expand is for regulators, especially central banks, to put in place supportive regulatory regimes that would allow increased banks and MNOs partnerships and affordable minimum deposits requirements in favor of the poor and low income groups. This could be achieved through measures that banks like Equity bank, which is Kenya's largest bank in terms of customer numbers, are making. In May 2014, through its subsidiary Finserve Africa and with the approval of CBK, Equity bank announced that it will issue its 8.7 million customers with SIM cards that would allow them access to mobile banking and other telecommunication services. The transfer fees attract 1% the value of a transaction and are capped at KES 25. The clients would also enjoy instant loans at a maximum monthly rate of 2%, which is an effort to promote financial inclusion in the country.

Financial services evolving around mobile money include: (a) M-transfers (also referred to as Person-to-Person-P2P; (b) M-payments; and (c) M-financial services such as insurance, micro-finance, etc. all done via mobile phones. For Anti-Money Laundering (AML)/Combating the Finance of Terrorism (CFT) purposes, it is important that these financial products and services are

[49]More than 50% of the world's active mobile money services for the unbanked were located in SSA, making it the strongest region in the uptake of mobile money services of any region as of September 2014.
At: http://ssa.gsmamobileeconomy.com/GSMA_ME_SubSaharanAfrica_Web_Singles.pdf

provided through financial institutions subject to adequate and supportive regulation in line with the Financial Action Task Force (FATF) Recommendations[50].

MNOs Main Initiatives and Outcomes

East African countries' MNOs are experiencing high competition which has led to increased subscriber growth but also reduced the average revenue per user (ARPU) and quality of service that need to be addressed. The 3G and 4G mobile broadband services as well as mobile money transfer and m-banking services are supporting this rapid growth, which is also a reflection increased financial inclusion.

There is a growing number of partnerships between MNOs, banks (Boxes 2 and 3) and new players trying to get in action in Africa[51]. For instance, MTN MNO services in Africa, the Middle East and West Asia markets allow clients using MTN's MobileMoney service to receive money transfer transaction via Western Union directly on their mobile phones. In March 2012, Western Union and MTN Uganda launched a branded Mobile "Yellow Phones". This allows over 2 million MTN Uganda customers to transact across borders using their phones and to add funds to their accounts that are sent through Western Union's system[52].

BOX 2: Mobile Financial Services in Kenya

Some of the financial services offered by MNOs as a result of the CBK's enabling regulatory environment to promote financial inclusion in the Kenya since in 2007 are highlighted below:

- M-PESA international money transfer (Safaricom – Western Union - 2009)
- M-KESHO Account- M-PESA (Equity Bank - Safaricom - 2010).
- M-SHWARI - M-PESA (Safaricom - Commercial Bank of Africa (CBA) 2012).
- Co-op Bank Mobile Money Subscribers deposit and withdraw money directly from their phones using their Airtel lines
- Loan repayments and savings contributions through M-PESA (Small and Micro Enterprise Program - SMEP- a Kenyan micro-financier and Safaricom).
- Rural residents' payment for safe water through M-PESA (Grundfos LIFELINK and safaricom).
- M-KOPA - solar-powered lighting and mobile charging to rural Kenyans on a pay-as-you-go basis, with payment via M-PESA.

[50] Financial Action Task Force (FATF) Guidance, Anti-Money Laundering and Terrorist Financial Measures and Financial Inclusion, June 2011

[51] In Kenya for instance, most mobile money services offered by banks in partnership with MNOs require customers to have an existing bank account making it a partial integration, unlike M-SWARI that had Safaricom agents opening accounts for users. The World Bank research notes that partially integrated mobile banking systems are easier to manage as the bank compensates the mobile service provider for access to the network and takes its share of profits, while a full integration poses a difficulties in distribution of the surplus — depending on the relative bargaining power of the contract between the parties.

[52] Western Union and MTN was also to provide 9,000 phones to Ugandan customers who have an active MTN Mobile Money account or sign up for one in order to use the new remittance service. At http://ir.westernunion.com/News/Press-Releases/Press-Release-Details/2012/Western-Union-MTN-Announce-Launch-of-Mobile-Money-Transfer-Service-in-Uganda-Provides-9000-Branded-Mobile-Phones/default.aspx?print=1

- Lipa Karo service - allows learning institutions to receive school fees via M-PESA (institutions and Safaricom).
- Payment of electricity bills (Safaricom and Kenya Power (KPLC).
- Kilimo Salama ("Safe Agriculture") insurance - farmers insure farm inputs against drought and excess rain using M-PESA (Syngenta Foundation for Sustainable Agriculture, UAP Insurance, and Safaricom).
- Yu Mobile (Essar Telecom) launched Yu Cash (2009); Airtel money was launched (2009); and Orange launched Iko Pesa (2010).
- "Kopa Chapaa" Short term loans (Faulu Microfinance and Airtel).

Source: Prudhvi Pavuluri, Financial inclusion in Kenya, May 2014: at http://socialsciences.in/article/financial-inclusion-kenya.

In February 2014, Vodafone and MoneyGram jointly created a system to transfer funds directly from about 200 countries to M-PESA's customer base. In Nigeria, MasterCard launched a digital ID card in August 2014 that provides the holders to receive payments from abroad electronically. It also plans to roll out a mobile wallet product in the future, which will give users more flexibility in making and receiving payments. MoneyGram which operates in 52 African countries too has interests in getting involved in the mobile payment market even more deeply as African markets develop through consumer-to-consumer model. MoneyGram has also the capabilities explore the consumer-to-business model MoneyGram. It has 5% of the market share in the remittances market globally[53]. Other financial services players on the continent are setting up partnerships with mobile operators, too[54].

BOX 3: Mobile Financial Services in Tanzania

MNOs in Tanzania have invested in network upgrades, with both Vodacom and Smile Communications developing services based on Long-term Evolution (LTE) technology. A fast developing source of revenue is from mobile money transfer and m-banking services. In mid-2013 Bharti Airtel estimated that in Tanzania over 10% of GDP is transacted through mobile commerce.

Also available in Tanzania are: Smile Communications trials VoLTE services; m-commerce and m-banking developments; Tigo integrates Tigo-Pesa service with 17 major banks; in 2014, Airtel, Zantel and Tigo agreed to allow customers to send money to each other using their various transfer systems- an interoperability agreement.

Source: Africa - Mobile Voice and Data Communications Statistics Report. November 2012, at http://www.budde.com.au/Research/Africa-Mobile-Voice-and-Data-Communications-Statistics-tables-only.html#sthash.k2qk6LI2.dpuf.

[53] The Wall Street Journal MARKETS & FINANCE September 3, 2014 at http://blogs.wsj.com/frontiers/2014/09/03/mobile-money-the-battle-for-africa/

[54] In Egypt, for example, the National Bank of Egypt teamed up with MasterCard and telecom firm Etisalat to launch a mobile payment wallet that enables subscribers to transfer money using their mobile phones. At a later stage, they will also be able to pay their bills and pay for goods using their phones.

M-PESA in Kenya, which also is now available in seven African countries since its launch in 2007, has 16.8 million active customers worldwide, of which the vast majority is in Africa. It handles more than USD 1 billion in monthly transactions in Kenya alone, charging about 1% of the total amount being sent. The M-PESA technology has contributed to digital financial innovations in Kenya[55]. Also commercial banks like Equity bank in Kenya, for instance are now keen to roll out similar services with a system that enables its customers to access banking services via a specially designed SIM card for their mobile phone.

M-PESA has expanded rapidly in Kenya extending into Tanzania, South Africa, Afghanistan, India and its latest addition Romania in March 2014. In the recent past, Kenya has realized rapid expansion of money transfer and financial inclusion through mobile telephones (Box 5). M-PESA's sister services such as M-SHWARI banking services provide opportunities to the poor to save and borrow as little as USD 1.20 at any point in time[56]. The FinAccess 2013 survey results show that Kenya's financial inclusion landscape has undergone considerable change. For example, the share of the adult population using different forms of formal financial services rose from 41.3% in 2009 to 66.7% in 2013.

In June 2014, the M-SHWARI bank account raised CBA's deposit accounts to 5.6 million, accounting for 26% of the country's total. This makes it second only to Equity with 7.4 million. CBA had the highest number of loan accounts in the country buoyed by the growing number of M-SWARI, with its loan accounts increasing to 897,000 in 2013 amounting to KES 3.89 billion up from 89,000 in 2012, the year it was launched compared to Equity Bank's 840,000 (Table 9).

Table 9: Selected Data on Safaricom's M-PESA and M-SWARI 2010-2013 (KES BILLION)

Year	Deposits	Withdrawals	Transfers	Others	Airtime	P2P TXN	M-SWARI LOANS	M-SWARI Deposits
2010	382.78	345.04	387.85	24.43	17.34	161.98	-	-
Sept 2013	725.944	631.47	677.21	182.73	27.77	237.40	3.89	20.38

[55] http://www.mobiletransaction.org/m-pesa-kenya-the-lead-in-mobile-money/

[56] See Box 5 on the state of M-KESHO

Source: http://nchinampesa.safaricom.co.ke/

In addition, M-SWARI "Lock Savings Account" was introduced in June 2014 to expand financial inclusion by allowing low and poor Kenyans the opportunity to save for specific purposes. Customers can save a minimum of KES 500 (USD6) for a maximum of six months at annual interest rates of up to 6%. M-SWARI thus partly contributed to the growth of the formal financial services sector in Kenya to 67% of the Kenya's bankable population that has access to a bank account.

