

# **Regulatory frameworks and Implementation patterns for Mobile Money in Africa: The case of Kenya, Ghana and Nigeria**

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## **ABSTRACT**

Mobile money in Africa is implemented in different ways. The Bank led, Mobile Network Operator led and the Bank focused models of implementing mobile money are present in Ghana, Kenya and Nigeria respectively. These models are present depending on the financial regulatory environment in the various countries. This paper investigates the stakeholder relations to find out how the various mobile money implementations are organized and what the resultant effects to the market are. This is a multi-case study research with data gathered quantitatively through exploratory research methods. The stakeholder theory and the Actor Network Theory are used for the analysis. The results indicate that telecom regulators are passive to regulating mobile money, which is a positive. However the financial regulators regulate mobile money based on how they perceive mobile money, either as a core or non-banking service. Results also indicate that although mobile money is regulated differently in the three countries, it is difficult to really say that one regulatory measure is better than the other.

## **1. INTRODUCTION**

Data from the World Bank published in December 2012, indicates that 2.5 Billion people are unbanked (World Bank, 2012). The same report indicates; this figure includes 75% of the world's poor living in rural areas. Data from ITU facts and figures in 2013 indicates; mobile cellular penetration globally stands at 96% (ITU, 2013). Towards the end of last century, the possibility to create an innovative means by which people in rural areas can access some form of banking services was made possible by the value added service tagged 'mobile money'. Mobile money is available in certain countries globally. However the service deliveries differ. In the EU, customers swipe their smart phones on card readers to purchase goods and services with their mobile phones<sup>1</sup>. An example is mPass in Germany which is a mobile wallet service using Near Field Communications (NFCs). In South Korea and Japan, the mobile telecom companies have stakes in credit card companies; this allows the telecom companies offer credit card payment with mobile phones<sup>1</sup>. In Africa, the most common form of mobile money service delivery is in form of money transfer services ( Hughes & Lonie, 2007) . An example is the Kenyan M-PESA mobile money service operated by Safaricom. Other initiatives include the Roshan M-Paisa (Afghanistan), Banglalink (Bangladesh) and other initiatives in South America facilitated by TiGO<sup>2</sup>.

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<sup>1</sup> See Freshfields Bruckhaus Deringer (2013) retrieved from <http://telecomfinance2013.files.wordpress.com/2013/01/which-way-for-mobile-money1.pdf>

<sup>2</sup> See Western Union retrieved from <http://www.westernunion.com/mobile>

Mobile money has served both as a complement to traditional banking services and in other cases served as the only form of non-traditional banking services. In Africa, the fastest growing brand of mobile money in one country has been the M-Pesa both in Kenya and Tanzania ( Hughes & Lonie, 2007). The other competing brands in Africa are mobile telecom companies like MTN, Airtel and TiGO and a host of bank and non-bank led initiatives. MTN, the largest mobile network in Africa has implemented mobile money services in most countries where they operate. However, the implementation of mobile money as a service in Africa is not uniform. The bank led initiative, the non-bank led initiatives, the Mobile Network Operator led initiative and the bank focuses initiatives are some mobile money delivery models in Africa. These initiatives are determined by the presence or absence regulatory frameworks stemming from idea of mobile money provider acting not as a bank and vice versa respectively. In this paper, the stakeholder analysis and the concept of translation from the Actor Network Theory is used to analyze the Mobile money networks in Ghana, Nigeria and Kenya. The aim is to find out how the networks are formed and what role regulation plays in the implementation of mobile money. Ghana adopts the MNO/bank led initiative, Kenya adopts the MNO led initiative and Nigeria adopts the Bank led and bank focused initiative.

## **2. MOBILE MONEY IN AFRICA**

Mobile money in Africa has been an evolving phenomenon. Kenya and South Africa have led the way with a lot of other African countries following not far behind. The existence of mobile money in Africa can be viewed in two ways. One way would be a domestic point of view and another would be an international point of view. International in this context is Africa. The domestic case here, for example, is the Kenyan M-PESA. The international case here for example is the MTN mobile money brand. MTN is available in 16 African countries including Ghana and Nigeria as a Mobile Network Operator (MNO) and in Kenya Ghana and 6 other African countries as an Internet Service Provider.

### ***2.1 Overview of the Kenya M-PESA***

The most talked about mobile money scenario has been the Kenyan M-PESA owned by Safaricom (Mas & Morawczynski, 2009). The main attraction to the Kenyan case by most researchers has been; a lot of unbanked Kenyans are able to remit money to their relatives and friends across the country using the M-PESA Mobile wallet ( Olga & Mark , 2009) . The M-PESA was launched in March 2007 and in 2009, it recorded more than 6 Million registered users compared to South Africa's WIZZIT , that recorded 250 000 customers at the same period of time (Mbiti & Weil, 2011). More than 50% of M-PESA customers are said to be unbanked (Tarazi & Breloff , 2010).

There are also interests in the operation of the M-PESA (Jack & Suri, 2010). With M-Pesa, the Subscriber first registers with an M-PESA agent as a customer with the Kenyan national ID card or passport to open an account. The subscriber then deposits cash to Safaricom through their cellular phones SIM cards. Safaricom grants a commodity known as 'e-float' which has the same value as the cash deposited by the customer. There is no charge for depositing funds in a customer's account. However Safaricom charges for withdrawal of the cash. The e-float commodity can be transferred from one customer the other using SMS technology. M-PESA subscribers can engage in Peer-to-Peer transfer, pay utility bills, purchase at department stores, buy mobile phone units, Pay School fees etc. Recently

Safaricom announced the possibility of making and M-PESA to bank transfer and vice versa<sup>3</sup>. The M-PESA value chain is made up of Agents and Super-agents who are located in close proximity to the subscriber. The diffusion of MPESA has been enhanced greatly by the need of cross country remittances (Tobbin & Kuwornu, 2011). The need for these remittances by the unbanked led to the demand for some form of convenient, safe and quicker way of remitting cash across Kenya. Safaricom's innovative idea of converting cash to M-cash (the float) was to facilitate safety in the transfer of cash (Heeks, 2012). With the float Kenyans could also travel safely without carrying bulk money. However, the demand side of M-PESA service delivery, although legitimate, would not be possible without the availability of the Agents and Super Agents who earn commissions on every 'float' they sell depending on the amount transacted (Berman, 2011). Hence the level of demand coupled with the incentives for the agents have led to the rapid diffusion of M-PESA. The agency network has grown to include financial institutions, paybill partners, bulk payment partners alongside the agent network. Table 1 below reflects the M-PESA Agent network by the end of March 2012 and the number of customers they serve.

