A Comparison of the Mobile Financial Services Sector in Kenya, Tanzania and Uganda

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Mobile money has been a fast growing phenomenon in developing countries around the world but particularly in East Africa. The East African countries of Kenya, Uganda and Tanzania have shown remarkable growth and are three of the 16 countries globally where mobile money accounts outnumber bank accounts. The sector has now evolved to provide mobile financial services such as savings, loans and even insurance, providing greater opportunities for increased financial inclusion. Studies have shown that in countries where there has been successful penetration of mobile money services, there has been an increase in financial inclusion.

However, the level of evolution and uptake has varied by country. Kenya has taken the lead in terms of uptake and more competitive pricing while Uganda lags behind in terms of available financial services. Tanzania for its part is the first of the East African countries to implement interoperability between mobile money operators.

Using a case study approach, this study provides comparisons of the mobile money markets in each of the three countries, including a profile of the sector and a discussion on how this might have affected prices, variety of available services and levels of adoption. It will examine how the existing structures of the markets and regulation may have influenced the pricing, uptake and availability uptake of mobile financial services. It will conclude by providing recommendations as to how to encourage competition that allows for reduced prices, innovation and an increased diversity of financial products and services.

Keywords: Mobile Money, Mobile Financial Services, Financial Inclusion, East Africa, Competition

JEL classifications: L1, D2, G2

1. Background

Mobile money has been a fast growing phenomenon in developing countries around the world but particularly in East Africa. For instance, in Kenya growth of mobile money subscribers between 2010 and 2016 has been 142%. In Uganda and Tanzania, the growth rate of mobile money subscribers between 2011 and 2016 has been 610% and 172% respectively. The experience in each of the countries, however, has been different. Kenya's growth has been rapid and significant. Growth in Tanzania started slow but has since taken off. In Uganda adoption of new and innovative products and services has lagged behind its East African counterparts.

Mobile money refers to a method of transfer of cash using mobile phones. A subscriber transforms cash into e-value via an agent and is then able to transfer this e-value to another subscriber via a cell phone. The mobile money can be used to purchase airtime, pay bills, utilities, and other items or simply withdrawn by the recipient also through an agent. Mobile money is lauded largely because it provides a secure, cheaper and more convenient means to send and receive money (Klein and Mayer, 2011). Rather than send money to long distances via a bus as is often the case in developing countries, the money is sent to via a mobile phone. Mobile money services in some countries have also expanded to provide even more financial services such as insurance, savings and credit such as is the case in Kenya and Tanzania.

The term mobile money is used to refer to a number of distinct but related services offered over a mobile digital platform including; mobile money transfer, mobile payment and mobile banking. Mobile money transfer (MMT) is the basic transfer of mobile money between two mobile money subscribers over a mobile network (Roberts, MacMillan and Lloyd, 2016). This is the most common use of mobile money in Sub-Saharan Africa. Mobile payment refers to the transfer of mobile money for the purchase of goods or services. Payments such as these are usually made for utilities such as electricity and water, school fees and to merchants (Roberts, MacMillan and Lloyd, 2016). Mobile banking, on the other hand, is the use of mobile devices to access banking services such as deposits, withdrawals, loans, savings, account transfers, bill payments and inquiries. For a subscriber to access these services, they require an account at a bank

Mobile money is particularly important in sub-Saharan Africa because the region has some of the lowest rates of financial inclusion globally. Financial inclusion defined as access to financial services such as savings and credit is critical for achieving poverty reduction and more inclusive economic growth (Demirgüç-Kunt *et al.*, 2015). In 2014, only about 34% of the population above 15 years of age in sub-Saharan Africa had financial accounts (including mobile money accounts), a percentage only higher than the Middle East region with 14% (World Bank, 2015). Countries with low rates of financial inclusion are often characterized by low Gross Domestic Product (GDP) per capita, income inequality and slow economic growth (Klapper, Laeven and Rajan, 2006) (Beck et al., 2015; Klapper et al. 2006; World Bank, 2008).

In countries with where there has been successful penetration of mobile money services, there has been an increase in financial inclusion. In Uganda for instance, according to a recent FinScope Study, non-bank formal financial inclusion grew from 7% in 2009 when mobile money was first introduced to 34% in 2013 (Economic Policy Research Centre, 2013). Similarly, in Zimbabwe between 2011 and 2014, financial inclusion grew from 60% to 77% largely due to mobile money (FinMark Trust, 2015). In Tanzania, for the same period of time, the percentage grew from 17.3% to 39.8% (World Bank, no date). Largely due to mobile money, in 2014, sub-Saharan Africa had only 17% of the world's unbanked population compared to the 31% in South Asia and 24% in East Asia and Pacific (Demirgüç-Kunt *et al.*, 2015).

As significant as mobile money is for furthering financial inclusion, the structure of the sector in several countries could lead to high prices, limited innovation and slow adoption of mobile money services (Evans and Pirchio, 2014; Sitbon, 2015). In 2014, competition and regulatory pressures are reported to have led to a decline in revenue growth of the industry (GSMA Intelligence, 2015).This reduction could also be extended to the rate of adoption of mobile money services. The structure of the mobile money sector reflects that of the telecommunications industry in that it is often highly concentrated and characterized by network effects and high costs of entry (Bourreau and Valletti, 2015; Sitbon, 2015).

Network effects occur when additional value from a product is obtained when there is an additional user or subscriber. In the telecommunications industry, it is often cheaper to make voice calls to users on the same network. Mobile Network Operators (MNOs) often set different rates for On-net and off-net calls, charging subscribers higher prices for communication made to users on a different network. A subscriber thus derives greater benefits from being part of a network with the majority of subscribers as the costs involved in using telecommunication services are much less. MNOs are able to leverage the market power they have in their traditional voice and data offering into the mobile money industry especially since the network effects are similar in the mobile money sector. More value is derived by joining the largest network as subscribers pay cheaper rates for transfer of money within the same network.

Related to network effects is the phenomenon of two-sided markets. Two-sided market occurs when two different sets of users interact through the same platform and for which the decisions of one user group affect the outcomes faced by the other group (Rysman, 2009). The different user groups derive benefits from being connected using the same platform as is the case in the mobile money sector (Armstrong, 2006). Prices are often charged discriminately with one market being charged more than the other and in some cases services provided free to encourage users to join up. Pricing decisions are therefore not only related to demand and cost of supply but on the elasticity response and of the other market (Rochet and Tirole, 2006).