According to the CBN, in December 2014, Nigeria recorded a total of 15 million transactions amounting to N430 billion since mobile payment system (mobile banking) was launched in 2012 and 58 million subscribers[57].

Tanzania had two MNOs in 2008, increasing to four in 2013 providing electronic (mobile) payment as well as 14 banks offering mobile banking services. Improvements in regulations and policies to promote financial inclusion led to increased mobile money accounts from 211,000 and 2,700 agents in 2008 to 31.8 million accounts and over 153,000 agents in December 2013. By December 2013, Tanzania had 99 million mobile money transactions amounting to over TZS3.1 trillion (USD1.9 billion)[58].

In Uganda, all the five major MNOs have mobile money transfer platforms - MTN Mobile Money (MTN), Waridpesa (Warid), Airtel Money (Airtel), Msente (UTL), and Orange Money (Orange). These have partnered by many banks to provide financial services and expand financial inclusion. The number of mobile money subscribers in Uganda increased from 2.9 million in 2011 to 8.9 million at the end of 2012 as a result of increased mobile phone penetration and policies to deepen financial inclusion. This exceeded the 4.9 million bank accounts as at December 2012. The number of money subscribers further increased by 52.4% to 14 million in 2013. Uganda realized 87.5 million mobile money transactions in 2011, increasing to 242 million at the end of 2012 and by 65% to 399.5 million, while the value of the transactions grew from USH3.8 trillion (USD1.46 billion) to USH11.7 trillion (USD4.5 billion). This increased by 40% to UGX 18.6 trillion in 2013.

Other MNOs Financial Products - Mobile Insurance, Loans and Savings

The mobile insurance, loans and savings services pose challenges to MNOs as they require more customer education than mobile money products such as m-transfers. Therefore, MNOs have to build new sales forces to acquire customers for these mobile products rather than using existing mobile money agents. In addition, mobile credit and savings rely on the infrastructure created by MNOs deployments that also depend on the growth of mobile money to succeed. As a result, the

[57] http://allafrica.com/stories/201412021242.html

[58] http://www.afi-global.org/blog/2014/02/24/highlights-mobile-financial-services-landscape-tanzania-and-lessons-regulators#_ftn1

most successful deployments are in countries where mobile money has reached scale such as Kenya[59].

These mobile products and services also pose further challenges to MNOs venturing into these business lines as a large portion of the population in African countries remains largely uncovered by formal financial institutions. MNOs are also required to address issues related to identification (ID) , Customer Due Diligence (CDD) and Know Your Customer (KYC) rules, which commercial banks go through (that are discussed below) as they get involved in these new line of businesses. As a result, MNOs are partnering with financial institutions to provide these services (Box 5), which is in a way deepening financial inclusion.

Box 5: Examples of MNOs Other Products in the 4 Countries- Mobile Insurance, Loans and Savings

Mobile Insurance

Linda Jamii: About 97% of the Kenyan population has no access to healthcare because they are uninsured. This is a niche that some MNOs in partnership with other institutions are filling in order to reach the disadvantage groups in the country. In November 2012, Safaricom, Britam and Changamka Health launched Linda Jamii, a micro-insurance health cover service where subscribers use M-PESA to make contributions for their medical cover in the country[60].

Linda Jamii offers a family premium cover for KSh12,000 (US$140) per year for a cover valued at KSh290,000 (US$3,400). Beneficiaries are required to register for cover in all Safaricom shops, Uchumi and Postbank outlets as well as select M-PESA agents countrywide. The policy covers people aged 18-75 years at entry, with children under 18 covered through their parents.

Bima Mkononi: In October 2013, Airtel Kenya, Pan Africa Life Assurance Limited and MicroEnsure have launched Bima Mkononi to provide a life insurance in Kenya. This partnership enables Airtel Money customers to access affordable life insurance via their mobile phones. The underwriters of the product are Pan Africa Life while customer service and administration is undertaken by MicroEnsure.

Airtel subscribers acquire life insurance for a minimum weekly premium that will provide cover for the subscriber and a family member. Subscribers contribute KES 15 per week per person while defendants can be covered for KES 25,000 each.

Airtel Insurance in Nigeria: In 2014, Airtel Nigeria in partnership with MicroEnsure and Cornerstone Insurance launched free insurance product. It offers Airtel customers life and hospitalization insurance with increasing benefits based on monthly airtime recharge[61]. It covers all hospitalizations with no medical exclusions. This makes it widely accessible in the country.

Airtel customers get a renewable monthly life and hospitalization coverage based on the amount of monthly airtime recharged. Customers are required to recharg as little as N1,000 with Airtel each month. They get

[59] Claire Pénicaud & Arunjay Katakam, 2013, State of the Industry, The GSMA's Mobile Money for the Unbanked Programme (MMU), The Bill & Melinda Gates Foundation, The MasterCard Foundation, and Omidyar Network.

[60] http://www.humanipo.com/news/39147/safaricom-launches-mobile-micro-insurance-service/

[61] http://www.itnewsafrica.com/2014/08/nigeria-airtel-unveils-airtel-insurance/

increased insurance coverage as they increase their monthly recharge – with up to N 500,000 and N50,000 of life insurance and hospitalization cover per month[62].

MTN Nigeria Y'ello Health Insurance Scheme: In July 2014, MTN Nigeria launched an airtime-based life insurance service for its subscribers, in collaboration with National Health Insurance Scheme (NHIS). Subscribers make a daily payment of N15 daily for a N350,000 life insurance cover. It covers accidents expenses and also pays benefits for permanent disability or demise resulting from accidents.

Tigo Bima - Tanzania[63]: In July 2014, Tigo Bima partnered with MicroEnsure and Milvik to launch Tigo Bima in Tanzania. It is the first mobile insurance product in Tanzania and provides free coverage to all Tigo customers that have a minimum recharges monthly, with the level of coverage increasing with increased phone usage. It covers client's loss of life and one family member due to accident or illness. The Golden Crescent is the underwriters supported technically by Milvik, while training and administration is provided by MicroEnsure.

MTN LifeCare – Uganda: In November 2013, MTN Uganda, in partnership with AON and Jubilee Insurance, launched MTN LifeCare to provide its subscribers with affordable cover, who will a chance to secure benefits of up to USD 2,000 on a platinum life subscription costing the user USD9 annually[64]. The beneficiaries are also offered Gold and Silver packages and have to be MTN customers and those who have spouses that are already MTN registered.

MNOS Links with Banking and Non-banking Institutions – Loans and savings

Regulators in some African countries are allowing MNOs to partner with financial institutions to provide loans and credit and savings services o MNOs clients as discussed below.

M-KESHO[65]: was launched in May 2010. It is a mobile phone banking and savings platform that enables Equity Bank customers to save or withdraw money and also borrow small loans from their mobile phones. Its main features are: Accessibility of the service is through M-PESA Menu service; M-KESHO Account is affordable with no Charges, no ledger fees and no minimum balance; and M-KESHO Account holders' registration is free of charge at any Equity Bank outlet & M-PESA Agents[66]. It allowed people with no banking history to open a savings account at Equity bank and to use M-PESA transaction records for six months as a credit history source to borrow. After the launch of M-KESHO, Equity launched similar products with Safaricom's rivals yU and Orange further complicating the relationship[67]. In February 2012, M-KESHO uptake rate had declined as it had only 799,532 accounts compared to 613,000 subscribers it had in six months when it was launched in 2010.

M-SHWARI: In 2012, Safaricom and Commercial Bank of Africa (CBA) launched M-SHWARI as a bank account for M-PESA customers and it rides on the M-PESA platform. It is available to M-PESA customers and allows clients to access a CBA account for savings (which pays graduated interest from 2% to 5%) and short-term

[62] http://www.thisdaylive.com/articles/mtn-introduces-life-insurance-service-to-subscribers/162996/
[63] http://www.microensure.com/news.asp?id=148
[64] http://www.humanipo.com/news/36811/mtn-uganda-offers-life-insurance-cover-to-customers/
[65] The suspicion between Equity Bank's and the then Safaricom CEOs delayed development of what would have passed as the first mobile banking application before its eventually demise, though technically the service is still in the market at: http://mobile.nation.co.ke/lifestyle/Book-reveals-how-rivalry-killed-first-mobile-banking-app-/-/1950774/2211028/-/format/xhtml/-10kgxfwz/-/index.html

[66] http://www.equitybank.co.ke/index.php/self-service/mobile-banking/m-kesho

[67] Mthuli Ncube and Peter Ondiege, 2013, AFDB, Silicon Kenya, Harnessing ICT Innovations for Economic Development, June 2013

loans[68]. Customers can save as little as Ksh1 and obtain immediate loans from KES100 (subject to satisfactory credit checks) that are repayable within 30 days at a flat interest rate of 7.5%. Clients can borrow Ksh. 20,000 (about $240), but the amount is dependent on the amount of money individuals have saved and how regular they use the service. The M-SWARI savings accounts generate an interest rate of 5% per year. M-SWARI signed up 3.5 million customers its first six months that saw USD 11.7 million being accumulated in savings, and the disbursement of more than USD 22.4 million worth of loans.