**Table 1 M-PESA Agency Network and the Number of subscribers by March 2012**

Category	Description	Number
Number of active customers		14.91 Million
Number of agent network outlets nationwide		39000
Pay bill partners	Utilities	900
Bulk payment	Corporate payment	300
Partner banks		25
ATM access points		700

Recently Safaricom has launched a subsidiary to M-Pesa by the name M-KESHO which now provides actual banking services to M-PESA customers<sup>4</sup>. The delivery of M-KESHO is in partnership with Equity bank Kenya (Kendall, Maurer, Machoka, & Veniard, 2011).

There has been interest in the financial value of the subscriptions (Mbiti & Weil, 2011). This is fuelled by interest in the impact of M-PESA on the Kenyan economy (Olga, 2009) (Mbogo, 2010). Person to person value of transaction for M-PESA in 2009 was KSH 26 billion (approximately US \$330 million by then) (Plyler, Haas, & Nagarajan, 2010). Since inception to 2009, US\$3.7 billion was transferred by M-PESA customers equaling 10% of the Kenyan GDP (Aker & Mbiti, 2010). The level of Adoption of M-PESA, as seen in figure 1, in the last 7 years of its existence has consistently been on the increase. Data extracted from Safaricom's Annual General Reports<sup>5</sup> indicate; in 7 years, the level of adoption of M-PESA has increased from almost 2 Million subscribers from its inception in 2007 to more than 15 million subscribers in the first half of 2013. The reference quarter expressed in figure 1 is the first quarter of every year. Data from Safaricom's half quarter financial results for 2013 indicate M-PESA earnings were KSH 10.43 billion (US\$ 124.3 million)<sup>6</sup>. The number of agents also rose to 45, 540. Inter customer transfer per month amounted to KSH 80 billion (US\$ 953.5 million) which signifies 31% of the Kenyan GDP<sup>6</sup>. Customer deposits per month via M-PESA agents amounted KSH 69 billion (US\$ 822.4 million). Amounts withdrawn via M-PESA agents amounted to KSH 62 billion (US\$ 738.9 million). Within the financial year in focus, M-PESA contributed to 18% of Safaricom's total revenue.

<sup>3</sup> See <http://www.safaricom.co.ke/personal/m-pesa/m-pesa-services-tariffs/m-pesa-to-bank>

<sup>4</sup> See <http://www.safaricom.co.ke/business/m-pesa/mobile-banking-services>

<sup>5</sup> See <http://www.safaricom.co.ke/about-us/investor-relations/annual-reports-pdf>

<sup>6</sup> See [http://www.safaricom.co.ke/images/Downloads/Resources\\_Downloads/Half\\_Year\\_2012-2013\\_Results\\_Presentation.pdf](http://www.safaricom.co.ke/images/Downloads/Resources_Downloads/Half_Year_2012-2013_Results_Presentation.pdf)

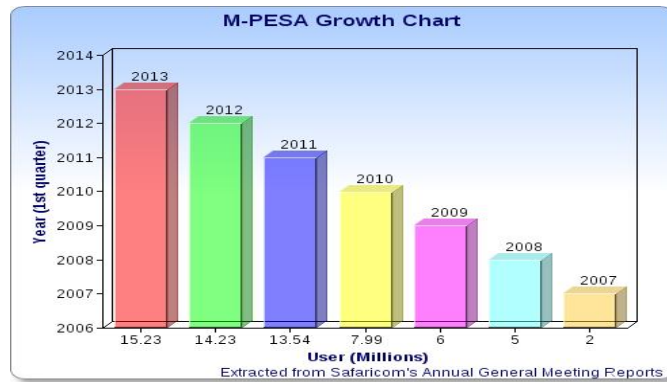


Figure. 1 M-PESA Growth Rate

Source: Safaricom's March 2012 Annual report<sup>7</sup>

Another source of interest is the effectiveness of M-PESA in terms of reliability of service delivery (Plyler, Haas, & Nagarajan, 2010). Although Safaricom's gains can always be praised, there is still a long way to go for M-PESA. Kenya's population is about 43 million (Population Reference Bureau, 2012). A lot of Kenyans are not on the M-PESA. However there is promise of greater diffusion as Safaricom continues to expand her mobile networks.

## 2.2 MTN Mobile Money

There isn't as much literature on the MTN mobile money as the Kenyan M-PESA. That doesn't in any way reduce the importance of MTN in attempting to make with their mobile money product. MTN Mobile money was introduced in 2005 in South Africa through a Joint venture firm set up by Standard bank of South Africa and MTN (Saji, 2008). In South Africa, the Bank led model of mobile money delivery is adopted. However the operation of MTN Mobile Money varies from one jurisdiction to another. MTN uses the credit system, rather than an e currency or commodity equivalent of the cash value. MTN operates in 16 African countries however the Mobile Money brand is available in only Uganda, Ghana, Cameroon, Rwanda Benin and Cote D Ivoire ( Kshetri & Acharya, 2012). Uganda and Ghana are English speaking countries, below is an overview of MTN mobile money in these two countries.