The mobile money sector is a clear example of this where both agents and subscribers derive benefit from interaction on the same platform. The increase in the number of agents on one side of the market results in the increase of subscribers on the other side of the market. A platform is only successful if it attracts both agents and subscribers simultaneously (Evans & Pirchio, 2015). The platform must grow in such a way as to attract new clients but maintain the interest of early adopters. Once this growth reaches critical mass with both agents and subscribers growing simultaneously, the value of the existing users is sufficient to attract new users at a significantly higher rate than the rate at which it loses users (Evans & Pirchio, 2015).

The high barriers to entry and network externalities identified above can act as a deterrent to entry. As the sector grows and matures, effective competition is necessary to reduce prices, improve the quality of products and services as well as increase the diversity of the product offering (Mazer and Rowan, 2016).

The regulatory framework in the mobile money sector also has a significant impact on the success of mobile money and hence financial inclusion. Evans and Pirchio (2015) in a study that investigates the factors that contribute to the success of mobile money, found that all but one of the eight countries with successful mobile money regimes had light regulation. Heavy regulation has been suggested to reduce incentives on the part of the MNOs to continue investment as they may not have the opportunity to achieve compensation from the investment (Robb and Vilakazi, 2016).

However, with the maturation of the sector, there is a growing need or more regulation especially to combat anti-competitive outcomes although some have argued that introduction. Countries such as Kenya and Tanzania have for instance introduced regulation that removes agent exclusivity. Tanzania has additionally implemented regulation promoting interoperability across mobile money networks (Roberts, MacMillan and Lloyd, 2016). Competition in Kenya and Tanzania appears to have grown following these regulations resulting in lower prices and higher mobile money subscribers which are important for financial inclusion (Mazer and Rowan, 2016; Roberts, MacMillan and Lloyd, 2016).

This paper compares the mobile money sector in Kenya, Uganda and Tanzania in order to highlight how regulation, as well as the competitive dynamics in the sector, can affect adoption rates, availability of services and pricing in the region. It does this by providing profiles of the sector in different countries including statistics on adoption rates, the services available and regulation governing the sector. It concludes by comparing the sectors particularly with regards to prices charged and providing recommendations for further development of the sector.

2. Country analysis

2.1. Kenya

2.1.1. Profile

The mobile financial services sector experience in Kenya has been one of significant growth. Three years after mobile money services were first launched in Kenya in 2007, there were about 16 million mobile money subscribers. This number grew 142% to about 39 million in 2016, higher than the 2015 adult population of about 25.6 million (

Table *1*) (World Bank, 2015). The growth in number and value of transactions is even more

	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**CAGR**
Mobile Money Ac/s (mns)	19	21	25	25	32	39	16%
No. of Transactions (mns)	433	575	733	911	1 114	1 362	26%
Transactions Value (KSh bn)	1 169	1 538	1 902	2 372	2 816	3 343	23%
Average Transaction Value (KSh)	2 700	2 672	2 594	2 604	2 528	2 454	-2%
No. of Agents	76 912	50 471	113 130	123 703	143 946	167 501	17%

startling at 258% and 285% respectively.

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Table 1: Mobile money sector in Kenya

Source: Central Bank of Kenya (2016)

The mobile money sector in Kenya began when Safaricom's M-PESA launched its operations in 2007. By 2008, M-PESA was facilitating bulk payments of salaries. Customers had access to cardless ATM withdrawal services at PesaPoint ATMs, services at Postbank branches and could receive money from the U.K through Western Union (di Castri and Gidvani, 2013b). In 2009, M-PESA customers could pay their electricity and water bills using mobile money. It was also at this point that M-PESA got its first rivals when Zain Kenya (formerly Celtel Kenya and presently Airtel) launched Zap and YuMobile launched Yu Cash (di Castri, Gidvani and Muthiora, 2014). YuCash later exited the market in 2015, selling its subscriber base to Airtel Kenya (Omondi, 2015). In 2010, Orange Telecom launched its own mobile money services called Iko Pesa in partnership with Equity Bank. Orange Telecom, later sold off its 70% stake in Telkom Kenya and exited the market (Nyabiage and Wafula, 2015). In 2011, Tangaza Pesa was launched and was at the time the only mobile money service that could send cash across networks. In the same year, Airtel acquired Celtel Kenya and relaunched Zap as Airtel Money.

At the moment, there are about six main mobile money providers in Kenya: M-PESA, Airtel Money, Orange/Telkom Money, Equitel Money, Mobikash and Tangaza. M-PESA has the bulk of the market share in terms of active subscribers, number of transactions, value of transaction and agents (**Table 2**).

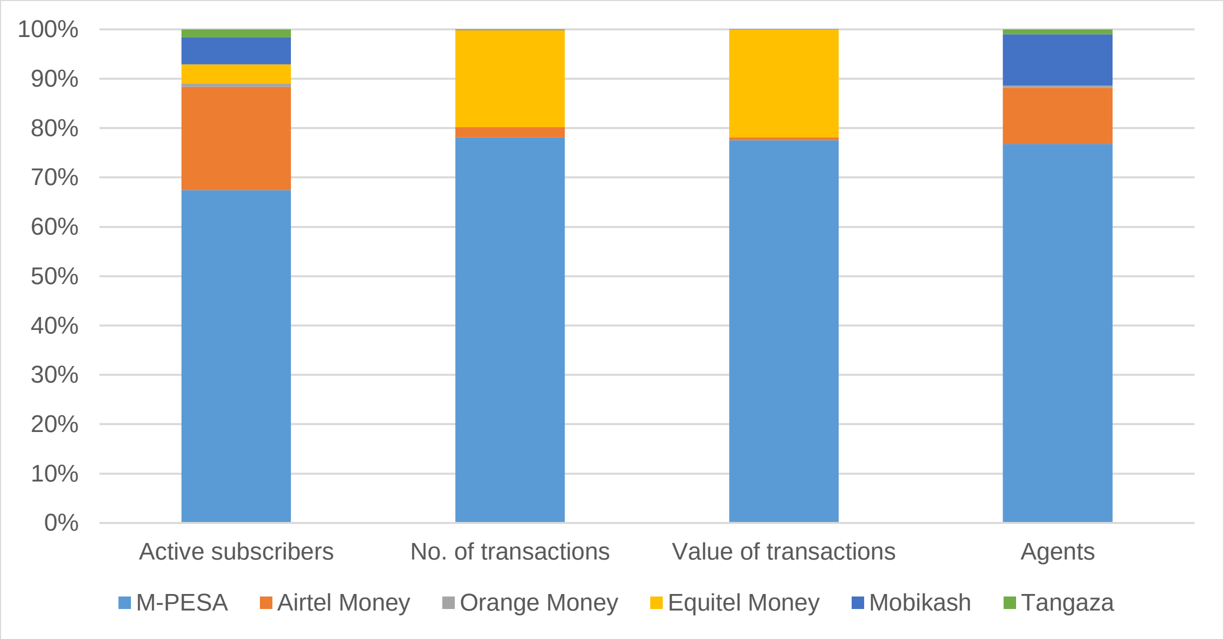
Table 2: Structure of the mobile money sector in Kenya, 2016