The CBA uses information from Safaricom (Age and ID or passport number originally supplied to M-PESA when the account was opened) and is also granted access to Credit Reference Bureau information and a new Integrated Population Registration System (IPRS) set up and maintained by the Government. Customers with balances of KES 500,000 (USD 5,718) are required to provide their tax Personal Identification Number that has to be validated against the Kenya Revenue Authority electronically.

Faulu Airtel Kopa chapaa[69]: In May 2012, Airtel Kenya and Faulu Kenya launched 'Faulu Airtel Kopa chapaa Service' that provides short term credit and emergency advance to Airtel customers repayable in 10 to 30 days. The Airtel subscribers access cash advances quickly and conveniently.

Kenya Commercial Bank Launches M-Benki Loans & Savings Services[70]: In October 2013, Kenya Commercial Bank (KCB) became the second bank after CBA in the Kenya to allow M-PESA customers to borrow and save money without opening a bank account. Through this partnership of this product is KES1,000 while average loan is KES 1,100.

M-PAWA: In May 2014, Vodacom partnered with the Commercial Bank of Africa Tanzania (CBA) launched M-PAWA. The product allows subscribers who must have at least been with the M-PESA for at least 6 months, to borrow money via their M-PAWA accounts[71]. Clients access credit of up to TZS 500,000 (USD 300), depending on the credit score, in an eight seconds process, while incurring in a one-time fee of 9% of the amount borrowed. M-PAWA subscribers will also earn interest on their M-PESA account savings.

Mobile Money Atm Cash Out Service[72]: In October 2013, MTN Uganda and Crane Bank Ltd launched a partnership that allows MTN customers to withdraw money from Crane Bank ATMs using their mobile phones. Any person whether holding a Bank account with Crane Bank or otherwise can withdraw money from an MTN mobile money wallet at any of Crane Bank's over 100 ATMs spread across the country 24 hours a day 7 days a week. This product caters for the Ugandan population that are both banked and the unbanked.

M-PESA Initiatives Support for Technological Innovations

[68] http://mfcny.org/event/m-shwari-%E2%80%93-revolutionary-mobile-savings-and-loans-product-kenya

[69] http://www.mobileworldmag.com/airtel-and-faulu-kenya-launches-cash-advance-service-through-mobile-money/

[70] http://www.technologybanker.com/mobile/kenya-commercial-bank-launches-m-benki-loans-savings-services#.VB17kfmSxqU

[71] http://www.tanzaniainvest.com/banking-finance/news/1125-tanzania-launches-mobile-phone-loans-and-savings

[72] https://www.cranebanklimited.com/index.php/mtn-mobile-money-launch

M-PESA in Kenya has contributed to the digital financial innovations as well as innovations in other sectors such as health, agricultural and education, some of which are highlighted in Box 6 below.

Box 6: The M-PESA Technology

Kopo Kopo service - payment of services are through M-PESA. It is has no monthly fixed fee and is free to sign up and attracting only 1% of the transaction costs. The service providers track transactions and identify sales trends and market insights.

M-Kopa technology - partnered with Safaricom M-PESA to provide clean energy solution to about 3 million Kenyans. M-PESA subscribers purchase the solar home lighting solution on hire purchase and can own it by making a deposit KES 2,500 and pay KES 40 daily for a year.

M-Ticketing - clients, pay and receive a ticket from any location and at any time using M-PESA services to book a ticket.

M-Farm - farmers use Safaricom to update information on the markets. Farmers and potential buyers are through the current market place and agro-trends and get the retail price for their products. They also buy their farm inputs directly from manufacturers.

MedAfrica app from Shimba technologies connects Kenyan to reliable health care information. It provides lists of certified healthcare providers and availing a diagnosis feature. It gives a list of suitable hospitals and specialists and information on the hospitals location. It also provides First Aid advice, women's health information and diet tips.

Eneza education - a virtual tutor assistant and operating on low cost mobile phones, helps students revise for main exams. A student is able to register for a course, access the studying material, take quizzes and tutorials, ask their tutor questions live and also get graded on the performance in all the subjects being studied.

4. Barriers in the Development of Digital Finance - Regulatory Issues

A recent study shows that 50% of adults worldwide remain unbanked with 35% of them commonly reporting the barriers to financial inclusion as being: inadequate and low incomes; high cost; physical distance; and lack of proper documentation, which limit access to financial services in Africa. As discussed in section 2, there are significant differences across regions and individual characteristic[73]. Discussions in sections 2 and 3 have demonstrated how sector regulatory reforms have to some extent expanded financial inclusion in the four countries although more still needs to be done to deepen this.

[73] Asli Demirguc-Kunt and Leora Klapper, Measuring Financial Inclusion: The Global Findex Database, World Bank Policy Research Working Paper 6025, April 2012

These barriers stem particularly from inadequate supportive regulatory environment, deficient infrastructure, physical-geographical isolation or inaccessibility, and financial illiteracy that countries need to resolve. All these culminate into an exceedingly high cost of providing banking services and other financial services. Most of these barriers can be addressed by policy makers through financial and telcom sector reforms that would provide enabling regulations to promote financial inclusion. As noted above, this limited access to formal financial services has at the same time created a unique niche for MNOs to provide mobile financial services and other technological innovations to develop, enabling a larger proportion of the population to access financial services.

The slow pace at which reforms are being implemented in some African countries makes it difficult for private operators to engage in the financial sector without a conducive regulatory framework. This, as well as limited financial and non-financial capacity of some countries to conduct financial inclusion surveys, have become part of the major barriers to achieve better financial inclusion in Africa[74]. Deliberate and significant efforts must therefore be deployed to address existing barriers, mainly inadequate regulatory frameworks, deficient infrastructure, limited inter-operability, and lack of financial literacy for Africa to fully benefit from these innovative platforms and solutions.

Some African countries do not have effective regulators and laws that would deepen financial reforms including those governing mobile financial services. A number of central banks such as NCB continue to maintain that any form of banking must be undertaken by licensed deposit-taking institutions, which excludes MNOs. Unsupportive or lack of effective regulatory environment may lead to friction between MNOs, financial institutions and central banks with regards to mobile financial services. This will negatively impact on MNOs service delivery to the unbanked population.

In countries where regulators do not allow mobile money businesses to set up effective distribution networks or to register, identify, and activate clients such as In Nigeria, financial inclusion is constrained (Box 7). It also creates major disincentives to investments and delays the generation of positive cash flow, making it too burdensome for MNOs to address operational challenges[75].

[74] Financial inclusion surveys that are well conducted would assist in identifying gaps and needs, offer financial literacy programs and supervise abusive behaviors of financial institutions

[75] Simone di Castri, Mobile Money: Enabling regulatory solutions, February 2013

Box 7: An Outcome of CBN Policy - Weak Performance of Nigeria MNOs

The inability of NCB to allow MNOs to implement mobile money is slowing the rate of acceptance of the mobile money services scheme. A facilitating regulatory environment can help unlock successful services in the country. For instance, the June 2013 GSMA estimates show that there were still less than one million customers using mobile payments services in Nigeria (which is below 1% of the population).Thus Nigeria is lagging behind Kenya, Tanzania and Uganda.

Tanzania which has an adult population of 25.8m (just 33% of Nigeria's adult population) already has 11 million mobile payment services accounts that are active on a 90-day basis. In September 2013, the four Tanzanian MNOs facilitated transactions worth TZS 2.8 trillion (USD 1.6 billion), which is 26 times greater than Nigeria's N10.14 billion/month (USD61.4m).

Source: GSM Association (GSMA) June 2014 Mobile for Development (M4D) report on Nigeria at http://leadership.ng/news/383829/rise-rise-mobile-money

For the provision of mobile financial services to succeed regulators need to create an open and level playing field that allows non-bank mobile money providers, including MNOs into the market as well as encourage competition among the players in the market. They need to address some of the critical issues that impact the financially excluded and the deepening of financial inclusion. Some of these issues are highlighted below and include: consumer protection; security and related AML/CFT; interoperability; agency issues; and Payment Systems and E-Money.

Thus mobile money services has the capacity to significantly expand financial inclusion under supportive regulatory environment that will result in lower transaction costs, improved access to underserved areas, and higher levels of customer convenience as seen in Kenya. For instance, a simplified and converged licensing regime introduced in 2008 in Kenya has lowered the barriers to market entry and increased competition by allowing operators to offer any kind of service in a technology- and service-neutral regulatory framework.

Competition in Telecommunications Sector and Financial Inclusion

The telecoms sector in Africa is experiencing cut-throat competition as most countries have at least more than two MNOs (Annex 1) driving voice calls prices to rock-bottom. However, the broadband services costs are still relatively high as international and domestic fibre optic infrastructure are inadequate. The arrival of a number of undersea fiber cables in the region in the last 3-5 years is boosting fibre optic infrastructure and helping to lower these costs[76]. The African market is almost entirely prepaid and highly cost-sensitive, which leads to a much lower average revenue per user (ARPU).

[76] Mthuli Ncube and Peter Ondiege, 2013, AFDB, Silicon Kenya, Harnessing ICT Innovations for Economic Development, June 2013.

Since 2008, Kenya's mobile communications sector is witnessing price wars and competition following the market entry of the two MNOs (Yu and Orange). This has led to increased subscriber growth but MNOs profitability is facing challenges as ARPU in the voice market are falling. The MNOs are streamlining their operations and developing new revenue streams through 3G mobile broadband services and mobile payment and banking services. This competition has prompted the major international shareholders in Yu to quit the market and Orange to announce plans to exit the Kenyan market in 2014[77].