In Ghana, the competitor to MTN Mobile Money is the Airtel ZAP and TiGO Cash (Tobbin & Kuwornu, 2011). The delivery of MTN Mobile Money is enabled by a joint venture between MTN and the banks. With the mobile wallets application, subscribers of Mobile Money can deposit, transfer and withdraw money from their mobile wallets across Ghana<sup>8</sup>. Subscribers can also transfer money from one wallet to the other. There are transaction fees for each transaction made as decided by the partner bank. The extension of mobile money to the subscribers has been through agents. Recent reports indicate that the level of adoption of mobile money in Ghana is low (Tobbin & Kuwornu, 2011). One major drawback here is that one has to have the mobile money application on his or her mobile device before the service can be used. However in 2012 the MNOs providing Mobile Money recorded the following daily transaction figures as well as subscribers. TiGO recorded GHC 11 million (US\$ 5.5 million) mobile money transactions daily, Airtel GHC 4 million (US\$ 2.02 million) mobile money transactions daily and MTN recorded GHC 1.5 million (US\$ 759, 690.77) mobile

<sup>7</sup> See [http://www.safaricom.co.ke/safaricom\\_annual\\_report/pdfs/Safaricom\\_Annual\\_Report.pdf](http://www.safaricom.co.ke/safaricom_annual_report/pdfs/Safaricom_Annual_Report.pdf)

<sup>8</sup> See <http://www.mtn.com.gh/SubPage.aspx?pageid=573>

money transactions daily<sup>9</sup>. In the same year MTN had 3 Million mobile money subscribers, Airtel had 900 000 mobile money subscribers and TiGO had 3.75 Million mobile money subscribers<sup>9</sup>.

The development of mobile money in Uganda was inspired by the success of mobile money in Kenya (Ssonko, 2011). The mobile operators, just like in Kenya, are the dominant stakeholders. In Uganda, the MTN mobile money is a product of the MTN Mobile banking product. MTN has about 15000 agent outlets and about 3.5 million Mobile money Subscribers<sup>10</sup>. The Airtel Mobile money is the competitor of the MTN Mobile money brand. Airtel provides deposits and withdrawal of cash using mobile telephones. MTN on the other hand enables money transfer services. Users can send and receive money from anywhere in Uganda. The bank also acts as both super-agent and ordinary agents for MTN<sup>11</sup>. The banks are mandated by law to maintain an account for the e-currency (Ssonko, 2011). In 2011, 1.64 million transactions worth Shs 58.2 billion (US\$ 35.7 million) were executed per month (Ssonko, 2011).

MTN by the end of 2012 had about 10 million mobile money users across its network in Africa and the Middle East<sup>12</sup>. This is lower than Safaricom's mobile money subscriber base in Kenya alone. MTN has a subscriber base of 42 million subscribers in Nigeria alone. Unfortunately, Nigeria doesn't permit telecommunication companies to deliver mobile money services. Maybe that would have changed things for MTN as the need for remittances across country still exists in Nigeria.

### **3. STAKEHOLDER THEORY AND ACTOR NETWORK THEORY**

Stakeholder theory is another name for 'Stakeholder Management' (Freeman, *The Politics of Stakeholder Theory: Some Future Directions*, 1994). It was a theory Stakeholder theory can be descriptive (description of what a corporation is), instrumental (establishes a framework for examining stakeholder connections between stakeholder management and achievement of cooperate goals), normative (Stakeholders are persons or groups with legitimate interest in the working of the cooperation and no stakeholder should be exempted) and managerial (recommend attitude structures and practices that constitute stakeholder management) (Donaldson & Preston, 1995). The descriptive approach has been criticized as being unfocused (what it is being proved or disproved is unclear, the normative approach has been criticized because not all stakeholders can be satisfied always and instrumental approach has been criticized as not being feasible and not always linked to the organization (Bailur, 2006). Stakeholders are regarded as groups and individuals that have a stake to the firm (Freeman, 2002). However in this paper, the role of financial regulation to the development of the mobile money phenomena in three countries is being analyzed. The mobile money ecosystem consists of stakeholders with different stakes in the ecosystem. To describe the phenomena, the descriptive stakeholder approach is adopted. Here stakeholder identification and stakeholder roles are described. As part of the description, the normative approach is adopted to explain how the stakeholders get involved in the project and how they are managed. Stakeholder theory in this paper is not used to prove a theory but to describe the management process of the mobile money ecosystem in the three cases. The techniques for stakeholder management for a project life cycle includes project identification and analysis, project

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<sup>9</sup> See <http://www.technologybanker.com/mobile/tigo-ghana-has-highest-volume-of-mobile-money-users#.UYLVtErv23s>

<sup>10</sup> See <http://www.gsma.com/mobilefordevelopment/how-mtn-uganda-communicates-to-its-network-of-15000-agents>

<sup>11</sup> See Centenary Bank Uganda <http://www.centenarybank.co.ug/product/money-transfer/mtn-mobile-money-transfers>

<sup>12</sup> MTN Group annual report 2012 [http://www.mtn-investor.com/mtn\\_ar2012/pdf/full.pdf](http://www.mtn-investor.com/mtn_ar2012/pdf/full.pdf)

planning, Cost Benefit Analysis and resource allocation, project implementation, project monitoring and evaluation (Bailur, 2006). The parameters for understanding the management based on this stages include, who is informed, who is being consulted, who is being partnered and who controls each stage? Based on these parameters, the stakeholder with total control or with a higher percentage of control can be determined.

To be able to identify the levels of power control, the Actor Network Theory (ANT) comes into play. Actor Network Theory is an agent-based approach to explaining networks and the interactions (Social relations, Power relations and organizations) within the network (Law, 1992). Law (1992) went on to explain that ANT doesn't discriminate between people and objects as actors in a network and even further explains that an agent is not an agent because it is human, but an agent can also be an agent if it inhabits elements that would enable the network stretch out. Bruno Latour explains that modern society can't be explained without taking into cognizance the 'Fibrous, threadlike, Wiry, stringy, ropy, capillary character that is never captured' by the conventional notion of network 'layers, levels, territories, spheres, categories, structures and systems' (Latour, 1996). Michel Callon in studying power relations in a network used what he called "Four 'moments' of translation" (Callon, 1986). The study centered on how marine biologists made an attempt to restock the St Brieuc Bay to produce more scallops. The scallop population had been on the decline and these scientists were eager to first know the reason behind the decline. The scientists had to make themselves indispensable to the actors by defining the problem faced actors in the network and how to deal with it. The process is called Problemization. The researchers had to identify the interests of the actors and charted their investigation to merge their interest and that of the actors. This is called negotiating the 'Obligatory Passage Point' (OPP) for the flow of communication. The next step involved the researchers recruiting the actors in the network to assume roles in the network. This is the Interestment phase. The third phase is the definition of roles and actually mapping the interrelations of the roles. This is called the enrollment phase. The final stage consists of the researchers setting themselves as the spokesperson of the network and the mobilization of the actors to action. This is the mobilization stage. Michel Callon explains that the process of translation involves negotiations among the actors in the network. The translation process could fail as in Callon case study or succeed. But one could clearly see that the central power of the network were the researchers.