	Active subscribers	**No. of transactions**	**Value of transactions**	**Agents**
M-PESA	21 574 006	356 786 745	892 878 930 121	124 084
Airtel Money	6 711 829	9 359 291	6 579 991 618	18 354
Orange/ Telkom Money	194 322	31 000	80 029 000	800
Equitel Money	1 240 503	89 653 681	251 578 380 142	
Mobikash	1 772 696	815 881	127 032 829	16 749
Tangaza	503556			1 596
Total	31 996 912	456 646 598	1 151 244 363 710	161 583

Source: Communications Authority of Kenya (2016)

In terms of active mobile money subscribers, M-PESA has about 67% of the market share followed by Airtel Money with 21% (**Figure *1***). Mobikash, Tangaza, Equitel and Orange Money each have less than 10% of the remaining market share. In terms of usage and agents, M-PESA maintains their dominance in the market with at least 77% market share. Equitel comes second in terms of usage with market shares of at least 20% while Airtel Money and Mobikash have at least 10% of the market share in terms of number of agents.

Figure 1: Market share of mobile money subscribers, 2016



Source: Communications Authority of Kenya (2016)

2.1.2. Service offering

Mobile money providers began to offer mobile financial services as early as 2012. M-PESA was the first to launch such services starting with the launch of its M-Shwari service offering that allowed customers to save, earn interest and access loans (di Castri, Gidvani and Muthiora, 2014). The service was launched in partnership with the Commercial Bank of Africa (CBA). CARE, Equity and Orange also launched a product to enable savings groups to save and borrow through Iko Pesa. Later in the year, Airtel Money users could receive short-term loans from Faulu microfinance immediately on their phones with a product called "Kopa Chapaa". In 2015, M-PESA launched a similar product but in partnership with KCB bank called KCB-MPESA.

At the moment, mobile money subscribers n Kenya have access to services that enable to make bill payments to several merchants, pay utilities, acquire insurance, savings and credit, transfer cash between e-wallets and bank accounts and conduct international transfers. Utilities such as electricity can be purchased on credit using M-Pesa's Okoa Stima product (Safaricom, no date c). Importantly, M-Pesa now has a product called M-Pesa Kadogo that allows subscribers to carry out transactions below Kshs. 100 (about U$ 1) for free (Safaricom, no date b). Mobile money providers have now also begun to develop Application Platform Interfaces (APIs) to enable aggregators and third-party applications to easily make use of the M-Pesa platform. Using the new API third parties can easily access automated payment receipt processing, disbursements and payment reversals (Safaricom, no date a).

2.1.3. Legal and regulatory framework

The mobile financial services sector falls under two primary legal and regulatory frameworks: telecommunications and financial services. The telecommunications framework is largely governed by the Kenya Information and Communications Act, as amended through 2015 (the IC Act) although additional regulations have been issued by the Ministry of Information Communications and Technology (MICT) and rulings of the Communications Authority (CA), the independent regulator of the telecommunications sector. This framework regulates the working of the MNOs operating in this space. Given the provision of financial services, the sector is also governed by the financial services framework.

The regulation governing the sector includes (Andiva, 2015):

i. the Central Bank of Kenya Act, Laws of Kenya, Chapter 491 (the CBK Act);
ii. the Banking Act, Laws of Kenya, Chapter 488, as amended through 2014 (the Banking Act);
iii. the National Payment Systems Act, Laws of Kenya, No. 39 of 2011 (the NPS Act);
iv. the National Payment Systems Regulations, 2014 (the NPS Regulations), issued under the NPS Act; and
v. Prudential Guidelines, January 2013, Guideline on Consumer Protection.

The Central Bank of Kenya is the regulator of the financial services sector in Kenya and has a mandated to regulate and supervise the payments system in Kenya.

Because of the disruptive nature of mobile money technology, regulation has had to play catch up to the sector. M-Pesa first began as a pilot for a microfinance tool. When the technology's capabilities for money transfer was discovered, M-Pesa requested approval from the Central Bank of Kenya to provide this service (di Castri, Gidvani and Muthiora, 2014). Following a period of consultation, the CBK provided a no objection to Safaricom. In 2009, The Finance Act was introduced to allow agent banking. At the time only MNOs could make use of agents. The following year in 2010, the CBK released agent banking guidelines. In 2011 the National Payment Services (NPS) Act was passed in Parliament although it only commenced in 2014. Although not prohibited prior to the Act, the NPS Act would give non-banks the authority to issue e-money and or operate payment systems (Nyaoma, 2009). Additional regulation such as the Anti-money Laundering regulations were issued in 2012 which extended coverage of the act to non-bank financial service providers.

2.2. Tanzania

2.2.1. Profile

Mobile money services were launched in Tanzania in 2008. Although it took off to a slow start, it has since experienced significant growth. Between 2011 and 2016, active mobile money subscribers grew with a compound annual growth rate (CAGR) of about 23% from four million to 28 million (**Table 3**). Usage metrics calculated by number and value of transactions as well as balance on customer accounts have grown at a CAGR of over 50%.