In April 2014, CAK licensed three Mobile Virtual Network Operators (MVNOs). MVNOs will use the existing MNOs infrastructure on a commercial basis to launch mobile financial services[78]. Equity Bank, using Airtel's 60% excess infrastructure capacity, intends to convert its nearly nine million banking customers into mobile customers, offering them all the services – voice, data, mobile money and other value added services. CAK is following a unique open-access approach with plans to license a multi-facetted consortium to operate the fourth generation (4G) technology network[79].

The NCC is tightening price caps and mandating further reductions of interconnection rates in the Nigerian telecoms market. Like in Kenya, The ARPU levels are declining and MNOs are forced to streamline their operations and to develop new revenue streams from services such as 3G/4G mobile broadband, mobile payments/banking, and others. Nigeria is also witnessing mergers and acquisitions (M&A) amongst Nigeria's smaller operators, many originating from the fixed-wireless sector using CDMA-2000 technology.

Tanzania's policy reforms have liberalized the telecom sector but investors and operators face high import tariffs on telecoms equipment and taxes on telephone services. Tanzania has eight operational MNOs, with four additional players licensed under a new converged regulatory regime creating high competition in the sector. Like in other countries in East African region, Tanzania telecoms sector is experiencing price wars and declining voice ARPU, which is adversely affecting the smaller operators. However, the country is experiencing a fast developing source of revenue from mobile money transfer and m-banking services.

Uganda has no legislation governing mobile money services though BOU put in place guidelines in 2013 for mobile money service emphasizing on the need for a partnership between an MNO and a financial institution before start up. This partnership is to ensure that BOU can protect the monetary value of the mobile transactions through appropriate regulation of the financial

[77] In late 2014, Safaricom acquired yuMobile's network, IT and office infrastructure, while Airtel company's subscribers.

[78] These MVNOs are: Equity Bank's subsidiary Finserve Africa Limited, Zioncell Kenya Limited, and Tangaza Mobile Pay Limited. The three firms plan to provide services via the network of Airtel, which has 287 million customers in 20 countries. And Kenya Airways has also applied for a license to operate an MVNO.

[79] 4G is Long Term Evolution (LTE)

institution. Banks partnering with MNOs have the responsibility to manage the financial services data, KYC requirements, consumer protection, and liquidity management by agents.

Uganda has seven MNOs that are are overcrowding the market leading to a price war and M&A among the operators. In 2004, Bharti Airtel which is number 2 took over took Warid Telecom that is number 4 in the market. And in March 2004, Smart Telecom was launched, while Orange was acquired by Africell. Like in Kenya and Tanzania, competition has led to declining ARPU and also quality of service. The MNOs are now raising additional revenue streams through 3G/4G mobile broadband services as well as mobile money transfer and m-banking services.

Interoperability and Interconnectivity

In June 2014, Tanzania's MNOs and banks became the first in African to sign an interoperability agreement that is to promote interconnected mobile money services with interbank networks and MNOs. This was followed by Kenya in July 2014 when Safaricom, opened up its M-PESA agency network to Airtel, relaxing the exclusivity of its agents condition (Table 10). However, it is too early to assess the impact of interoperability on financial inclusion in the two countries, but should lead to deepening financial inclusion.

Table 10: Interoperability and Interconnectivity - Status in the Four Countries

Interoperability and Interconnectivity	Kenya	Nigeria	Tanzania	Uganda
Regulations in Place	Yes	Through Guidelines	Yes	Through Guidelines
Implementation date Interoperability	July 2014	Not Yet	June 2014	Not yet
Implementation date Interconnectivity	Safaricom-Western Union 2009; Airtel-VISA Feb 2015	-	-	MTN Uganda-Western Union, March 2012
Country's Readiness	Adequate critical mass coverage by Safaricom covering most rural areas	There is large mass and growth of SMS and Voice markets in the country	Adequate critical mass coverage by MNOs as they are covering most rural areas	Adequate critical mass coverage by MNOs -covering most rural areas
Challeges	Inadequate consultation and lack of willingness of the MNOs involved to implement the directives of the policy; inadequate coverage by others MNOs unlike Safaricom	According to mFino, MNOs have formed 'walled gardens' where a customer affiliated with one operator's mobile money service is unable to send money electronically to a customer affiliated with another operator's service - this restricts growth and potential business opportunities; The potential exists but MNOs are not allowed to directly engage with money transfers as this is only handled by banks	-	Lack of supportive regulations

Interoperability implies money moving between mobile financial services accounts of different MNOs and between mobile money accounts and bank accounts[80]. On domestic front, when international remittances is put aside, interoperability implies the ability for: customers of any mobile money operator (MMO) to connect with a range of other types of financial service provider, such as banks and payment services providers (PSPs). This could be referred to more accurately as interconnectivity; while that of customers sending e-money between MM accounts provided by different MMOs on different platforms as interoperability, which is the case of Tanzania and Kenya.

The mobile money services ecosystem users would benefit more from these services when they are offered across MNOs platforms i.e. when there is interoperability and interconnectivity among the MNOs. This would enhance financial inclusion objectives. The benefits of interoperability include: deepening the penetration of mobile money, lowering cost of transactions, broader customer choice, increased competition, cooperation and break down of dominant positions. Interoperability allows MNOs to engage with each other and with banks, financial institutions regulators, and ecosystem partners, identify and implement solutions. It will allow more mobile financial services to be delivered to a broader range of people across regions, while maintaining high service quality.

Interoperability and interconnectivity policies and regulations need to take into account factors such as: the maturity of mobile money deployment, costs and benefits, impact on market competition and dialogue with issuers[81]. This will ensure that such policies and regulations benefits both customers and providers.

In April 2014, the GSMA announced that nine MNOs operating in Africa and the Middle East are to work together to accelerate the implementation of interoperability and interconnectivity mobile money services across the two regions. These MNOs have 582 million mobile connections across 48 countries in the two regions. The GSMA's Mobile Money Interoperability (MMI) program is to identify and share best practices, guidelines and processes, creating performance benchmarks, and providing regulatory support[82].

In Kenya, until recently, there was no interoperability among any of the MNOs and yet M-PESA is still enormously successful. In July 2014, Safaricom opened up its M-PESA agency network allowing its 85,000 agents to sell products offered by its competitors[83]. However, Airtel users, cannot send money to M-PESA users as there is no link between the two MNOs' mobile money

[80] http://www.cgap.org/blog/tanzania-ready-interoperability-mobile-money

[81] PesaAfrica, The Role of Regulators in Mobile Money Deployment April 2014: at http://pesaafrica.com/2014/04/07/the-role-of-regulators-in-mobile-money-deployment/

[82] These include Bharti Airtel, Etisalat Group, Millicom, MTN Group, Ooredoo Group, Orange, STC Group, Vodafone Group and Zain Group The GSMA's MM program is a global one and includes MNOs from other region at: http://www.gsma.com/newsroom/operators-commit-accelerate/

[83] Safaricom's unilateral move is said to have come just before CAK ordered it to open up its extensive network of 85,000 agents to rivals.

systems[84]. In addition, Safaricom signed interconnectivity agreements with Western Union in 2009. And more recently in February 2015, Airtel signed an agreement with partnership with VISA International that will allow customers will be able to pay online and in stores where Visa is accepted and also withdraw from their Airtel money accounts.

In Nigeria, mFino, the leading mobile financial services platform company, is set to unlock the potential of mobile money through interoperability across various mobile money and bank deployments[85]. This will involve several mobile money operators, financial institutions and MNOs.

In June, 2014, Tigo, with over 6.2 million customers in Tanzania overall and 3.4 million users of its Tigo Pesa, joined with Airtel and Zantel to announce a pioneering agreement to allow their respective subscribers in Tanzania to send money to each other. This will allow over 16 million to send money by mobile to each other in Tanzania, regardless of network[86]. IN February 2015, Vodacom signed an agreement with Tigo Pesa where customers will transact with six million Vodacom M-PESA customers later in 2015[87]. The operational regulations for interoperability for this agreement were crafted jointly with the four main MNOs and the two of the largest banks - CRDB Bank and National Microfinance Bank - as well as the Bank of Tanzania. These four MNOs share of the mobile money market are: Vodacom M-PESA (53%); Tigo PESA (18%), Airtel Money (13%) and others (16%).

In Uganda, users of mobile money services are required to affiliate with multiple mobile providers as the country has no interoperability. In March 2012, MTN Uganda signed interconnectivity agreements with Western Union, which will allow about 2 million customers of MTN's Mobile Money, in Uganda to connect with 450,000 Western Union Agent locations in 200 countries and territories.

KYC/AML/CFT and Identification (ID) Issues

For any financial institution, Know Your Customer (KYC) is the process of verifying the identity of its customers. KYC ensures that agents, consultants are anti-corrupt/bribery compliance. As such, financial institutions are increasingly demanding that customers provide detailed Customer Due Diligence (CDD) information, to verify their probity and integrity. The KYC objectives and guidelines are to prevent financial institutions from being used, intentionally or unintentionally, by criminals for money laundering activities; and to know or understand their customers, and their financial dealings better so as manage their risks prudently. The key components of KYC

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84 The M-PESA's unilateral move came just before CAK ordered it to open up its extensive network its agents to rivals.