The Sociology of translation of the ANT aids in the understanding of the power relations in the mobile money ecosystem of the three cases. Understanding the translation with respect to the evolution of mobile money with these three mobile money cases help in the identification of the stakeholder with the highest influence and power. Hence one can determine if the mobile money implementation is either bank led, MNO led, bank/MNO led or bank focused.

#### **4. METHOD**

Mobile money is an M-commerce service available in many African countries. Nigeria, Kenya and Ghana are countries with three distinct regulatory approaches to the adoption of mobile money. To study these cases, qualitative data gathering methods were adopted to understand the regulatory frameworks and how it has shaped the implementation patterns of mobile money. Data on the regulatory framework for mobile money were gathered mostly from Safaricom, MTN Ghana, Bank of Ghana, Central Bank of Nigeria and the Bank of Ghana websites. Supplementary data was gathered by literature review. An interview was also conducted with an ICT for development academic in Ghana to understand the

implementation of mobile money in Ghana. The stakeholder theory is being used to explain the organization of the mobile money eco system in Ghana, Nigeria and Kenya. Stakeholder analysis is used to identify the stakeholders and also to map the Power Interest matrix of each stakeholder. The study is exploratory in nature.

## 5. RESULTS AND ANALYSIS

### 5.1 Case of M-Pesa (Kenya)

#### M PESA Stakeholders

Data gathered from Safaricom’s website indicate the following stakeholders. The Network Operator (Safaricom), the Super-Agents, the Agents, the Subscribers, the financial regulator and the telecom regulator. Table 2 below grants a glimpse to the stakeholders in these categories.

**Table 2 Stakeholder Identification for M-PESA**

Stakeholder Category	Stakeholder
<b>Network Operator</b>	Safaricom
<b>Super Agents</b>	Banks, registered super Agents
<b>Agents</b>	Individual kiosk owners, registered agents, Safaricom outlets, banks
<b>Subscriber</b>	
<b>Financial regulator</b>	Bank of Kenya
<b>Telecom regulator</b>	Communications Commission of Kenya

These stakeholders collaborate both directly and indirectly in the delivery of the M-PESA service. Safaricom, a brand of Vodafone delivers the M-PESA service in three ways. The first delivery mode is direct and the last two indirectly as seen in figure 1 below.