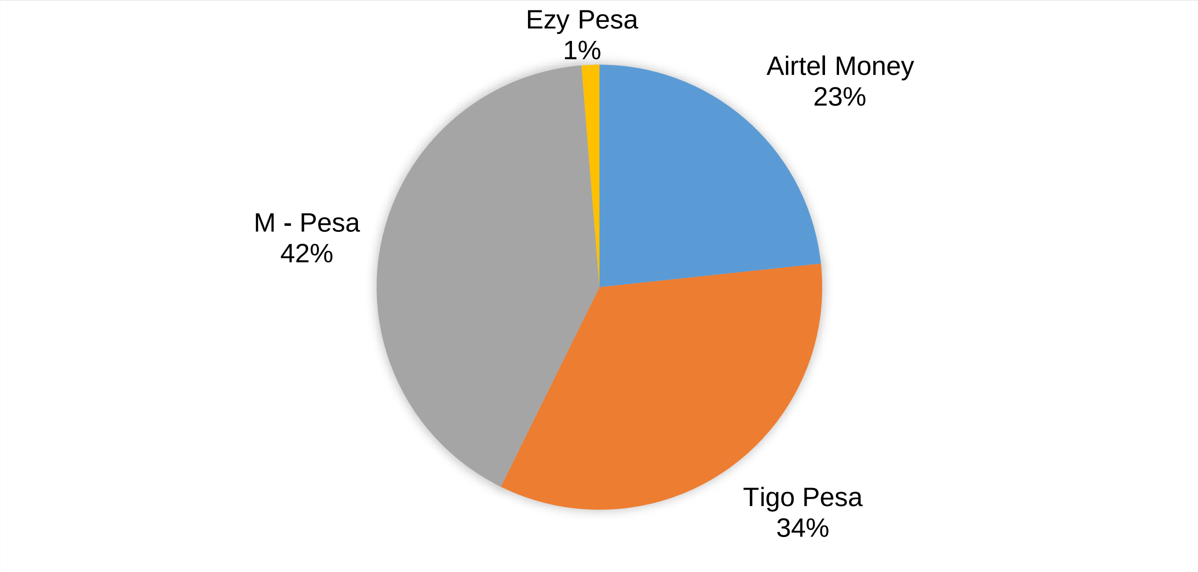
Table 3: Mobile money sector in Tanzania

	2011	2012	2013	2014	2015	2016	CAGR
Active Mobile Money A/cs (mns)	4	8	11	14	20	28	23%
No. of Transactions (mns)	135	547	1 005	1 251	1 284	1 318	50%
Transactions Value (TSh bn)	5 563	17 408	28 852	40 893	42 902	45 011	58%
Balance on customer A/cs (TSh)	48.45	141.27	250.85	332.89	451.78	613.13	52%
No. of Agents	83 795	97 613	153 369	238 461	267 047	299 060	66%

Source: Bank of Tanzania (2016)

There are currently four main mobile money providers in the market: Vodacom M-Pesa, Tigo Pesa, Airtel Money and Ezy Pesa (Zantel Z-Pesa). The National Microfinance Bank (NMB) also provides a service called 'Pesa Fasta' through which customers can send money to any person in the country who do not have a bank account via a mobile phone (InterMedia, 2013). Vodacom was the first to launch its mobile money service M-Pesa in 2008 (di Castri and Gidvani, 2013a). Zantel followed in the same year with the launch of Z-Pesa. Tigo launched Tigo Pesa in 2010. Zantel later relaunched its mobile money platform as Ezy Pesa in 2012.

Figure 2: Market share of mobile money providers, 2016



Source: Tanzania Communications Regulatory Authority (2016)

Despite its late entry in 2010, Tigo Pesa has competed actively and at the moment has the second highest market share in terms of active mobile subscribers of 34%. This share is estimated to be higher if mobile money revenues are considered. The operator's incentivisation of agents are said to have played a big role in this quick growth.

2.2.1. Service offering

Besides money transfer, customers are able to pay bills to utilities such as electricity, water and school fees using mobile money. In September 2014, Lipa Kwa M-Pesa was launched by Vodacom to enable merchant payments. Merchants can be received on the ordinary Tigo Pesa platform. Merchant payments, however, do not seem to have taken off in Tanzania. Tigo and Vodacom now also provide insurance services. In 2012, Tigo launched a life and hospitalization insurance product through a third party, Bima, which is underwritten by Golden Crescent Assurance. Premiums are automatically deducted from Tigo Pesa accounts. Vodacom also previously had a health insurance product. Uptake, however, has been slow.

In 2016, Vodacom and CBA launched a product called M-Pawa that enables saving and borrowing via a mobile phone. Although the customer registers for the product via a mobile phone a true bank deposit account is opened once the process is completed. Customers can also access international money transfer services through Tigo or Vodacom. Tigo customers in Tanzania could transfer cash to Tigo Cash accounts in Rwanda while Vodacom customers in Tanzania could transfer cash to M-Pesa accounts in Safaricom. In August 2015, Tigo partnered with WorldRemit to allow its subscribers to send and receive remittances internationally.

2.2.2. Legal and regulatory framework

There are three primary legal and regulatory frameworks that potentially impact the provision of mobile financial services in Tanzania: competition, telecommunications and financial services. The main regulations that govern the mobile money sector in Tanzania are:

i. The Tanzania Communications Regulatory Authority Act, 2003 which established the Tanzania Communications Regulatory Authority (TCRA) as the regulator of telecommunications, postal and other services.
ii. The Electronic and Postal Communications Act, 2010 (EPOCA) from which the TCRA derives the "power of licensing and regulating electronic communications systems and services" in Tanzania.
iii. The Electronic and Postal Communications (Competition) Regulations, 2011 which grants the TCRA the authority to regulate competition in the sector.
iv. The Banking and Financial Institutions Act, 2006, and the regulations issued thereunder grant the BOT the authority to regulate the activities of banks and financial institutions in Tanzania
v. The National Payment System Act, 2015 (NPS Act)

While the TCRA regulates the telecommunications sector, the Bank of Tanzania (BOT) governs the financial services sector including mobile financial services. In 2011, the TCRA and BOT signed an MOU on Mobile money on the regulation of the sector. The draft mobile payments regulations were issued for consultation in 2011. The National Payment System Act, 2015 (NPS Act) came into effect on 1 October 2015 and established a new licensing framework to govern payment systems in Tanzania. The Act required both banks and non-banks to first acquire a "payment system license" from the BOT prior to operating a payment system; secondly to acquire an "electronic money approval" in the case of a bank or an "electronic money licence" in the case of a non-bank prior to issuing electronic money. A third requirement was that a further licence is acquired for the issuance of certain payment cards. In October 2015, the BOT issued the Payment System Licensing and Approval Regulations, 2015 and the Electronic Money Regulations, 2015 (EMR) to further set out procedures and conditions applicable to these new licenses. Under this regulation, both Banks and non-bank entities such as MNOs can provide mobile financial services provided they acquire the necessary licences.

A unique factor about the Tanzanian sector is that the four main mobile money providers entered into voluntary, bilateral arrangements for interoperability of accounts. In August 2014, Airtel Money and Tigo Pesa were the first to negotiate and implement account interoperability in 2014, although EzyPesa and M-Pesa had joined the agreement by February 2016.

2.3. Uganda

2.3.1. Profile

Mobile money was first introduced in Uganda by MTN in 2009. Mobile money is one of the more recent value-added services provided by MNOs. It was initially introduced as a customer retention strategy but has begun to become of the main services provided by MNOs. At the time, the competition in the telecommunications sector had intensified due to aggressive on- and off-net discounting by a new entrant, Warid Telecom.