85 http://www.financialtechnologyafrica.com/top-stories/747/mfino-to-enable-interoperability-for-mobile-money-in-africa/

86 Millicom which offers a range of digital services to over 50 million customers primarily under the Tigo brand in 14 markets in Africa and Latin America in February 2014 launched the world's first cross-border mobile money service with currency conversion between Tanzania and Rwanda. Tigo integrates M-PESA service with 17 major banks in Tanzania.

87 http://www.africanbusinesscentral.com/2015/02/26/millicom-and-vodacom-bring-mobile-money-interoperability-to-tanzania/

policies include: customer policy; customer identification procedures; monitoring of transactions; and risk management, some of which are highlighted below.

The Financial Action Task Force (FATF), continually works with Central Banks and sets standards for AML (Anti-Money Laundering)/ CFT (Combating the Finance of Terrorism) guidelines for prudential regulation of banks[88]. Also a constant threat of criminal activities related to AML and CFT activities as well as local crimes requires MNOs and banks regulators to put in place measures that service providers have to adhere to in providing mobile financial services through CDD and KYC rules.

The CDD and KYC rules need to provide room for flexible regulations that support the poor and unbanked persons if financial inclusion objectives are to be achieved. However, it still remains critical that both MNOs and bank regulators ensure that financial services offered by the MNOs including their agents are subject to proper regulations that promote financial inclusion. The due diligence activities in the four countries are discussed below.

Identification (ID)

Most telecom regulators in the four countries require MNOs to ensure that their clients register the SIM cards, which ultimately serve as client identities. Clients are also required by MNOs, and as provided for by the central banks, to register their mobile money accounts. In the process, a range of personal IDs such as National ID cards, passports and other relevant documents of identification are required (Table 11). This requirement has an impact on promoting financial inclusion especially in area where national IDs or equivalent are difficult to get or are hardly available.

In Kenya, for instance, potential mobile money customers such as the youth below 18 years and some of the rural population, who are mainly unbanked, may not have proper identification. However, identification of users is necessary to curtail AMF/CFT risks. Registration of SIM card and mobile money accounts could in away serve this purpose and also meet financial inclusion objectives while preserving the integrity of the financial system.

In June 2010, CAK compelled all MNOs to register all subscribers SIM cards in order to meet KYC conditions for mobile money services subscribers and also partly combat phone-related crimes. To register, a subscriber has to produce personal identity particulars such as national ID cards or national passport and proof of residence. The information required for SIM cards registration includes: full names, phone number, passport- size photograph, Valid ID card, and physical address, postal address, gender, date of birth and alternative contacts, which have to be verified by agents[89].

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[88] PesaAfrica, The Role of Regulators in Mobile Money Deployment April 2014 - http://pesaafrica.com/2014/04/07/the-role-of-regulators-in-mobile-money-deployment/

[89] For instance, MTN Uganda requires subscribers to provide the information that includes: full name; physical address; date of birth; gender, mobile number; identity card; source of income; and any other information deemed necessary.

The banks in Kenya also require similar ID documents for registration of mobile banking client and others (Table 11). In addition, the regulators demand for the physical presentation of the individual client before opening an account with the MNOs agent or the bank. The current KYC requirements impose obligations on banks as well as MNOs providing mobile financial services to collect and verify identification documents (IDs) of prospective clients[90]. There are no specific KYC exemptions for small accounts or indication of a risk based approach to KYC in Kenya[91]. M-PESA, for instance, has leveraged on the national IDs and passports issued by the Kenyan government in their business processes to satisfy their KYC requirements.

Table 11: Identification (ID) Issues - Status in the Four Countries

Milestones and ID Issues	**Kenya**	**Nigeria**	**Tanzania**	**Uganda**
Planned/ Target date	-	2005-07	1968	1968
Implementation date	Since 1963	2014	2013	2014
Biometric ID	Since Nov 2014	2014	2013	2014
Minimum Age for ID - Years	18	16	18	18
SIM CARD/Mobile Money Account registration - range of documents Requirements	AIRTEL MNO: Kenyan citizens: National ID, Passport, Driving License, Military ID, Student ID and Letter from Chief; Foreigners: Passport, Driving License, Work permit, Student ID, Alien Card, Original ID	MTN NIGERIA MNO: Passport, Driving License, Birth Certificate	VODACOM TANZANIA: Voters ID, Passport, Employer's ID, Driving License, Pension ID, Student ID and Letter from Village/Ward Executive Officer,, Photo.	MTN UGANDA: Valid Passport, Driver's License, Student ID , , Employer's Card, Voters Card, Letter of Credit (LC) Card
Opening of Bank Account - range of documents Requirements – Standard Chartered Bank in the 4 countries	One passport size photograph; Original / copy of National ID or valid passport; Proof of residence; either utility bill / tenancy agreement; Minimum opening balance of KES 2,000	Evidence of source of income: staff id or letter of employment or Form C07; 2 suitable references – Internal or External on Direct; 2 Passport photographs; Identification – Valid International passport, Driver's license, National Identity card or Voter's card; Address verification of residential address for authorized signatories: Current Utility bill (not more than 3 months old) or documented staff visit or signed tenancy agreement. NGN 50 stamp (sign across); Initial deposit.	One passport size photograph; Original & Copy of ID or valid passport; Proof of residence; either an electricity bill/water bill/tenancy agreement	One passport size photograph; Original & Copy of ID verifying your full names, nationality and date of birth; Proof of residence - either an electricity bill/water bill/tenancy agreement addressed to you; Minimum opening balance of TZS100,000; USD/EUR/GBP 1,000.

[90] In Kenya, National ID Card is the main and legal identification document recognized and has to be produced when one opens mobile money account or a bank account. It is also required for registration of a business, for employment, acquisition of a driving license, and many other uses that require proof of identity.

[91] Eva Gutierrez and Tony Cho Mobile, 2014, World Bank.

All phone subscribers in Nigeria have now to be registered since March 2011[92]. The MasterCard-branded National Electronic (e-ID) card managed by the Nigerian Identity Management Commission (NIMC) was launched in August 2014 is to be issued to 13 million Nigerians. This biometric-based verification card provides an electronic payment solution and the broadest financial inclusion program in Nigeria and provides security, convenience and reliability of electronic payments. It integrates and harmonizes all identity databases such as: the Driver's License, Voter Registration, Health Insurance, Tax, SIM and the National Pension Commission (PENCOM) into a single, shared services platform. Each adult Nigerian will be issued with a unique National Identification Number (NIN), followed by the national e-ID card by NIMC.

Ugandans and Tanzanians, until 2013/14, did not have national ID cards. Tanzania introduced a stringent SIM registration policy, requiring new customers to have a physical ID. In March 2013, it introduced biometric national ID card, which might in the short run dampen growth in the number of mobile subscribers for some operators. However, it will deepen financial inclusion given the experience the issuance of IDs in Kenya.

Similarly, in Uganda, mobile money users are required to register with the MNOs. In April 2014, it started a massive registration exercise to ensure every citizen gets a national identity card. The IDs will be digitized and is expected to bear the holders' photo, names, and biometric details. This too will promote the expansion of financial services in Uganda.

Agency Banking and the Role of Agents

Agency banking allows financial institutions to extend their services to previously unbanked individuals. A banking agent could be a retail, postal or a kiosk outlet contracted by a financial institution or MNO to process clients' transactions. Normal banking services - cash deposits and withdrawals, disbursement and repayment of loans, salary payments, pension payouts, transfer of funds and the issuing of mini bank statements can now be offered by agents, all through shared infrastructures[93].

Overall, regulators require all agents to register their Agent line by completing registration of their lines and obtain their own Mobile Money PIN (MM PIN). Overall, agents are required to facilitate SIM card upgrade for customers registering for Mobile Money, educate customers on Mobile Money, and provide deposits and withdrawal transactions. Agents must keep a maximum balance and transaction limit that are much higher than customers and are also not allowed to receive mobile money from another agent.

In Kenya and Tanzania, MNOs have used extensive distribution agency networks and brand to grow scale and catalyze development of other sectors through payments, transfers and insurance. The third party network adopted by mobile money in East Africa has been essential to

[92] In early 2008, Nigerian security agencies asked NCC to assist in resolving crimes perpetrated through the use of phones.

[93] http://www.technologybanker.com/it-ops/agency-banking-creating-opportunity-in-africa#.VPocufmUdqU

its expansion and success. It extends the reach to remote areas and closer to people. This is one of the ways mobile money was able to surpass incumbent banks, compelling them to fast track the adoption of an agency banking model in countries like Kenya. The agent network is a key area of competitive advantage for competing MNOs.