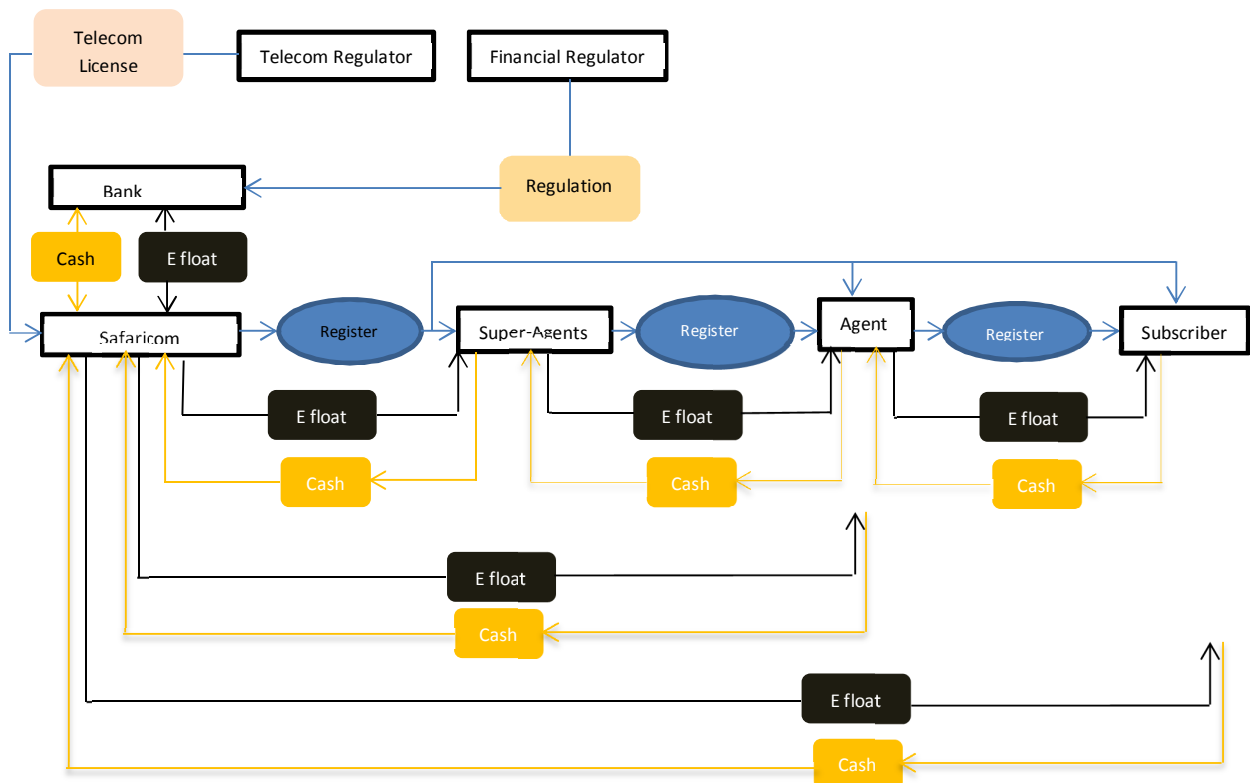


Figure .2 Stakeholder Coalitions with respect to MPESA

With the direct mode, the subscriber operates directly with Safaricom. Another delivery method is the subscriber dealing with an agent. The third mode is the delivery of the MPESA service through a 'Super-Agent' (Berman, 2011). The super-agent is the middle man between Safaricom and the agent that deals with the customer. In the case of M-PESA, the activities of Safaricom in this regard are not regulated either by the Kenyan Communications Commission (the telecom regulator) or the Central Bank of Kenya (the financial regulator). The Kenyan Communications Commission only regulates communications services, it doesn't regulate either electronic or mobile commerce (Omwansa, 2009). The operation of the M-PESA mobile money brand has some similarities to a banking system, although Safaricom has been quick to rebut that fact (Jack & Suri, 2010). However the Central Bank of Kenya and the Kenyan Ministry of finance in 2007 and 2008 respectively did agree that M-PESA was not a banking business (Alliance for Financial Inclusion, 2010). This is largely because the money amassed from the operation was stored in a physical bank account at the Commercial bank of Kenya and not by Safaricom (Omwansa, 2009). Hence M-PESA isn't public regulated.

Safaricom is the central player in the development and deployment of the M-PESA brand. Figure 1 is designed using the Actor Network Theory. Safaricom forms the obligatory passage point for the network. The company identifies the problem and adopts a solution to the problem (Heeks, 2012). They then proceed to recruit the agents either directly or through Super-Agents to carve a path for efficient service delivery (Interestment). Safaricom also defines the role of the Super agents, the agents and the non-human actants (Cash, floats, registration materials) as seen in figure 1 (Mobilization). Finally, Safaricom mobilizes the agents to action by developing incentives by way of commission-on-sale (enrollment). These act of collaboration by the stakeholders facilitated by Safaricom fits into the Actor Network Theory's sociology of translation by Michael Callon (Callon, 1986). The network scenario presented above is made up of punctualized networks, which implies that the Super Agents and Agents are networks in themselves. Safaricom and the bank are also part of the Super-Agent and agent networks as they also sell e-float in exchange for cash respectively.

Hence Safaricom also plays a central role in the management of the M-PESA product. The company controls the identification and the analysis of the product development. At this stage they only inform the financial regulator (Alliance for Financial Inclusion, 2010). They had to consult with subscribers by testing the product first. Their initial idea was to develop where Safaricom could facilitate the delivery of microfinance loans through their networks for banks to their customers ( Hughes & Lonie, 2007). However when the service was piloted, customers used it for alternate reasons. The alternate reasons identified led to the prospect of using the service as a form of cross country remittance (Heeks, 2012). The banks being the repository of the money and the Central bank of Kenya being the financial regulator, they had to be consulted. The partnership was with the banks. At the planning stage, the bank of Kenya had to be consulted (Alliance for Financial Inclusion, 2010). The banks were partners in the planning. Initially it was the Commercial bank of Kenya. At the Cost Benefit Analysis (CBA) and resource allocation stage, the banks worked in partnership with Safaricom. Safaricom as owners of the product had control. At the implementation stage partnership was extended to the Super-Agents and agents. The summary of the Stakeholder involvement can be seen in table 3



**Table 3 Stakeholder involvement at the different stage of the MPESA**

	Inform	Consult	Partnership	Control
<b>Identification and Analysis</b>	Financial regulator	Banks, Subscribers, Financial regulator	Banks	Safaricom
<b>Planning</b>		Financial regulator	Banks	Safaricom
<b>CBA and Resource Allocation</b>		Banks, Safaricom	Bank/Safaricom	Safaricom
<b>Implementation</b>			Banks/Safaricom/ Agents/ Super agents	Safaricom
<b>Monitoring and Evaluation</b>				Safaricom

Hence as seen in Figure 2 Below, Safaricom is of high importance and also has great influence in the development and deployment of M-PESA.

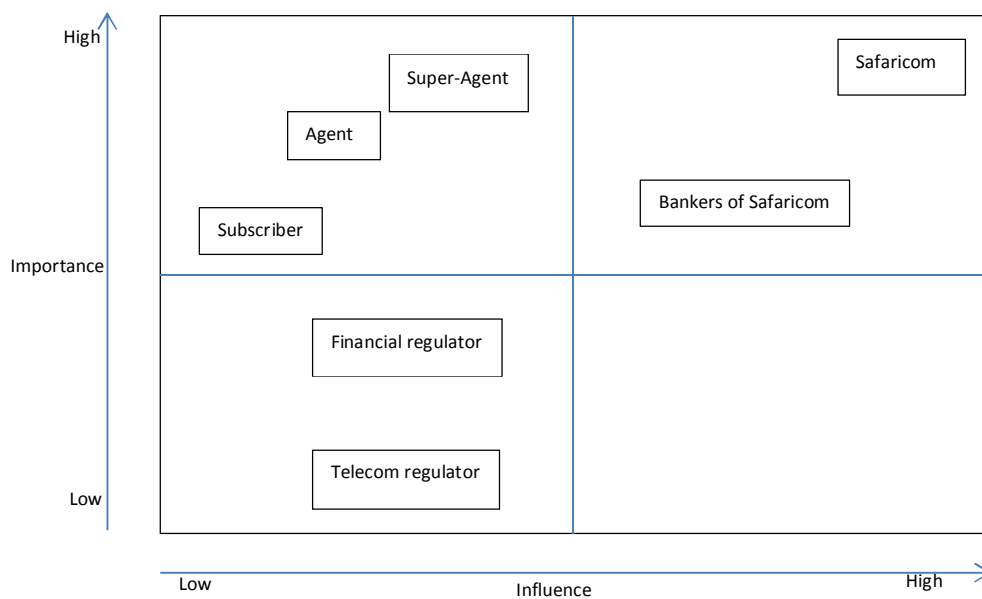


Figure. 3 Importance Influence Matrix for M-PESA

With this strength, Safaricom is able to develop the mobile money market. The competitor to Safaricom’s M-PESA in Kenya is Airtel Money ( Kshetri & Acharya, 2012). The advantage of M-PESA both in Kenya and Tanzania is based on the fact that the mobile money product isn’t viewed as banking services, hence there are no regulatory encumbrances to mobile money development in Kenya.