Airtel introduced a mobile money service soon after MTN Uganda in June 2009. M-Sente, UTL's mobile money service was launched in March 2010 and Warid Pesa launched in December 2011. Orange Money entered the market in 2012. A merger between Airtel Uganda and Warid Telecom in 2013 made Airtel the second largest player in the mobile money market after MTN Uganda and meant there are four MNO networks offering mobile money as of 2016. A number of non-MNO mobile payments providers such as MCash, EzeeyMoney, Micro Pay and Smart Money have also entered the mobile money space.

Mobile money in Uganda has experienced rapid growth. Between 2009 and 2016, registered subscribers grew from about 600,000 to close to over 20 million (equivalent to the adult population in the country). In other words, in less than a decade, mobile money has effectively been adopted by the entire country. It should be noted that the number of registered customers experienced a slight dip between 2015 and 2016 due to the disconnection of customers who had not adhered to proper Know your Customer (KYC) registration processes.

Table 4: Mobile money sector in Uganda

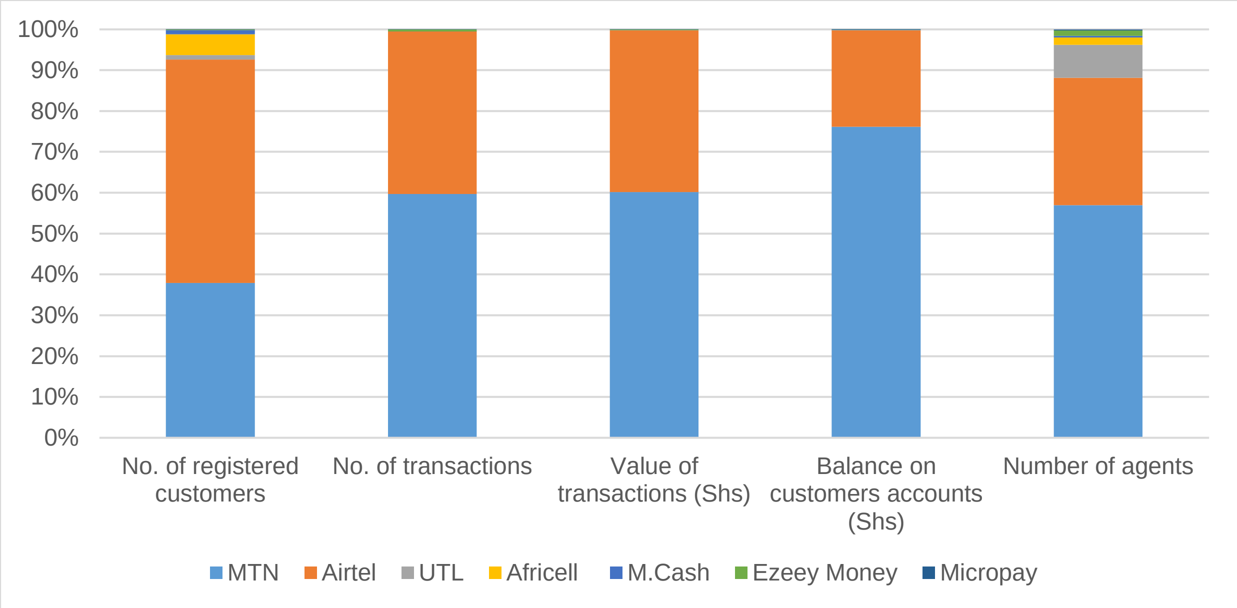
	2011	**2012**	**2013**	**2014**	**2015**	**2016**[1]	**CAGR**
No. of registered customers (Mn)	2.9	8.9	14.0	18.8	21.1	23.7	49%
No. of transactions (Mn)	87.5	241.7	399.5	496.3	693.6	988.4	52%
Value of transactions (UGX Tn)	3.8	11.7	19.0	24.1	32.5	46.0	55%
Balance on customer accounts (UGX Bn)	43.8	72.0	143.5	219.2	325.3	482.5	49%
No. of agents ('000)			52.1	79.0	109.5	127.3	28%
Ave no. of transactions	30	27	29	26	33	41.7	2%
Ave value of transactions (UGX '000)	1 303	1 315	1 359	1	1 540	1943	4%

Source: Bank of Uganda (2011, 2012, 2013, 2014, 2015)

Despite there being several mobile money providers in Uganda, the market is dominated by two MNOs: MTN and Airtel (MacMillan, Paelo and Paremoer, 2016). While Airtel technically has the largest number of registered mobile money subscribers (Figure 3), this is because Airtel customers are automatically registered for mobile money services when they purchase a sim card. MTN mobile money subscribers have to specifically request and register for the service. In terms of the number and value of transactions, MTN has a 60% market share.

Figure 3: Market Share of Mobile Money Providers in Uganda, 2016

[1] Data for 2016 is for the third quarter of the year and the data for the fourth quarter had not yet been released.



2.3.2. Service offering

Though mobile money is still primarily used as a person-to-person domestic remittance service, the range of services has expanded to include: remote purchase of airtime, bill payments for utilities, solar power products, school fees, university fees, taxes, parking, insurance premiums, national lottery, pay-TV services payments; bulk payment of salaries, international remittances, and savings. The majority of utility payments are carried out using MTN mobile money services which facilitate an average of 71.4% of the utility payments monthly (MTN, 2015). However, person-to-person remittance is still by far the most important service, accounting for 90% of MTN's mobile money revenue in 2015.

Mobile banking services such as microloans are now available from MTN mobile money services. In August 2016, MTN launched MoKash in partnership with Commercial Bank of Africa (CBA) through which subscribers can open a savings account and apply for loans. In December 2015, MTN Uganda signed a memorandum with Safaricom in which MTN subscribers could receive transfers from M-PESA subscribers in Kenya. MTN Uganda subscribers could also receive transfers from MTN Rwanda (Dignited, 2016). These, however, were only inbound transfers. In November 2016, MTN mobile money subscribers could now also send mobile money to MPESA customers in Kenya and MTN Rwanda customers.

2.3.3. Legal and regulatory framework

In Uganda, the Uganda Communications Commission (UCC) and the Bank of Uganda (BOU) regulate the mobile money sector. The MNOs are under the mandate of UCC which is given its authority by the Uganda Communications Act of 1997 to provide licences, regulate tariffs, manage spectrum and deal with competitive concerns in the telecommunications sector. There is as yet no competition law or general competition authority. The regulation governing the sector are as follows:

i. The Uganda Communications Act of 1997 and as amended in 2013
ii. The Financial Institutions Act, 2004 and as amended in 2016
iii. Mobile Money Guidelines, 2011

At the moment there is no legislative framework for the mobile financial services sector. A draft National Payments Systems Act has been drafted but is yet to be adopted by the parliament. To enable the operation of mobile money services the BOU issued “letters of no objection” to MNOs that partnered with banks to launch mobile money services (Staschen, 2015).

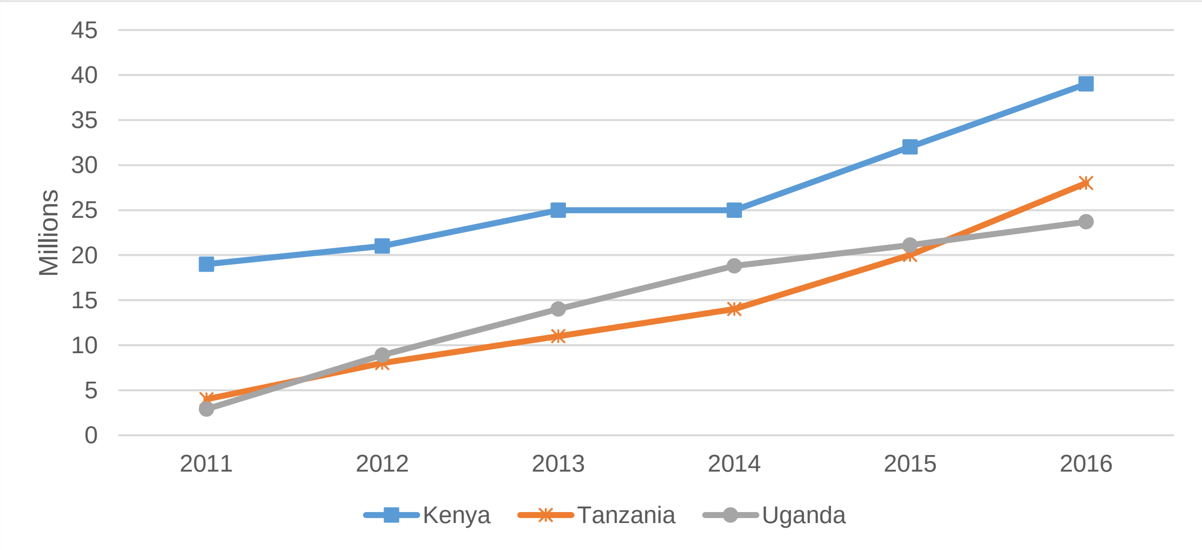
The BOU released Mobile Money Guidelines in 2011 which among other things allowed non-banks to issue electronic money and regulate certain aspects of market conduct. Under the Mobile Money Guidelines, a non-bank entity must partner with a licensed financial institution over which the BOU has authority. It is the bank which then applies for approval to provide mobile money services on the behalf of the two entities. Once the necessary approval is obtained, mobile money is considered a financial institution business and is thus regulated under the Financial Institutions Act, 2004. Any subsequent products and services that the MNO would like to introduce require the partner banks acquiesce as it is the bank that applies for approval for the service from the BOU. The Mobile Money Guidelines further prohibit agent exclusivity and advocate for measures to protect consumers and protect against fraud.

2.4. Comparison of country experiences

2.4.1. Trends

In terms of number of subscribers, Kenya has been leading over the past five years (**Figure *4***). Tanzania was lagging behind but the number of subscribers shot up in 2015. The reduction in number of Ugandan subscribers between 2014 and 2015 may have due to the disconnection of subscribers who had not yet registered their sim cards as per KYC requirements issued by UCC. Tanzania, on the other hand, experienced a spike in growth in 2014, likely due to the implementation of interoperability in 2014.

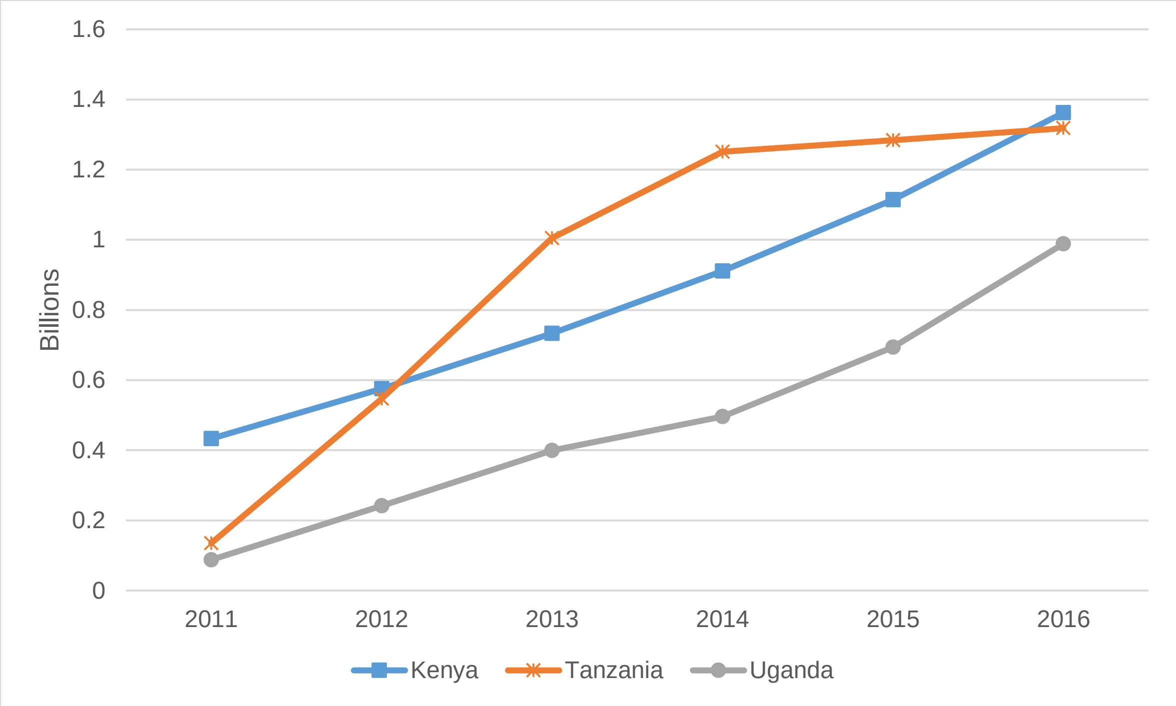
Figure 4: Number of subscribers (2011-2016)



Source: Central Banks of Kenya, Tanzania and Uganda

Prior to 2012, Kenya was leading in terms of number of transactions, however, Tanzania took over from 2012 but once again fell behind Kenya just before 2016 (**Figure *5***). Uganda has lagged behind Kenya and Tanzania in terms of number of transactions for the entire period between 2011 and 2016.

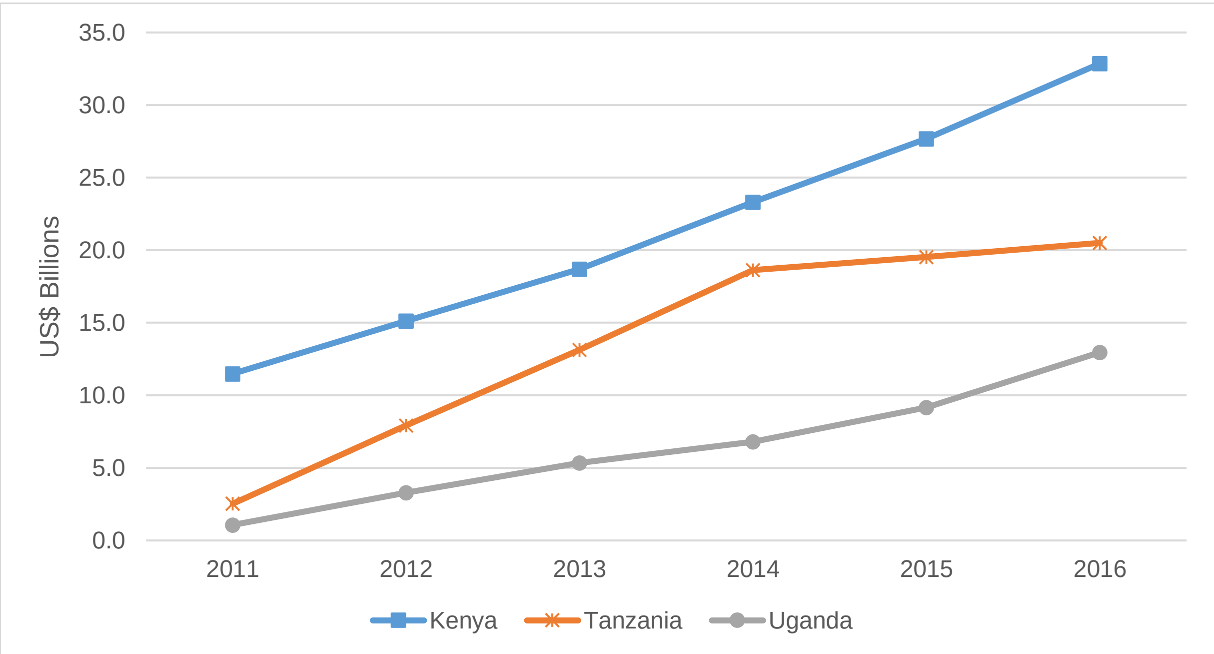
Figure 5: Number of Transactions (2011 - 2016)



Source: Central Banks of Kenya, Tanzania and Uganda

Kenya has shown stable growth in the value of transactions between 2011 and 2016 (**Figure 6**). Tanzania showed a sharp growth between 2011 and 2014 before growth dropped. The value of transactions in Uganda has been growing but at a much lower rate and level than its East African counterparts.

Figure 6: Value of transactions (2011 - 2016)



Source: Central Banks of Kenya, Tanzania and Uganda

Uganda has been lagging behind in terms of number of subscribers, transactions and value of transactions. This is likely due to the lag in the evolution of regulation in the country that has resulted in the slow introduction of new services (MacMillan, Paelo and Paremoer, 2016). The National Payments Systems is for instance yet to be implemented. Furthermore, the dependence of the mobile money provider on the bank partner to first approve of a new product and furthermore result for approval for its implementation from the BOU results in delays in the provision of new services and products that are more suited to consumers and that might result in greater uptake of the service. This is evident also in the fact that Uganda was the last of the three countries to introduce savings and credit facilities. It is also yet to provide insurance products from the MNO.

2.4.2. Legal and regulatory framework

Of the three East African countries, Uganda appears to be the most behind in terms of responsive regulation. Kenya and Tanzania have been able to develop regulation to legalise and regulate the mobile financial services sector in their National Payment Systems. At the moment, the most definitive regulation for the mobile financial services sector in Uganda is the Mobile Money Guidelines. The lack of a National Payment Systems Act in Uganda means that MNOs cannot independently issue electronic money. They are also dependent on the banks they are partnered with in order to acquire approval for innovative products. As banks are in some case rivals in terms of the mobile financial services provided, there is an incentive to delay processes required to gain such approval. Also, banks are by their nature conservative and slow to accept new innovations which may delay the implementation of innovative products that can increase financial inclusion.

The lack of a competition law in Uganda is also problematic given the nature of the mobile financial services sector. The sector is highly concentrated and given to the creation no dominant firms as already illustrated in the country profiles. The danger is that these dominant firms have the incentive to abuse their dominance or act anti-competitively to rivals. A number of competition issues have already been identified in each of the three East African countries including cases of margin squeeze for downstream rivals and refusal to provide services (MacMillan, Paelo and Paremoer, 2016; Mazer and Rowan, 2016). One such case has been brought before the courts in Uganda. MTN Uganda was fined UGX 2.3 billion (US$ 662,000) by a Commercial Court for anti-competitive conduct against a downstream rival, EzeeMoney ('Ezeemoney (U) Ltd Vs MTN (U) Ltd', 2015). MTN refused to provide Ezeemoney with essential access to USSD service and phone lines necessary to reach their consumers resulting in a 79% drop in the number of transactions by EzeeMoney. These actions force EzeeMoney to choose a new mode of operation using Point of Service (POS) equipment rather than USSD. Despite the UCC having the mandate to prosecute such a competition case and even charge a penalty of up to 10% of MTN Uganda's profits, it is yet to do so (MacMillan, Paelo and Paremoer, 2016). The presence of competition law or authority could play a big role in ensuring that competition in the sector is competitive or at least dissuade the anti-competitive behaviour in the sector.

2.4.3. Rates and charges

In terms of prices charged for mobile money transfers, comparisons were made for three tiers of transfer: US$ 5, 15 and 150 (***Table 5***). On average, total transfer charges are lowest in Kenya. Transfer charges. Tanzania has the highest cash-out rates, largely to incentivise its agents. Uganda's off-net charges are on average highest in the region, particularly for the

$150 amount where the total transfer rate including cash-out is as much as 58% higher than the rate in Kenya and 73% higher than the rate charged in Tanzania.

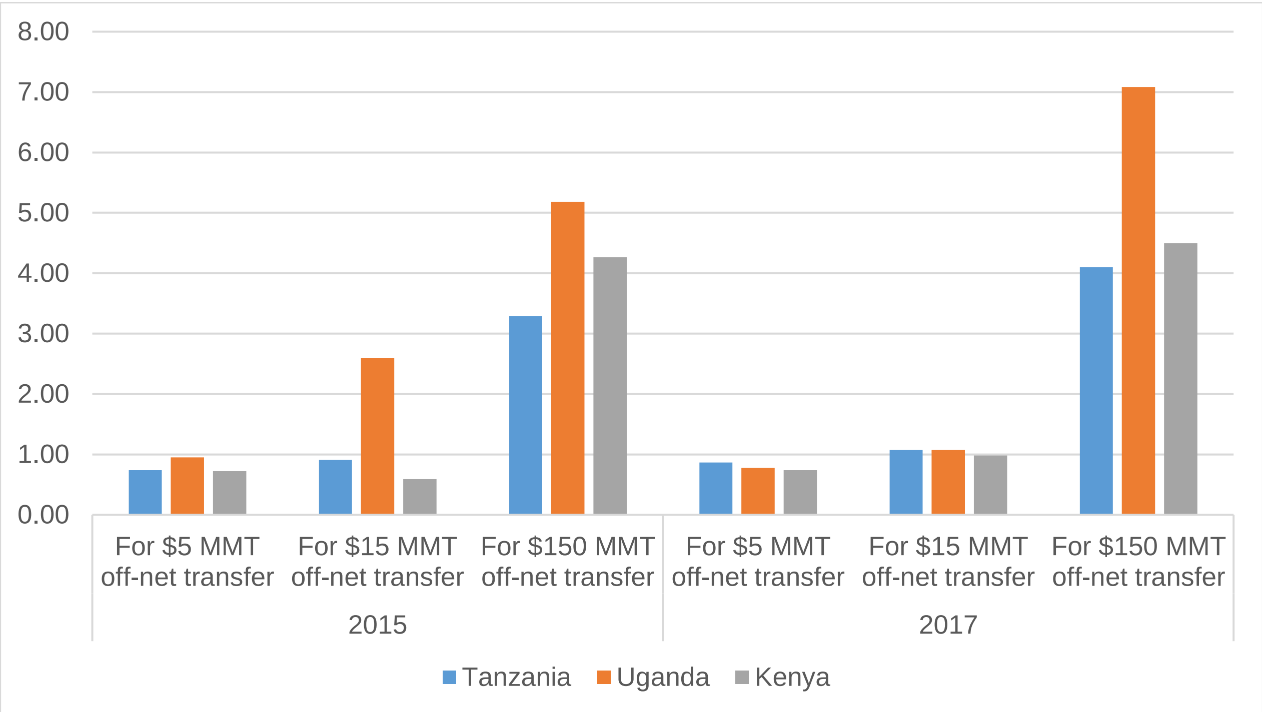
Table 5: Comparison of mobile transfer charges, June 2017

	Kenya	**Tanzania**	**Uganda**
US$5 MMT			
Transfer	0.15	0.14	0.28
Cash-out	0.27	0.73	0.25
Total	0.41	0.87	0.53
US$15 MMT			
Transfer	0.39	0.16	0.28
Cash-out	0.27	0.91	0.42
Total	0.66	1.07	0.70
US$150 MMT			
Transfer	0.98	0.68	0.56
Cash-out	1.73	3.42	3.52
Total	2.71	4.10	4.09
For $5 MMT off-net transfer	0.74	0.87	0.78
For $15 MMT off-net transfer	0.98	1.07	1.07
For $150 MMT off-net transfer	4.50	4.10	7.09
Exchange rate used (to US$)	101.75	2195.27	3549.50

Source: Safaricom M-Pesa, Vodacom-Pesa and MTN Uganda websites

Transfer charges in Uganda were highest in the region until May 2017, when MTN the largest mobile money provider in the country dropped prices.

Figure 7: Comparison of off-net mobile money transfer charges for Uganda, Tanzania and Kenya, US$ (largest operators in each country)



Source: MTN Uganda, Vodacom Tanzania, and Safaricom Kenya websites

In terms of savings and loan rates, Kenya is clearly the more competitive country, providing in at least 3 times the interest rate that Ugandan and Tanzanian operators are providing. Safaricom's M-Pesa provides consumers with interest rates of 7.35% for whatever amount they choose to save. In Uganda and Tanzania by contrast, there are different amounts of interest provided depending on the amount saved. Starting from 2% for amounts as low as US$ 0.5 and the highest being 5% for amounts above $443 (***Table 6***). The loan fee charged is also lowest in Kenya at 7.5% while the fees charged in both Tanzania and Uganda is 9%. At first glance, Safaricom M-Pesa appears to have the most competitive rates, however, it must be noted that in Tanzania, interest on the amounts left on the mobile money wallets are distributed regardless of whether the subscriber makes use of the savings facility or not.In Uganda by contrast, the interest rates provided and fees charged are unfavourable in comparison to the countries. The clear dominance of MTN mobile money combined with the lack of an effective competition law may contribute to the high prices for consumers.

Table 6: MNO Savings and Loans rates, 2017

Tiers US$	Kenya	Tanzania	Uganda
Savings interest rate earned			
0.5 - 83	7.35%	2%	2%
83 - 88	7.35%	2%	3%
89 - 221	7.35%	3%	3%
222 - 443	7.35%	4%	4%
Above 443	7.35%	5%	5%
Loan fee			
Min 1	7.5%	9%	9%

Source: Safaricom Kenya, Vodacom Tanzania and MTN Uganda websites

3. Conclusion

Growth in mobile money has been significant globally but none so much as in East Africa. Kenya has been a shining beacon but Tanzania is also showing phenomenal growth despite a slow start. While there is increased uptake of services in Uganda, the slow development and implementation of regulation appear to be impeding the provision of more innovative services. The lack of competition law in Uganda also seems to have resulted in MNOs charging high prices to consumers, a clearer barrier to increased financial inclusion. In Kenya, the next step in the sector's development would be interoperability. Tanzania's case study has shown that companies can remain competitive even while practicing interoperability.

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