Table 12: Agency Banking and Role of Agents - Status in the Four Countries

Milestones in Agency banking	Kenya	Nigeria	Tanzania	Uganda
Planned/ Target date	2009	2005-07	1968	1968
Implementation date	2010 but Safaricom agents in place since 2007	Aug 2013 CBN Guidelines	2013 Guidelines offered by BoT	Not Yet except for MNOs agents
Implementation Status*	CBK licensed over 10,000 as agent banks with 8,809 agency outlets opening in 2010 alone, most of which are operated by Equity and Co-operative banks.	CBN Guidelines - not launched as July 2014. Agents are to be appointed and monitored by their principals – the financial institutions	June 2013 CRDB Bank PLC - pioneers Agency Banking in Tanzania; MNOs agents in place	Nov 2014, BoU to fast track Financial Institutions Act 2004 amendment for agency banking
Challenges*	Efficient handling of cash transactions for agency banks due to the more than 30,000 mobile money outlets in the country. Large number of agents is limiting profitability per agent making them dissatisfied. Agencies still too tied to banking; Banks are now also driving agent banking, and while they do seem to be adding value to the system they have yet to reach the scale of agents' mobile money providers have on the market.	Regulatory uncertainty is discouraging serious, long-term business deal - strict limits on Tier 1 transaction levels is increasing the cost of popular use cases; Banks and agents have not developed a strategy, or management processes; Core agent operations like agent selection, liquidity management, and monitoring and support are still very nascent; and Growth focus is on product proliferation and numbers of customers and agents- leading to low qualities of service.	Rapid expansion of networks - reportedly decreasing activity per agent; Liquidity issues are being driven by non-exclusivity of agents (forcing agents to manage multiple liquidity pools) and agents' apathetic approach to float management; Some agents - were poorly selected, and will not survive.	Agents primarily face challenges on fraud and security, communication with their provider, and system downtime.

*Some of this information is based on HELIX Institute of Digital Finance - Agent Network Accelerator Survey: Kenya, Nigeria and Tanzania Country Reports 2013-14

The CBK developed Guidelines on Agent Banking (2009) permitting third parties to provide services on behalf of banks (Table 12). Also the 2011 Landmark National Payment System Bill granted CBK power of oversight over the mobile payments systems. The CBK operationalized agency banking in May 2010, approved 10 banks to roll out agency networks. These banks have engaged a total of 7,820 agents across the country.

In Nigeria, Merchant and Agent transactions services Ltd (MATS LTD) is actively aggregating licensed providers of mobile money in Nigeria. This will enable subscribers to transact from any of the operator platforms via any channel at MATS agent outlets which is in active roll out nationwide. These efforts are aimed at bridging the gap with the unbanked population and give banked customers more transactional options to access agency network leveraging on mobile financial services of the licensed providers in Nigeria[94]. Nigeria had over 780,000 agents and 21 licensed MNOs in 2014 that have been approved to participate in agent banking.

The financial institutions are required by the CBN to carry out their respective due diligence on any firm that is established as an agent bank. They have to develop and maintain due diligence policies and guidelines that define initial agent engagement, regular monitoring and supervisory checks, trigger points and corrective measures. These requirements will impact on agents' expansion of financial inclusion as they have to maintain similar conditions governing customers in the formal banking institutions.

The Bank of Tanzania (BoT) introduced comprehensive agent banking guidelines in March 2013. Banks and financial institutions are allowed to appoint retail agents to handle their banking services. This gives them the opportunity to tap into the unbanked population through MNOs and retail outlets and deepen financial inclusion. The BOT is to approve appointments of agents by licensed banks or financial institutions and the agents must sign up to a standard agency agreement. They must also undergo detailed due diligence, risk assessment. A feasibility study has to be undertaken on the proposed agent's suitability.

Agents must have a trading track record of at least two years. The licensed bank or financial institution must ensure that agents strictly comply with stipulated banking regulations through regular checks and audits of agents, who are not to be appointed on exclusive basis. They should continue doing their normal businesses. All regulatory and legal risk remains with the licensed bank or financial institution. They must ensure that the agents adhere to CDD and KYC/AML/CFT guidelines.

In Uganda, Mobile financial services such as deposit and withdrawal through agents are possible with partnered banks. Although there is no strict oversight on agents, banks have to ensure that agents properly manage liquidity and confidentiality of data[95]. A mobile money agent must also be registered as a business with a physical address and an account with a licensed institution such as a bank. A financial institution must receive approval from BOU for the provision of mobile money services. Limitations on who can be an agent and necessary qualifications, if stringent, can hamper roll out of elementary third party networks.

5. Lessons Learned - the Way Forward and Recommendations

Four years ago, African mobile money was delivered by MNOs, with a few rare but notable exceptions like Equity Bank in Kenya. Today, a number of banks are building large-scale mobile money operations, as independent payment services providers. MFIs are also beginning to

[94] At: https://mobilemoneyafrica.com/content.php?id=1903

[95] See World Bank, Feb 2014 - In 2011, the Deputy Director of Commercial Banking at BoU, remarked during the Uganda Mobile Money Agents Association stakeholders meeting that the BoU, together with the UCC, was drafting a set of rules including self-regulating mechanisms, quality assurance standards and monitoring systems for mobile money transactions.

leverage the twin pillars of technology and distribution to extend their footprints. As these systems evolve, other businesses, some old and some new, will increasingly tap into the larger mobile money ecosystem to deliver to the market. Traditional FSPs will need to adapt to rapidly changing events on the ground or they will find themselves left behind in increasingly niche market positions.

Mobile banking has been launched in many African countries since the introduction of M-PESA in Kenya in 2007. Central banks across Africa, through enactment of financial reforms are allowing commercial banks and other financial institutions to provide mobile financial services. In both cases these efforts are promoting financial inclusion and digitalizing financial services on the continent.

MNOs like Vodacom, Zain and MTN, which have wide continental coverage, would be instrumental in pushing financial inclusion agenda forward. Successful adoption of, for instance, M-PESA, M-SHWARI, M-PAWA and MobileMoney models by other service providers in Africa, would also provide other benefits such as: (i) boosting domestic credit and savings through expansion of financial services; (ii) increased money transfers from the diaspora at low costs – e.g., M-PESA International money transfer (IMT); (iii) reduction in financial transactions costs, leading to lowering cost of doing business that will benefit SMEs and overall private sector development[96].

However, MNOs still face a number of challenges in these countries that may undermine the growth of financial inclusion if not addressed. These include: legal and regulatory framework; ICT infrastructure costs; competition among MNOs and limited interoperability mobile money systems; IT security; and policies to address intra-country and intra-regional mobile financial services. Regulators in these countries need to address issues related to: enhancement of supportive regulatory frameworks; lack and/or limited interoperability; and lack of/ or financial literacy to financial inclusion.

Supportive Regulatory Environment

Regulations allowing MONs-led operations such as those in East African countries have proven to be more successful than those of bank-led such as in Nigeria in terms of increased subscription rates, penetration and financial inclusion[97]. Also, regulations allowing MNOs competition in the telecoms sector has driven prices down in most countries and therefore promoted increased financial inclusion in countries like Kenya, Uganda and Tanzania. Furthermore, this is also having impact on MNOs in countries like Kenya, Nigeria and Uganda where the sector is witnessing mergers and acquisitions (M&A) among smaller operators.

[96] Steve Kayizzi-Mugerwa and Peter Ondiege, AFDB, Dec. 2013

[97] Northern African countries also operate on bank-led model like in Nigeria.

Kenya has made milestones in creating supportive regulatory environment by ensuring that CBK, CAK, financial institutions and MNOs work together in supporting financial inclusion policies. However, the authorities need to enhance dialogue among financial institutions and MNOs and other stakeholders so as Safaricom-MPESA is not perceived by others as being a dominant or a monopoly in mobile money services. The regulations should take into account costs of ICT infrastructure, costs to customers and the benefits accruing from the regulations. These need to support more investments that will lead to deepening financial inclusion agenda in the country.

CBN should allow MNOs in Nigeria to directly participate in mobile money markets and to own their own agents as is currently being practiced in the other three east African countries in the paper. This will allow the country and the MNOs to exploit the potential of the markets investment in the sector and will also lead to the expansion of financial services and financial inclusion in the country as Nigeria has the highest number of mobile money providers in Africa (20), comprising banks, companies and MNOs.

In Tanzania, since 2012, the BoT has taken a progressive approach to designing a regulatory framework that has contributed to competition in the market with MNOs contributing to the progression of electronic finance systems. BoT has cooperated with Tanzania Communications Regulatory Authority (TCRA) and key MFS stakeholders in finalizing the issuing Mobile Financial Services (MFS) Regulations and the National Payment Systems Act by the end of 2014. The mobile payments were drafted in 2013 to stabilize and enhance security in the sub-sector. The existing laws were developed before the development of technology in relation to transactions through mobile phones. The BoT should therefore ensure that they take into account the new technologies. And as expected, they should also continue to consult and dialogue widely with all the key stakeholders in the industry, MFS stakeholders, such as MNOs and financial institutions. The new regulations need to balance financial stability and financial inclusion objectives.

The Uganda Communications Commission (UCC) which is supporting telecom-driven mobile banking model does not yet have a comprehensive regulatory framework for mobile money services. The authorities therefore need to develop one that will regulate the sector as well as deepen financial inclusion as its in Kenya and Tanzania.

Mobile Number Portability (MNP)

Mobile Number Portability (MNP) in Kenya and Nigeria fared poorly[98]. And in both countries, the launch dates were behind the target dates. Kenya introduced MNP in 2011 but the uptake of the service has remained low. The MNOs in Kenya have devised strategies for customer retention that work against MNP. CAK reports show that MNPs uptake has declined overtime even after MNOs and CAK carried out mobile subscriber education [99]. Given the slow pace of

[98] However, it is observed that MNP service registered success in other African nations such as South Africa.

[99] CAK Quarterly Sector Statistics Report Third Quarter Of The Financial Year 2013/14 (Jan-Mar 2014)

implementation of MNP, the authorities should reconsider its approach and withdraw the policy. In Nigeria, MNP was introduced in 2013, promising to make the market more competitive. In this regard, central banks in Nigeria and Kenya need to revisit the policy in favor of promoting interoperability as proposed by GSMA MMI program.