**5.2 Case MTN Mobile Money Ghana**

**Table 4 Stakeholders Identification for MTN Ghana mobile money**

Stakeholder Category	Stakeholder
<b>Network Operator</b>	MTN, Airtel, Tigo
<b>Super Agents</b>	Banks, registered super Agents
<b>Agents</b>	Individual kiosk owners, registered agents, MTN and Airtel outlets,
<b>Subscriber</b>	
<b>Financial regulator</b>	Bank of Ghana
<b>Telecom regulator</b>	National Communications Authority

The stakeholders involved in the Ghanaian Money market ecosystem are similar to that of M-PESA. The operational structure of mobile money in Ghana is also similar to that of M-PESA, however The structure of the coalition varies slightly as seen in figure 3 below. The telecom companies are licensed as agents of financial institution. They can also be licensed as financial service providers to offer what the Bank of Ghana calls ‘Branchless Banking’<sup>13</sup>. The network operators don’t wholly own the product; rather they provide a technology platform for the receipt and transfer of cash. Since the network operators are partners to the financial institution, they are able to brand the mobile money product. In Ghana, MTN operates the mobile wallet for the partner banks. To enable the diffusion of mobile money, MTN, TiGO and Airtel in Ghana have adopted the agency network of M-PESA.

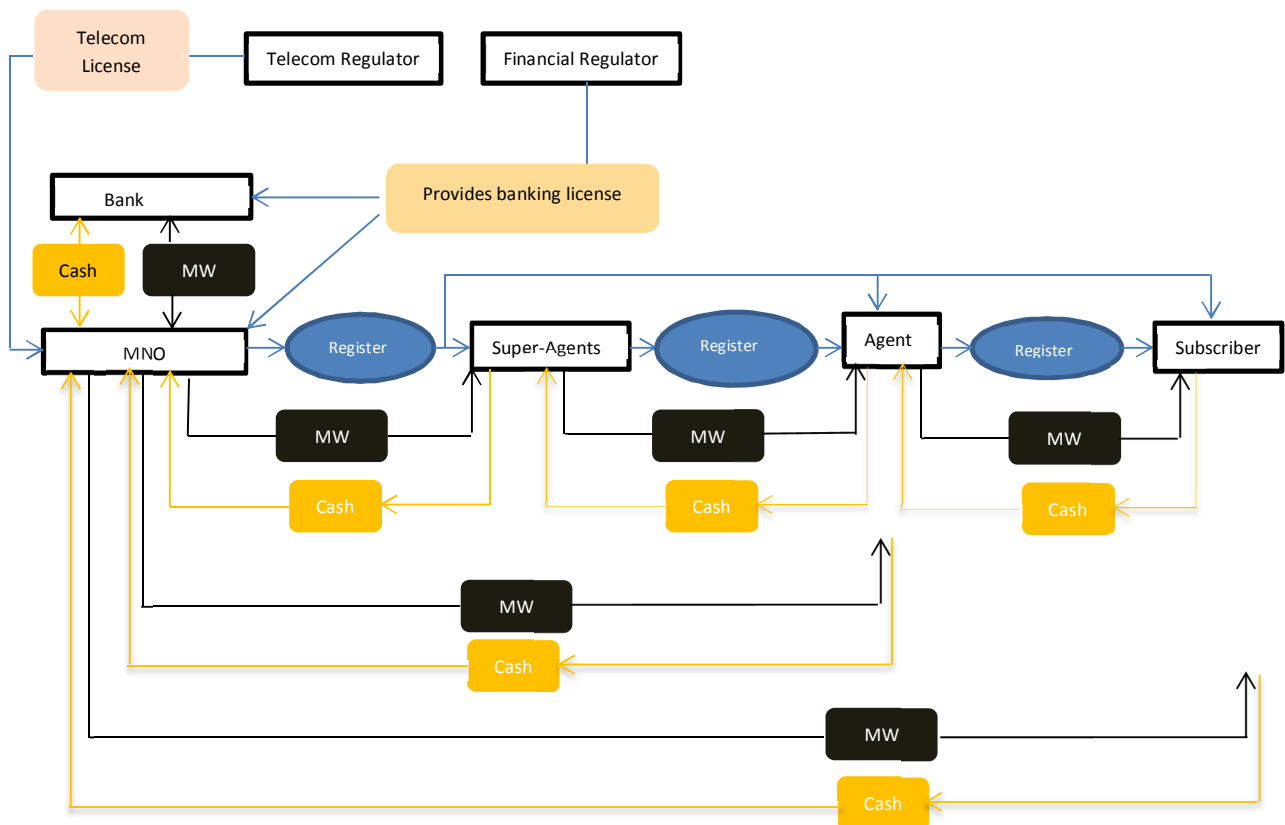


Figure 4 Stakeholder Coalitions with respect to MTN Ghana mobile Money

MNO – Mobile Network Operator, MW- Mobile wallet

Unlike Kenya, mobile money in Ghana is seen as a banking service and the Bank of Ghana is flexible in its outlook to mobile money. Hence their willingness to liberalize the banking sector to include non-banks engaging in mobile money. As in the Kenyan case, the telecommunications regulator only regulates communication services; hence mobile money isn’t regulated from that angle. To get a deeper understanding on the coalition, Michel Callon’s concept of translation is used again. Although the Mobile Network Operators are

<sup>13</sup> See [http://www.mtn.com.gh/library/downloads/Guidelines\\_Branchless\\_Banking.pdf](http://www.mtn.com.gh/library/downloads/Guidelines_Branchless_Banking.pdf)

agents and partners with the bank, it is the Mobile network Operators that build the network that facilitates the diffusion of Mobile Money. The MNO and the Banks identify the problem and decide on a solution (problemization). The MNO's create the Obligatory Passage Point of operation of the network. The MNO's recruit the agents and the super-agents (Interestment). The MNO's also define the role of the agent and super-agents in the network (Enrollment). The MNOs also mobilize the actants to action and they are also the spokesperson of the network (Mobilization).

In managing the development of the products, the MNO/Bank partnership controls the Identification and analysis phase. At this phase the financial regulator is consulted. The consultation is to ensure that the partnership and the product to be offered follows the Bank of Ghana's laid down rules on mobile money. However at the Planning, Cost Benefit Analysis and resource Allocation, Implementation, monitoring and evaluation, the partnership between the banks and the MNO hold supreme as seen in table 5 below.

**Table 5 Stakeholder involvement at the different stages of the MTN Ghana mobile money**

	Inform	Consult	Partnership	Control
<b>Identification and Analysis</b>	Financial regulator	Banks , Financial regulator	Banks/ MNO	Banks/MNO
<b>Planning</b>				Banks /MNO
<b>CBA and Resource Allocation</b>		Banks, MNO	Banks/ MNO	Banks/MNO
<b>Implementation</b>			Banks/ MNO / Agents/ Super agents	Banks/MNO
<b>Monitoring and Evaluation</b>				Banks/MNO

As seen in figure 5 the MNO is the central link of the network with high influence and high importance. The MTN Mobile money was launched in 2009 as a cash management service<sup>14</sup>. One would say that Mobile money in Ghana is enabled by a regulatory framework that enables competition.

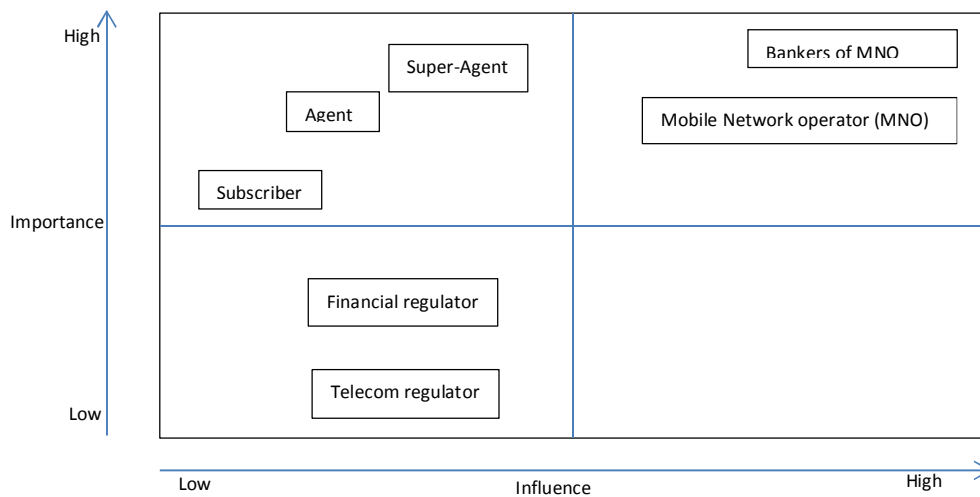


Figure 5 Importance Influence Matrix for MTN Ghana mobile money

<sup>14</sup> See MTN launches Mobile money <http://www.mtn.com.gh/NewsDetails.aspx?pageid=402>

### 5.3 Case Mobile Money in Nigeria

The mobile money framework in Nigeria differs from that of Ghana and Kenya. Data gathered from the Central Bank of Nigeria Mobile money regulatory framework identifies the following stakeholders indicated in table 1. Mobile money services in Nigeria are provided by licensed Mobile money service providers. Telecom network operators are not permitted to operate mobile money (Amrik & Mas, 2009). Banking license regulation doesn't permit such. The license is for the banks and the non-banks, excluding telecom network operators.

**Table 6 Stakeholder Identification for mobile money in Nigeria**

Stakeholder	Description
<b>Scheme Operators</b>	Organizations that provide the infrastructure for the mobile payment systems for the use of participants that are signed-on to their scheme.
<b>Settlement Infrastructure Providers</b>	Organizations providing infrastructure that enables message exchange, switching and settlement facilities for mobile payments services.
<b>Service Providers</b>	Organizations that employ the infrastructure of scheme operators to provide mobile payments services to end users.
<b>Consumers</b>	These are end users of mobile payments services.
<b>Solution Providers</b>	These are information technology software developers that develop mobile payments software, application and other ancillary hardware.
<b>Financial Regulator</b>	They regulate the financial sector of the country, mostly central banks.

Source: Regulatory Frameworks for mobile payments Services in Nigeria<sup>15</sup>

The focal point of the Nigerian Money Market ecosystem is the Central bank of Nigeria as sees below in figure 6. The Central Bank of Nigeria (CBN) is the major Player in the development of mobile money in Nigeria.

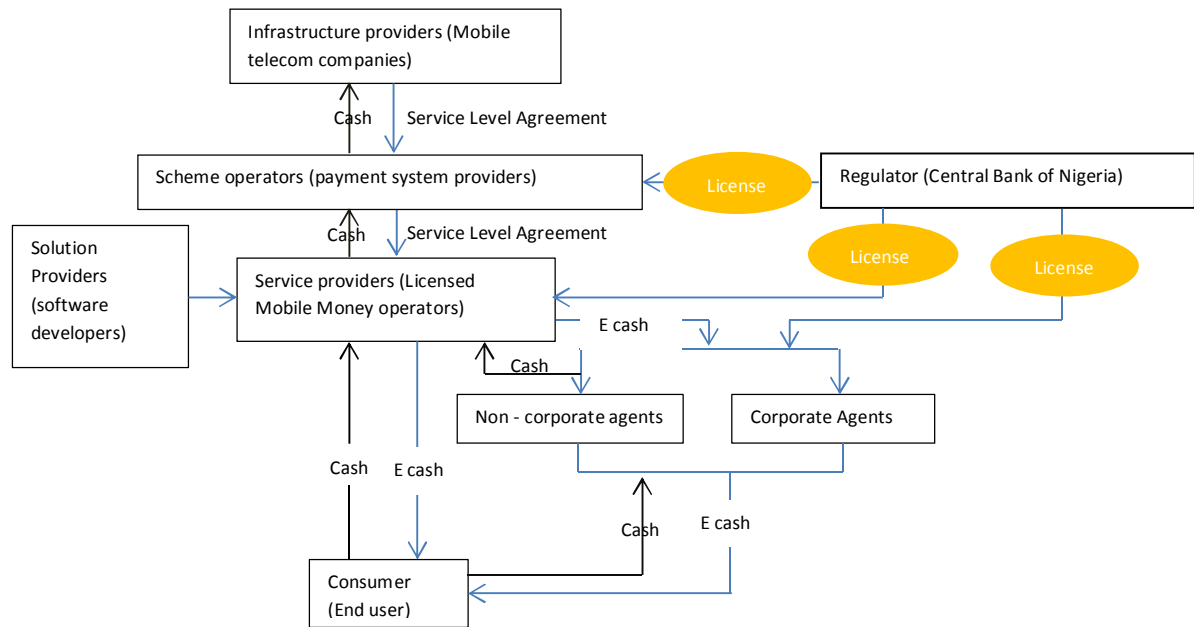


Figure 6. Stakeholder Coalitions with respect to mobile money in Nigeria

<sup>15</sup> See

<http://www.cenbank.org/OUT/CIRCULARS/BOD/2009/REGULATORY%20FRAMEWORK%20%20FOR%20MOBILE%20PAYMENTS%20SERVICE%20IN%20NIGERIA.PDF>

To analyze the Coalition using Michel Callon’s concept of translation, one would say that the CBN is the obligatory passage point as well as identify the problem and fashioned out the solution (Problemization). It is the CBN that recruit the actors indirectly by defining, who should be a stakeholder in the mobile money ecosystem (interessement). The CBN also defines the role of the stakeholder in the network (enrollment). They mobilize the actants to action and also serve as spokesperson to the network (Mobilization). The CBN insists that mobile money is a banking service and unlicensed non-banks are not permitted to operate the service. The licensed mobile money operators recruit agents to act on their behalf and they also deal with the agents. Quite unlike Ghana and Kenya, banks in Nigeria that wish to operate mobile money have to obtain a special mobile money license. Banks could serve as service providers or scheme providers.

The stakeholder management of the mobile money eco-systems is controlled by the CBN. At the identification and analysis phase, planning stage, Cost Benefit Analysis and Resource Allocation stage, the implementation and the monitoring stage CBN has absolute control. The other stakeholders only locate the opportunity within their space to operate. The service providers also have high influence in the diffusion of the network. The solution provider, Scheme operators, Agents and Subscribers are of high importance but low influence in the network. The infrastructure providers also have a moderately high importance but low influence in the network.

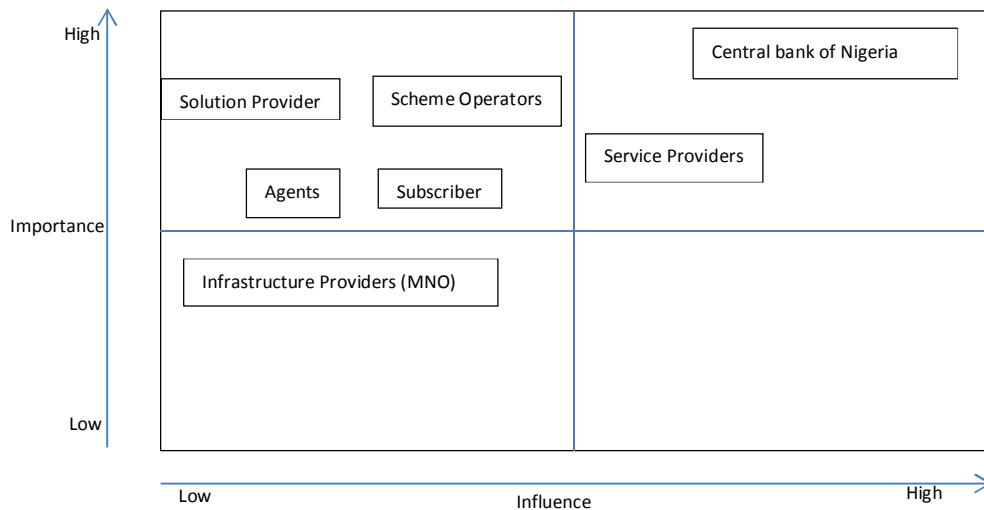


Figure 7 Importance Influence Matrix for mobile money in Nigeria

## 6. Conclusion

The diffusion of mobile money can take different twists and turns depending on the banking regulations that exist in a jurisdiction. One would say that in the Kenyan case, which via Mobile Network Operator led Mobile money service, Safaricom was able to convince the bank of Kenya, that they were not delivering a banking service. This gave Safaricom the opportunity to develop the network and be innovative in service delivery and pricing in order to extend the service to the rural poor. They were first to identify the usefulness of mobile

telephones in reaching the unbanked before the Government of Kenya would. This private sector initiative has led to tremendous growth in the delivery of mobile money in Kenya.

Ghana runs the Mobile Network Operator/ Bank led mobile money service. The case of Ghana is an interesting case as they Bank of Ghana decided to play a passive role and allow the mobile money market grows in a liberalized environment. There are other mobile money companies available in Ghana as a result of the attempt to encourage competition. It is difficult to describe Ghana's mobile money effort as a failure with respect to the Kenyan case. Ghana has a smaller population of 25 million citizens compared to Kenya's more than 40 million Citizens (Population Reference Bureau, 2012). This implies; if the diffusion of mobile money increases at a steady rate for both countries then Ghana may attain universal access of mobile money before Kenya.

Nigeria runs the Bank Led and the Non- Mobile Network Operator mobile money service. The case of Nigeria seems to be a unique case in which the future will tell, if stronger regulations will enable the efficient and safe diffusion and adoption of mobile money. Mobile money is relatively new to Nigeria. The only setback one may see for the Nigerian case compared to the Kenyan and Ghanaian case would be the cost the end-user has to bear once this state of the art regulation is in place.

These three cases provide unique perspectives to the role of regulatory frameworks to the implementation of mobile money in Africa. It also provides an insight into the organization of the stakeholders, how they form a coalition to develop the network and how the various stages of the projects are managed. There will be the need to extend the investigation of these issues to understand which approach could be termed 'best practice' and what lessons could be learnt from the various approaches to the deployment of mobile money. The delimitations to this paper were time and the inability to contact most of the stakeholders.

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