In Tanzania, MNP is yet to be established though the regulator affirms that MNP was to be introduced later in 2014. In Uganda, MNP has not been introduced and the authorities now see no need for its implementation.

Mobile Money Interoperability to support Financial Inclusion

Interoperability in these countries is likely to move the mobile money industry forward, but its workings needs to be clearly understood, prioritized, and introduced when the markets are ready, or they may have the opposite effect. For mobile money services to reach scale, distribution networks needs to be built in rural areas where there is a critical mass of customers needed for financial inclusion by the financial institutions including. This will also provide the incentives for infrastructure investment. Interoperability policies need to ensure that the benefits of mobile money for the core MNOs are maintained otherwise MNOs may relocate resources to other areas with higher returns or raise prices for mobile money customers. These outcomes could reduce financial inclusion.

African regulators need consider the GSMA MMI program aimed at promoting interoperability as announced in April 2014 i.e. that the nine MNOs operating in Africa and the Middle East are to work together to accelerate the implementation of interoperability and interconnectivity mobile money services across the two regions.

Since Interoperability has played a key role in the growth of SMS and Voice markets in countries like Kenya, it should be able to provide similar opportunities to mobile money transactions provided the costs of doing so are taken into account. To realize the full potential of mobile money in Kenya, for instance, it is important for MNOs to recognize interoperability as a catalyst for wider adoption and growth of mobile money services.

Interoperability, which Tanzania introduced in 2014, has the potential to increase the population coverage to promote financial inclusion on the continent and lowering of costs to clients. It must focus on protecting the investment incentives and customer trust upon which the future of mobile money depends. Interoperability between MMOs and other players, such as banks, payment card players or microfinance institutions should be promote. Interoperability should also, enable the **ecosystem** by providing new avenues of growth, such as merchant/transport payments and cashless distribution such is being fostered in Kenya.

Agency Banking and Agents Role

Agent sharing among MNOs may eliminate their competitive advantage and they could also regard it as giving away their agent networks to those competitors who never invested in them. This calls on regulators to undertake inclusive consultations and dialoguing with the key stakeholders on key issues regarding costs that must ironed out.

In Kenya where Safaricom has opened up its agents to Airtel, there is need to ensure that Agent interoperability does not reduce MNOs' incentives to invest in agent networks, suppressing competition and potentially encouraging free-rider behavior. The Kenyan government has been advocating for an increase in partnerships between the banks and MNOs and this Safaricom-Airtel agency sharing might just be the impetus that authorities need to drive further cooperation and partnerships between the MNOs.

In Nigeria, the CBN needs to put in place regulations allowing MNOs to own their agents but under its supportive guidelines; while in Uganda, the authorities need to put in measures that will raise the participation of agents in the sector as integration of agents' activities with banking is on a very low level scale by agents.

Innovations and New Financial Products

One lesson learnt from the M-PESA experience is that innovation could come from unexpected players and that regulation does not necessarily need to precede the development of innovative solutions. As voice AURC decline in the four countries, MNOs are streamlining their operations and venturing in new lines of business that provide new products such as savings, loans and insurance etc. thus promoting financial inclusion and digital innovations – e-banking, e-commerce in the African economies.

Innovation is important in this process, as it continues to stimulate improvement in the rapidly evolving mobile money ecosystem and provide new opportunities for those willing and able to seize them. Process innovation will make existing infrastructure work better for operators and consumers in the four countries. It will lower the cost and reduce friction points in delivering the service. It will also provide the data needed to supply a better service offering to consumers and, increasingly, to businesses.

Product innovations will not only expand the range of services available to consumers, but will also increase the transactional traffic flowing through digital payment systems. This growth in transaction volumes, need to be encouraged in the four countries. This will help bring costs down and make it increasingly possible to offer digital financial services to the base of the pyramid cost-effectively. As transaction volumes grow, distribution capabilities will expand and make it possible to deliver more to distant locations, as the cost for marginal investment reduces over time. As markets take off, new entities enter the ecosystem and the network effect grows.

6. Conclusion

Regardless of these financial innovation barriers, FSPs have launched new products for low-income consumers and increasingly for the agribusiness sector. The next step in the evolution of the mobile money industry will be penetrating into other business-to-business (B2B) ecosystems and value chains Format.

Furthermore, partnerships between banks, financial institutions, microfinance institutions (MFIs) and the MNOs should be sought out and encouraged. In order to sustain the growth of these mobile banking success stories, there is a need to support a single integrated framework (between financial institutions and the mobile industry) to cut costs, in order to provide consumers with the convenience of banking from home, the farm or other remote areas.

MFIs should also upgrade their technology to be able to adopt the new and emerging mobile banking technology. They should seek solutions that are user-friendly and easy to implement. The increased access to cell phones by the unbanked Africans would be the most cost-effective and economically efficient method of providing financial services to a wide segment of the African populations in the very near future[100]

African countries should also capitalize on the growing and innovative private sector as top priority to promote opportunities for PPPs. Achieving inclusive financial systems in Africa will not happen without private sector involvement. While the role of the state should be to develop conducive regulatory frameworks, build the financial infrastructure and conduct financial literacy programs, private sector role would be to create operators that can provide good quality financial services at an affordable cost to most Africa's population. The private sector could also be involved in the management of financial institutions leading the financial inclusion agenda that are being funded by the government. Private sector could also be invited to manage and maintain the financial infrastructure, including for example management of credit bureaus.

However, MNOs still face a number of challenges in these countries that may undermine the growth of financial inclusion if not addressed. These include: legal and regulatory framework; ICT infrastructure costs; competition among MNOs and limited interoperability mobile money systems; IT security; and policies to address intra-country and intra-regional mobile financial services. Regulators in these countries need to address issues related to: enhancement of supportive regulatory frameworks; lack and/or limited interoperability; and lack of/ or financial literacy to financial inclusion.

Regulations allowing MONs-led operations such as those in East African countries have proven to be more successful than those of bank-led such as in Nigeria in terms of increased subscription rates, penetration and financial inclusion[101]. Also, regulations allowing MNOs competition in the telecoms sector has driven prices down in most countries and therefore promoted increased financial inclusion in countries like Kenya, Uganda and Tanzania.

References

[100] Peter Ondiege, AFDB, Fostering financial inclusion with mobile banking, Private and Development, Proparco, May 2013

[101] Northern African countries also operate on bank-led model like in Nigeria.

African Development Bank (AFDB), World Bank and World Economic Forum, 2013, The Africa Competitiveness Report 2013, World Economic Forum, 2013.

African Development Bank (AFDB), 2013, Developing Africa's infrastructure for enhanced competitiveness, Nigeria, Draft Report, AFDB, 2013.

Africa - Mobile Voice and Data Communications Statistics Report 2013 at: http://www.budde.com.au/Research/Africa-Mobile-Voice-and-Data-Communications-Statistics-tables-only.html#sthash.k2qk6LI2.dpuf

Africa - Mobile Voice and Data Communications Statistics Report, November 2012, at http://www.budde.com.au/Research/Africa-Mobile-Voice-and-Data-Communications-Statistics-tables-only.html#sthash.k2qk6LI2.dpuf

Apoyo Consultoria, 2011 April, *Study on ICT Access Gaps in Kenya: Final Report prepared for* Communications Commission of Kenya (CCK).

Simone di Castri, February 2013, Mobile Money: Enabling regulatory solutions GSMA

Communications Authority of Kenya (CAK) Quarterly Sector Statistics Report Third Quarter of The Financial Year 2013/14 (Jan-Mar 2014)

Neil Davidson and Paul Leishman, The case for interoperability: Assessing the value that the interconnection of mobile money services would create for customers and operators, 2012 June, at http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/06/mmu_interoperability.pdf

Asli Demirguc-Kunt and Leora Klapper, Measuring Financial Inclusion: The Global Findex Database, World Bank Policy Research Working Paper 6025, April 2012.

Eva Gutierrez and Tony Cho Mobile, 2014, Money Services Development Mobile Money Services Development, the Cases of the Republic of Korea and Uganda Policy, Research Working Paper 6786, World Bank.

Financial Action Task Force (FATF) Guidance, Anti-Money Laundering and Terrorist Financial Measures and Financial Inclusion, June 2011

Musa Itopa Jimoh, Mobile Money And Telco Regulation In Nigeria, 2013, Central Bank of Nigeria, International Conference On Payments System September 16th & 17th 2013

Steve Kayizzi-Mugerwa and Peter Ondiege, AFDB, Financial Inclusion in Africa: Innovation, Challenges, and the Road Ahead, Paper Presented at AERC 25 Years and Beyond Workshop, Nairobi Dec 2013.

Leora Klapper and Krista Hoff, 2012, Access in developing countries to a Formal Bank Account, April 2012 – based *on global financial inclusion data collected for the new World Bank Global Financial Inclusion (Global Findex) database throughout 2011 at:* http://www.gallup.com/poll/154040/half-adults-worldwide-report-having-formal-bank-account.aspx

Anthonia T. Odeleye, Pre-Consolidation and Post-Consolidation of Nigerian Banking Sector: A Dynamic Comparison, International Journal of Economics and Financial Issues Vol. 4, No. 1, 2014, pp.27-34

Mthuli Ncube and Peter Ondiege, 2013, AFDB, Silicon Kenya: Harnessing ICT Innovations for Economic Development, June 2013.

Njuguna Ndung'u: Understanding and expanding financial inclusion in Kenya, Keynote speech, Governor of the Central Bank of Kenya, at the launch of the FinAccess GIS Mapping of all Financial Access Touch Points 2014, Nairobi, 13 March 2014.

Peter Ondiege, AFDB, 2013, Fostering financial inclusion with mobile banking, Private Sector and Development, Proparco, May 2013.

Peter Ondiege, 2010, Mobile Banking in Africa: Taking the Bank to the People, AFDB, Africa Economic Brief, Vol.1, Issue 8, December 2010.

Marcia Parada and Greta Bull, In the Fast Lane: Innovations in Digital Finance. IFC and The Master Card Foundation, May 2014

Claire Pénicaud and Arunjay Katakam, 2013, State of the Industry, The GSMA's Mobile Money for the Unbanked Program (MMU), The Bill & Melinda Gates Foundation, The MasterCard Foundation, and Omidyar Network.

PesaAfrica, The Role of Regulators in Mobile Money Deployment April 2014: at http://pesaafrica.com/2014/04/07/the-role-of-regulators-in-mobile-money-deployment/

Maria Shkaratan, 2012, Tanzania's Infrastructure: A Continental Perspective, Policy Research Working Paper 5962, World Bank, Februarys 2012.(23-24).

The Wall Street Journal MARKETS & FINANCE September 3, 2014 at
http://blogs.wsj.com/frontiers/2014/09/03/mobile-money-the-battle-for-africa/

Thouraya Triki and Issa Faye, 2013, "Brief on Operationalizing Financial Inclusion at the AfDB."

http://ssa.gsmamobileeconomy.com/GSMA_ME_SubSaharanAfrica_Web_Singles.pdf

http://blogs.wsj.com/frontiers/2014/09/03/mobile-money-the-battle-for-africa/

http://en.wikipedia.org/wiki/List_of_banks_in_Nigeria

http://www.humanipo.com/news/39147/safaricom-launches-mobile-micro-insurance-service/

http://www.humanipo.com/news/36811/mtn-uganda-offers-life-insurance-cover-to-customers/

http://www.ira.go.ke/attachments/article/47/Registered%20Companies%20-%202013.pdf

http://naicom.gov.ng/http://naicom.gov.ng/

http://en.wikipedia.org/wiki/List_of_insurance_companies_in_Uganda

http://data.worldbank.org/indicator/FB.ATM.TOTL.P5 http://www.budde.com.au/Research/Africa-Mobile-Voice-and-Data-Communications-Statistics-tables-only.html#sthash.k2qk6LI2.dpuf

http://www.afi-global.org/sites/default/files/publications/mfswg_gl_1_basic_terminology_finalnewnew_pdf.

http://www.humanipo.com/news/1829/mobile-number-portability-in-kenya-a-failed-project/

http://www.humanipo.com/news/39147/safaricom-launches-mobile-micro-insurance-service/

http://www.humanipo.com/news/36811/mtn-uganda-offers-life-insurance-cover-to-customers/

http://www.gsma.com/newsroom/operators-commit-accelerate/

https://mobilemoneyafrica.com/content.php?id=1903

http://www.cnbcafrica.com/news/financial/2014/07/04/breaking-barriers-of-the-unbanked-and-underserved/

http://www.itnewsafrica.com/2014/08/nigeria-airtel-unveils-airtel-insurance/

http://www.thisdaylive.com/articles/mtn-introduces-life-insurance-service-to-subscribers/162996/

http://www.microensure.com/news.asp?id=148

http://mobile.nation.co.ke/lifestyle/Book-reveals-how-rivalry-killed-first-mobile-banking-app-/-/1950774/2211028/-/format/xhtml/-10kgxfwz/-/index.html

http://mfcny.org/event/m-shwari-%E2%80%93-revolutionary-mobile-savings-and-loans-product-kenya

http://www.mobileworldmag.com/airtel-and-faulu-kenya-launches-cash-advance-service-through-mobile-money/

http://www.technologybanker.com/mobile/kenya-commercial-bank-launches-m-benki-loans-savings-services#.VB17kfmSxqU

http://www.tanzaniainvest.com/banking-finance/news/1125-tanzania-launches-mobile-phone-loans-and-savings

https://www.cranebanklimited.com/index.php/mtn-mobile-money-launch

http://www.equitybank.co.ke/index.php/self-service/mobile-banking/m-kesho

http://www.mobiletransaction.org/m-pesa-kenya-the-lead-in-mobile-money/

http://www.gsma.com/newsroom/operators-commit-accelerate/

http://mfcny.org/event/m-shwari-%E2%80%93-revolutionary-mobile-savings-and-loans-product-kenya

http://www.mobileworldmag.com/airtel-and-faulu-kenya-launches-cash-advance-service-through-mobile-money/

http://www.africantelecomsnews.com/Operators_Regulators/List_of_101_Top_African_mobile_operators.shtmTogocel

http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

http://www.afi-global.org/blog/2014/02/24/highlights-mobile-financial-services-landscape-tanzania-and-lessons-regulators#_ftn1

Annex 1: Top 101 Africa Mobile Network Operators as at June 2012 (ranked by mobile subscribers)* & Mobile Subscriptions as by 2013**

Country	Operator	MNO Rank	Subscribers (000)	Subscribers/100 persons
Nigeria	MTN	1	127,246.09	72.29
	Glo Mobile	7		
	Airtel	9		
	Etisalat	14		
	Visafone	64		
Egypt	Vodafone	2	79,704.98	121.51
	MobNil	3		
	Etisalat Misr	6		
South Africa	Vodacom	4	77,826.07	147.46
	MTN	5		
	Cell-C	17		
	Telkom	87		
Kenya	Safaricom	8	31,309.02	70.59
	Airtel	40		
	Orange (Telcom)	48		
	Yu (ETKL)	58		
Algeria	Djezzy	10	39,996.59	102.01
	Mobils	18		
	Nedjma	20		
Morocco	Maroc Telecom	11	42,423.79	128.53
	Meditel	15		

	Inwi (GSM)	22		
Ethiopia	Ethio Telecom	12	25,646.87	27.25
Sudan	Zain	13	26,657.88	72.85
	MTN	28		
	Sudani	46		
Ghana	Scancom (MTN)	16	28.026.48	108.19
	Vodafone	39		
	Millicom	45		
	Airtel	51		
	Glo Mobile	100		
Tanzania	Vodacom Tanzania	19	27,442.82	55.72
	Airtel	23		
	Tigo	34		
	Zan Tel	85		
Angola	United Angola	21	13,285.20	61.87
	Movicel	59		
Uganda	MTN Uganda	24	16,568.79	44.09
	Airtel	47		
	UTC Telecel	71		
	Warid	91		
Libya	Libyana	25	10,235.30	165.04
	Almadar	55		
Mali	orange	26	19,749.37	129.07
	Malitel	36		

Cameroon	MTN Cameroon	27	15,664.67	70.69
	Orange	37		
Tunisia	Ooredoo (Tunisiana)	29	12,712.37	115.60
	Tuniesie Telecom	41		
	Divona/Orange	75		
Zimbabwe	Econet Wireless	30	13,366.17	96.35
	Telecel	68		
	Net.com	74		
Senegal	Orange	31	13,133.77	92.93
	Tigo	57		
Cote d'Ivoire	MTN	32	19,390.90	95.45
	Orange Cote d'Ivoire	38		
	Moov	49		
	Comium	78		
Democratic Republic of Congo	Vodacom Congo	33	29,506.62	43.70
	Aitel	35		
	Tigo	60		
	CCT (Orange)	89		
Zambia	Airtel	42	10,395.80	71.50
	MTN Zambia	52		
	Zamtel	95		
Rwanda	MTN Rwandacell	50	6,689.16	56.80
	Tigo	79		
Burkina Faso	Airtel	53	11,486.82	66.38

	Telcel	83		
Mozambique	mCel	54	12,401.29	48.00
	Vodacom Mozambique	56		
Niger	Airtel	61	7,006.30	39.29
	Orange	92		
Benin	Airtel	62	9,627.45	93.26
	Globacom	82		
	Moov	98		
Madagascar	Airtel	63	8,283.60	36.13
	Telcom Malagasy	90		
Malawi	Airtel	65	5,290.04	32.33
	TNM	80		
Namibia	MTC	66	2,538.58	110.21
Guinea Republic	MTN	67	7,436.47	63.32
	Orange	86		
Mauritania	Mauritel Mobiles	69	3,988.95	102.53
Chad	Tigo	70	4,561.23	35.56
	Airtel	72		
Congo Brazzaville	Airtel	73	4,659.76	104.77
	MTN Congo	77		
Guinea-Bissau	Orange Bissau	76	1,262.70	74.09
Botswana	Mascom	81	3,246.79	160.64
Togo	Togocel	84	4,262.99	62.53
	Moov	93		

Sierra Leone	Africell SL	88	2,688.70	44.13
Burundi	Leo	94	2,536.83	24.96
Somalia	Hormuud	96	5,183.00	49.38
Gabon	Airtel	97	3,590.00	214.75
Liberia	Lonestar	99	2,555.40	59.51
Lesotho	Vodacom	101	1,790.29	86.30

Source: *ttp://www.africantelecomsnews.com/Operators_Regulators/List_of_101_Top_African_mobile_operators.shtmTogocel;

** http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx