

Mobile Money Services in Nigeria: An inquiry of existing Models

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ABSTRACT

This paper explores existing models of mobile money services currently experimented around the world including Nigeria: The operator-centric model, the bank-centric model, the collaborative-model, the bank-lead model, the bank-focused model and the non-bank-led model. We find that these models have their full advantages and limits. Following an extensive study of each of the models vis-à-vis their adaptabilities, this study recommends a particular model for the Nigerian economy.

Keywords: *Mobile payment, Financial inclusion, Mobile banking.*

JEL CLASSIFICATION: E42, 033.

1.0 INTRODUCTION

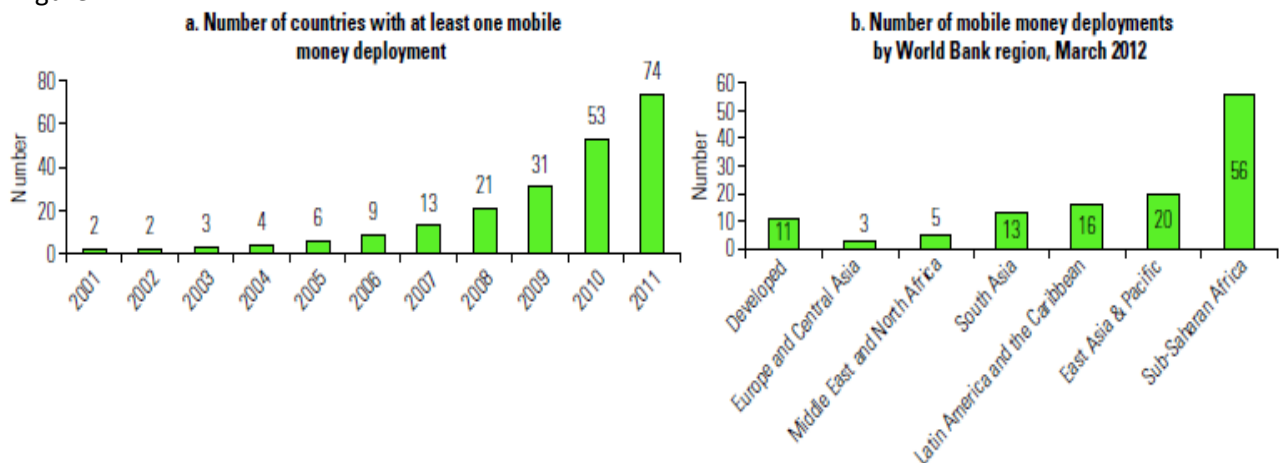
Poverty is more than just a lack of money. It involves a lack of access to the instruments and means through which the poor could improve their lives. Exclusion from the formal financial system has increasingly been identified as one of the barriers to a world without poverty. In many developing countries, more than half of households lack an account with a financial institution, while small firms frequently cite difficulty in accessing and affording financing as a key constraint on their growth. In a report jointly released by the Microfinance Information Exchange (MIX) and MasterCard Foundation, it was revealed that over 80 million Nigerians do not have access to financial services. This exclusion does not necessarily mean that the poor lack active financial lives: in fact, the fragility of their situation has led to the development of sophisticated informal financial instruments. However, the use of only informal instruments means that the poor are limited in their ability to save, repay debts, and manage risk responsibly. On a macroeconomic level, these financial constraints on the poor can exacerbate inequality (Demirgüç-Kunt, Beck, and Honahan 2008).

In another similar study by the Enhancing Financial Innovation & Access (EFInA) in 2012 (Access to Financial Services in Nigeria 2010), it was revealed that there was only a marginal increase in the number of those served by formal financial market from 35 percent in 2005 to 36.3 percent in 2010, five years after the launching of the microfinance policy. The survey showed that the main barriers why people do not have bank accounts include unsteady income distance to bank branches, etc. The central Bank of Nigeria (CBN) in 2012, also puts the ratio of bank branch to the total population at 24, 224 persons. Unfortunately, robust economic growth cannot be achieved without putting in place well-focused services that increase access of poor and low income earners to factors of production, especially credit. Financial inclusion is now a common objective for many central banks among the developing nations, particularly as it remains a major factor in driving economic growth they are committed to. In its desire to extending financial services to a wider segment of Nigerians, the CBN identified mobile telephony as a veritable tool for addressing financial inclusion). Since mobile phones have become widely acceptable and used in the country; The ubiquity of cell phone services offer the possibility of service in remote areas of a country where it would be otherwise economically unsustainable to provide banking services. These services could enhance financial inclusion especially when appropriate model(s) is/are well implemented and adopted. It is in this regard that this study looks into models of mobile money services and provides policy recommendation. The rest of the study proceed as follows; following the introduction above is stylized facts in section two. Theoretical issues and Review of literature is undertaken in section three, Section four discusses expected economic benefits of the services Models of mobile money services are examined in section five. While section six offers policy recommendation and concludes.

2.0 STYLIZED FACTS

The Mobile Money Transfer program, was jointly launched by the GSM Association (GSMA) and Western Union in October 2007, there are now more than 120 mobile money projects being undertaken in about 70 emerging markets. The rapid rise in the growth of mobile technology throughout the world is a phenomenon that has been particularly remarkable among poor people, largely because of the prepaid model. As a result, all classes of society now have access to financial services as people become increasingly familiar with a mobile-money system. In fact, mobile technology, viewed as a payment or banking channel, has the potential to allow two important questions to be addressed at the same time: on the demand side, it represents an opportunity for financial inclusion among a population that is underserved by traditional banking services. On the supply side, it opens up possibilities for financial institutions to deliver a great diversity of services at low cost to a large clientele of the poorest sections of society and people living in remote areas. (Beshouri et al, 2010). The lack of access to formal banking in the mass market in Africa has opened the door for mobile operators to build successful mobile payment services. The gap between banking penetration and mobile penetration means that while many people do not have access to financial services, they do have a mobile phone. Capitalizing on the phenomenal growth of mobile telecommunications in Africa, a number of service providers are already active in deploying mobile banking services to tap the demand from the large unbanked population. In November 2012, the United Nations Conference on Trade and Development (UNCTAD) disclosed that 40 million mobile money users currently exist in Africa. This figure will rise to 1.2 billion by 2015. According to the GSMA, as November 2012, the trade association for mobile operators, the number of mobile phone users has exceeded credit card users by 50% while the ratio of mobile phone users to automated teller machines (ATMs) users is 2,000 to 1. In addition, there is a sizeable migrant worker market in developing economies such as Africa, Asia and the Middle East, where low-income groups are seeking better working opportunities in developed nations. This creates a substantial need for systems to enable these workers to send money back home to their families. According to the World Bank, recorded remittances to developing countries were estimated at US\$240 billion in 2007 (double the value of 2002). This represented three-quarters of the world's total remittance inflows. India, China, Mexico and the Philippines were the top four remittance- recipient countries with a combined value of US\$95 billion. Mobile money transfer therefore extends remittance services to billions of the under banked population. Kenya is currently the dominant player in Africa's mobile payment markets with over 20 million subscribers. Uganda's mobile money market too has also expanded to an estimated 1.5 million users between three providers. Additionally, 37 per cent of South Africa's cell phone users also use mobile banking services. According to data from the GSM Association, most of the 100-plus deployments of mobile money systems have been in developing countries, with around half in Africa alone (see figure 1 below).

Figure1:



Source: GSMA Mobile Money Tracker 2012.

In a globalized world, where current migrations occur at a very large scale, remittances and remote payments are an important use of mobile money. Worldwide flows of remittances reached the amount of \$318 billion dollars in 2007. Latin America and the Caribbean (LAC) region remains the largest recipient of (recorded) remittances (Rhata, Mohapatra, Vijayalakshmi & Xu, 2007). According to the Inter-American Development Bank (IDB, 2008), LAC received remittances of USD\$ 65,000 million. Mexico is the leading receiver (24 million), while for countries like Guatemala, El Salvador, Honduras and Nicaragua, remittances account for more than 10% of its Gross Domestic Product (GDP). However, the majority of the populations in these countries do not have a bank account. For example in México the remittance recipient with bank account is 29%, in Guatemala 40%, in El

Salvador 31%, in Colombia 50% and in Peru 37% (IDB, 2008). The lack of access to formal banking in the mass market in Africa has opened the door for mobile operators to build successful mobile payment services. The gap between banking penetration and mobile penetration means that while many people do not have access to financial services, they do have a mobile phone. Capitalizing on the phenomenal growth of mobile telecommunications in Africa, a number of service providers are already active in deploying mobile banking services to tap the demand from the large unbanked population.

Mobile money applications offer a channel to expand traditional services and extend access to multiple segments including underserved or unserved groups. These applications address the very different banking needs for both the banked population in developed markets and the unbanked population in developing economies such as Asia, Africa and Latin America. In developed markets, the service is at the initial stage and is seen as a convenience that does not generate high revenues, but one on which to build value-added applications. In emerging markets, the large rural populations provide a perfect base to tap the unbanked group with no bank account but a mobile phone (GSMA 2012).

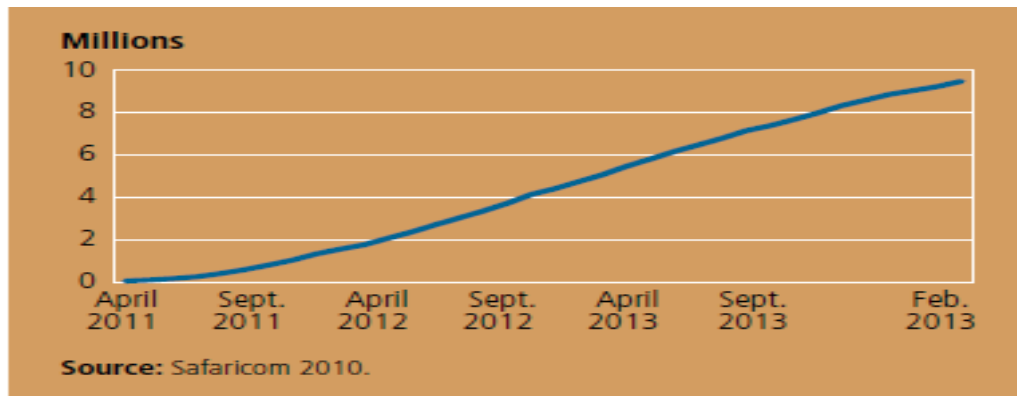
2.1 An Overview of Mobile Money Services in Africa:

The lack of access to formal banking in the mass market in Africa has opened the door for mobile operators to build successful mobile payment services. The gap between banking penetration and mobile penetration means that while many people do not have access to financial services, they do have a mobile phone. Capitalizing on the phenomenal growth of mobile telecommunications in Africa, a number of service providers are already active in deploying mobile banking services to tap the demand from the large unbanked population. There is strong evidence that these services can improve access to formal financial services in developing countries most especially in Africa where financial exclusion is rather high (GSMA 2011).

The story of the growth of mobile telephones in Africa is one of a tectonic and unexpected change in communications technology. From virtually unconnected in the 1990's, over 60 percent of Africans now have mobile phone coverage, and there are now over ten times as many mobile phones as landline phones in use (Aker and Mbiti, 2010). Even with the story of mobile phones' growth as a background, the growth of M-Pesa is startling. M-PESA ("M" for mobile, "pesa" is Swahili word for money) is a mobile phone-based money transfer service launched in 2007 in collaboration with Kenya's dominant mobile network operator, Safaricom. M-PESA was started and is owned by Vodafone, which is the majority shareholder of Safaricom. M-PESA has been highly successful and, along with two m-money companies in the Philippines, is the best example of a typical m-money service for the unbanked and underbanked. Initially launched in 2007 for person-to-person (P2P) transfers, by 2010, M-PESA had more than 9.4 million customers (figure 2) and more than 18,000 agents, and accounted for US\$5.27 billion in P2P transfers. There is scarcely a household in Kenya that is not an M-PESA user. Between 2009 and March 2010, more than 13 percent of the Kenyan gross domestic product (GDP) was transferred through M-PESA. The service allows users to deposit money into an account stored on their cell phones, to send balances using SMS technology to other users (including sellers of goods and services), and to redeem deposits for regular money. Charges, deducted from users' accounts, are levied when e-float is sent, and when cash is withdrawn. As a money transfer service, M-PESA started by serving the needs of the many families split between rural and urban areas. It has since grown to provide many other financial services.

Following on from the success in Kenya, Vodafone has replicated the M-PESA solution in Tanzania through its partnership with Vodacom. South Africa In 2005, South African based MTN — the largest mobile operator in Africa — teamed up with Standard Bank — the largest banking group in Africa — to form MTN Banking which at the time was one of the first truly mobile banks globally. The rationale behind this joint venture was to bring a large number of the previously unbanked population into the formal banking sector in a low cost and easily accessible way. Launched in December 2004, Wizzit, a startup mobile banking provider in South Africa, is targeting rural low-income consumers. Wizzit offers a low-cost transactional bank account to unbanked and underbanked people to make person-to-person payments, transfers and prepaid purchases, independent of mobile operators. In November 2007, the International Finance Corporation, a member of the World Bank, acquired 10% of Wizzit as part of its efforts to extend banking services to the poor. African telecom company Zain is also attempting to create a borderless mobile banking network across Africa. It has launched its mobile banking product, Zap in Kenya, Tanzania and Uganda, with plans to roll out services to all of its African operations. Partnering with leading international and regional banks including Citigroup and Standard Chartered, Zap will be included as part of Zain's cross-border One Network service. Its recent alliance with the money transfer giant Western Union to link its platform to the Western Union's global agent network has further strengthened the initiative, allowing customers to receive cash in their mobile accounts or at a Western Union agent location.

Figure2:



Number of Current and Projected M-Pesa Subscribers.

3.0 THEORETICAL ISSUES AND REVIEW OF LITERATURE

The definition of “mobile money” varies across the industry as it covers a wide scope of overlapping applications. In general, mobile money is a term describing the services that allow electronic money transactions over a mobile phone. It is also referred to as mobile financial services, mobile wallet and mobile payment.(Ernst & young 2009).

A wide range of mobile money applications have developed over time;. Some of which are;

1. **Mobile banking** — use of a mobile phone to remotely access a bank account, primarily for account balance checkup and bill payment services
2. **Mobile money transfer (remittance)** — a peer-to-peer application making use of a mobile phone to send money to family or friends, primarily across international borders
3. **Mobile commerce (payment)**— use of a mobile phone to perform financial transactions for purchases or sales, either remotely or on-site, retrieve promotion information or coupons, and deliver gift items.

Kim *et al.*, 2009; Tiwari and Buse, 2000 Luo, Li, Zhang and Shin 2010, defined mobile banking as an innovative method for accessing banking services via a channel whereby the customer interacts with a bank using a mobile device (e.g. mobile phone or personal digital assistant (PDA)). Mobile Commerce (m-commerce) is defined as a business transaction conducted through mobile communication networks or the Internet (Siau and Shen, 2003). M-commerce can offer value to consumers by providing convenience and flexibility through time and place independence (Kim, Shin and Lee, 2009; Venkatesh, Morris, David and Davis, 2003).

Mobile banking is an application of m-commerce which enables customers to access bank accounts through mobile devices to conduct and complete bank-related transactions such as balancing cheques, checking account status, transferring money and selling stocks

Since Solow’s (1956) seminal contribution to the theory of economic growth, and that of, Romer 1986 and Lucas, 1988, economists have understood that higher rates of adoption of modern technologies may accelerate the development process. There are a significant numbers of studies which have demonstrated the relevance of mobile telephony in economic and social development in developing countries. Among these studies, there are those which seek to identify how mobiles may contribute to economic growth as well as to poverty reduction. At the macroeconomic level, Thompson & Garbez (2007) identify a positive impact of mobiles on productive efficiency in developing countries while Waverman, Meschi, & Fuss (2005) find that the mobile dividend in developing countries is higher than in developed countries given that it is largely the only source of communication.

Robert Jensen’s study on the fisheries market is perhaps one of the most influential papers that, from a microeconomic perspective, analyses the impact of ICT on welfare. Through a weekly survey applied in three districts in Kerala during six years, Jensen finds a significant positive impact of information in these poorly developed markets. He finds that the addition of mobile phones reduced price dispersion, waste and increased fishermen’s profits and consumer welfare. These findings offer evidence that counters the criticism ICT should not be a priority for poor countries that lack access to health and education. (Jensen, 2007 p. 919). Recently, there has been a number of surveys that explore if and how mobile phones are helpful to diminish poverty by identifying the patterns of use by poor income groups in developing countries. (Donner, 2007; Horst & Miller,

2006; Vodafone, 2005; Ovum, 2006; Bhatia, Bhavani, Chiu, Inakiram, Silarsky, 2008). The application of surveys by Horst & Miller (2004) in Jamaica and Paragas, (2005) in the Philippines show that Diasporas use mobile phones to communicate with family for both economic and social reasons. Donner finds that mobile ownership increases the income of micro entrepreneurs in Rwanda by increasing communication and enriching social networks. In this same area, Molony (2006) finds that mobile phones are used by micro entrepreneurs in Tanzania to manage reputation while creating virtual offices.

Aker and Mbiti (2010) research first examines the evolution of mobile phone coverage and adoption in SSA over the past decade. They identify the main channels through which mobile phones affect economic outcomes and appraise current evidence of its potential to improve economic development; According to the authors, Mobile telephony has brought new possibilities to the continent. Across urban-rural and rich-poor divides, mobile phones connect individuals to individuals, information, markets, and services. These effects can be particularly dramatic in rural SSA, where in many places mobile phones have represented the first modern telecommunications infrastructure of any kind. Mobile phones have greatly reduced communication costs, thereby allowing individuals and firms to send and to obtain information quickly and cheaply on a variety of economic, social, and political topics. An emerging body of research demonstrates that the reduction in communication costs associated with mobile phones has tangible economic benefits, improving agricultural and labor market efficiency and producer and consumer welfare in specific circumstances and countries. Hartsenko (2004) makes a cross-country comparison of the use of the different payment instruments (such as Mobile phone, Phone bank, Internet bank, Bank card, among others) in the Baltic countries. The author applied regression analysis to identify the effects of individual characteristics on people's using specific electronic payment instruments and analyzed the impact of consumer characteristics on the use of payment instruments in Estonia. The results show a strong effect of demographics characteristics (age, sex, education, occupation living place, and personal income) on consumers' use of payment instruments.

Ivatury and Mas (2008) provide additional evidence about the early uses of mobile phones as financial service platforms. Cost reduction, which can be passed on to the user, is a major benefit. In the Philippines, "a typical transaction through a bank branch costs the bank US\$2.50; this would cost only US\$0.50 if it were automated by using a mobile phone."

In Pakistan, Tameer Bank estimated that opening a bank Branch in a Karachi slum would cost thirty times what a retail agent would cost, and monthly operating costs would be US\$28,000, compared with US\$300 for an agent. Despite the lower costs and higher availability, the authors estimate that "less than 10 percent of all branchless Banking customers are poor, and new to banking, and are using channels *For financial services*" other than paying bills, purchasing airtime, or receiving government payouts. Most usage is for payments, as opposed to savings or credit, and the authors argue this is due to a combination of advertisements and perceptions that are both biased towards payments.

4.0 EXPECTED BENEFITS OF MOBILE MONEY SERVICES

Nigeria's financial system may be up for greater contribution to the nation's overall development as the mobile money platform shows brighter prospects. Nigeria may indeed be positioning herself to become the largest mobile payment market in sub-Saharan Africa (EFInA 2012). FINANCIAL transactions by Nigerians through the mobile money platform as at December 2012 in the country currently stand at N228 million. Besides, verified mobile money agents currently stand at 3000 and are expected to increase to 50,000 by 2015 (Ministry of Communications Technology, Nigeria) total value of mobile money transactions have hit N228 million and is expected to increase to N151 billion by 2015. M-payment through mobile phones, has been identified as a viable tool to provide basic financial services to millions of unbanked populations in urban and rural communities in Nigeria, and will become a booming industry. Indeed, financial inclusion has been identified as a plank to lift a large fraction of the unbanked population globally out of poverty and hunger and bring them into the financial system.

Mobile Money will create a cheaper and more accessible electronic payment ecosystem that will broaden and deepen the financial sector. More importantly, an effective agent network will ensure that more people are financially included by increasing the number of access points for transactions, and reducing the cost of transacting, especially in the rural areas. A critical success factor for the uptake of Mobile Money is the proliferation of ubiquitous agents in as many communities as possible, so that consumers can transact safely and easily, close by to their home or place of work. More so, several benefits accrue with the combination of mobile phones and financial services: it enhances commerce; it allows for microfinance, it allows ease of remittances, it offers security that cash does not and, possibly, it could serve as a replacement for debit and credit cards. It will provide banking services for the unbanked. Commerce is enhanced because it becomes much

easier to pay for goods and services by the use of the mobile phone. There is no need to go to a bank to withdraw money, it is in the phone.

The benefits of Mobile Money Services are legion; Apart from financial inclusion and enhancing of e-commerce other expected benefits include jobs creation, financial empowerment; increase in the income of rural dwellers, absence of CoT(Cost of Transaction).In fact, by bypassing banks and other financial institutions that charge fees on money transfers and the truncation or voiding of the long distances usually traveled to deliver money, the system could save money that could be channeled to other ventures. Mobile money services are also able to raise the tempo of business activities and move cash on to the hands of people who can use it quickly, cheaply and efficiently.

Mobile Money Operators (MNOS) therefore, have a huge responsibility for expanding financial services in Nigeria. There is the need to make use of technology which will enable us leapfrog development; taking banking services to communities where it would not have been economically feasible in the past using traditional bricks and mortar. The Central Bank of Nigeria (CBN) is extremely proactive and has put in place the levers of success required for the MMOs to succeed in their endeavors.

5.0 MODELS OF MOBILE MONEY SERVICES

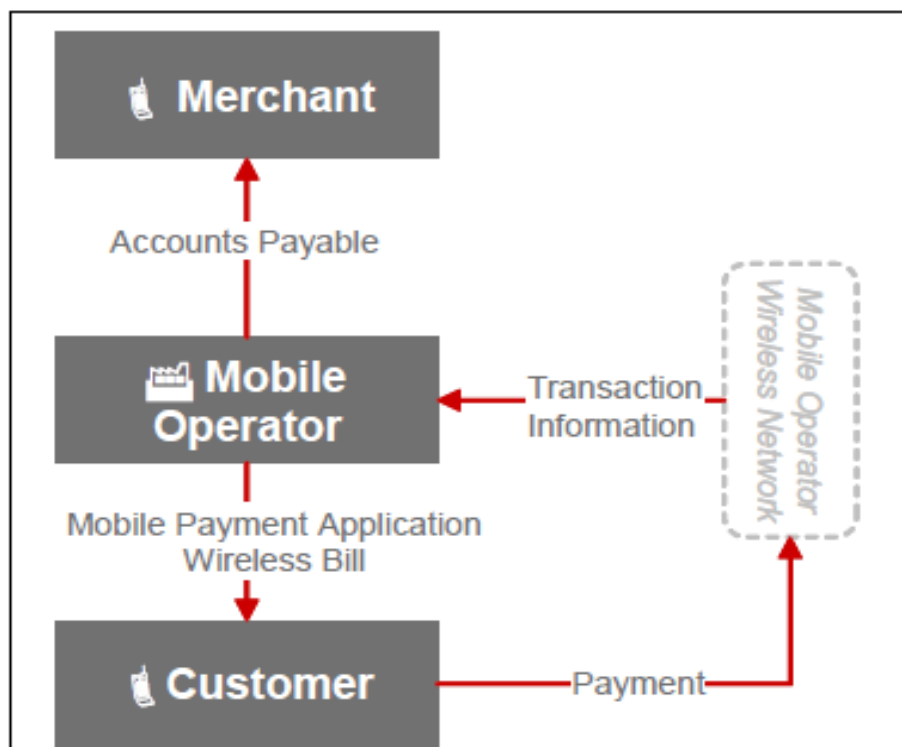
Many potential models have been described for mobile money applications. Among the most common ones are operator-centric and bank-driven models, given the fact that these industries have control over a mass customer base (Ernst and Young 2009). The mobile money ecosystem develops in different ways in each country, and between different service providers and mobile network operators, as technology advances.

Operator-Centric Model:

In this model, the mobile network operator (MNO) offers the technology, operates the transactions and compensates the system. The MNO will reap the benefits of its Customer base and already established billing relationships. Mobile network operators will also benefit from additional service fees as well as increased value-added services to the consumer who would be able to conduct quick, convenient payment transactions.

This benefit may lead to improved customer loyalty, increased revenues and a potential reduction in customer turnover. However, strong partnerships with merchants are essential for this mode to operate successfully. The operator-centric model has played an important role in bringing M-payments to its current stage. NTT DoCoMo (Japan), Mobipay (Spain) and Mobikom (Austria) are some of the international examples of operator-centric models. Figure 3 below illustrates how operator-centric model works.

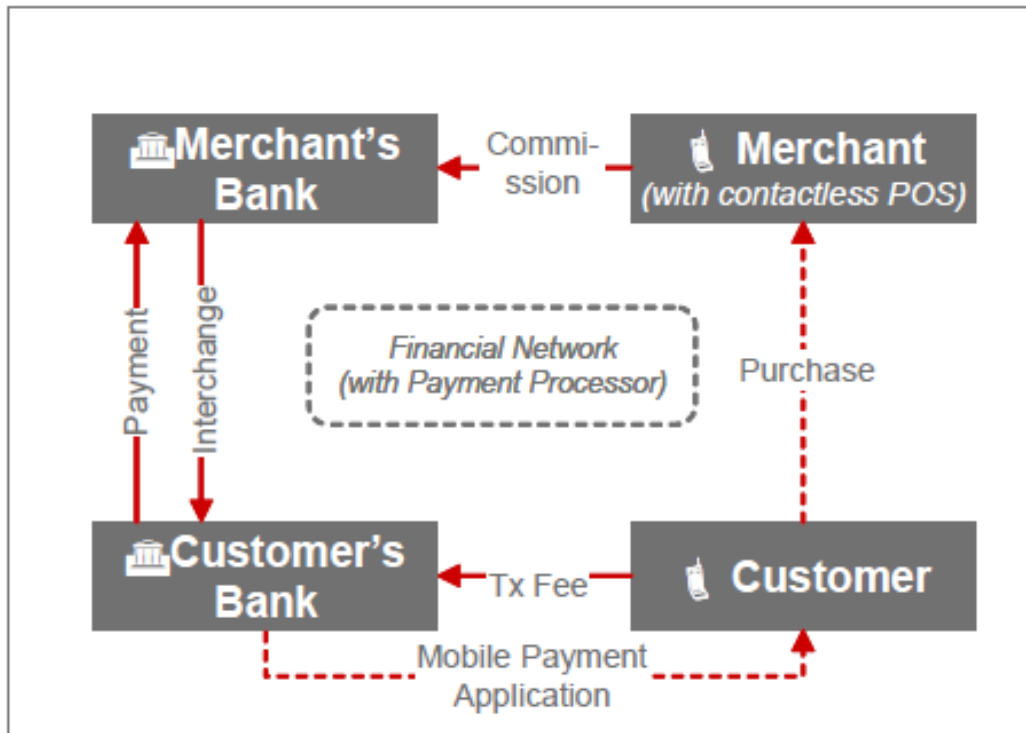
Figure: 3



Source: Smart Card Alliance, 2008

Bank-Centric Model:

The bank-centric model can be considered an evolution of the credit-card model. Customers continue the same relationship with their bank, which provide them with the same services in a more convenient way, i.e. by using their mobile phone. A bank-driven model implies that one or more banks establish a mobile payments service based on already existing payment processes. Payments will be processed over mobile networks (remote payments for example via SMS for electronic goods or directly at the PoS (e.g. via Near Field Communication). Besides the need to encourage their customers – mainly consumers and merchants – to utilise the service, banks will further have to partner with mobile operators and agree on an attractive revenue-sharing system. Figure 4 below illustrates bank-centric model;

Figure 4:

Source: Smart Card Alliance, 2008

There are some bank-centric models evolving on a global level as well, like ClearXChange and Cash Edge. ClearXChange, a joint venture of Wells Fargo, Bank of America and JPMorgan Chase, is a stepping stone to achieve bank dominance in the M-payments value chain.

Collaboration Model:

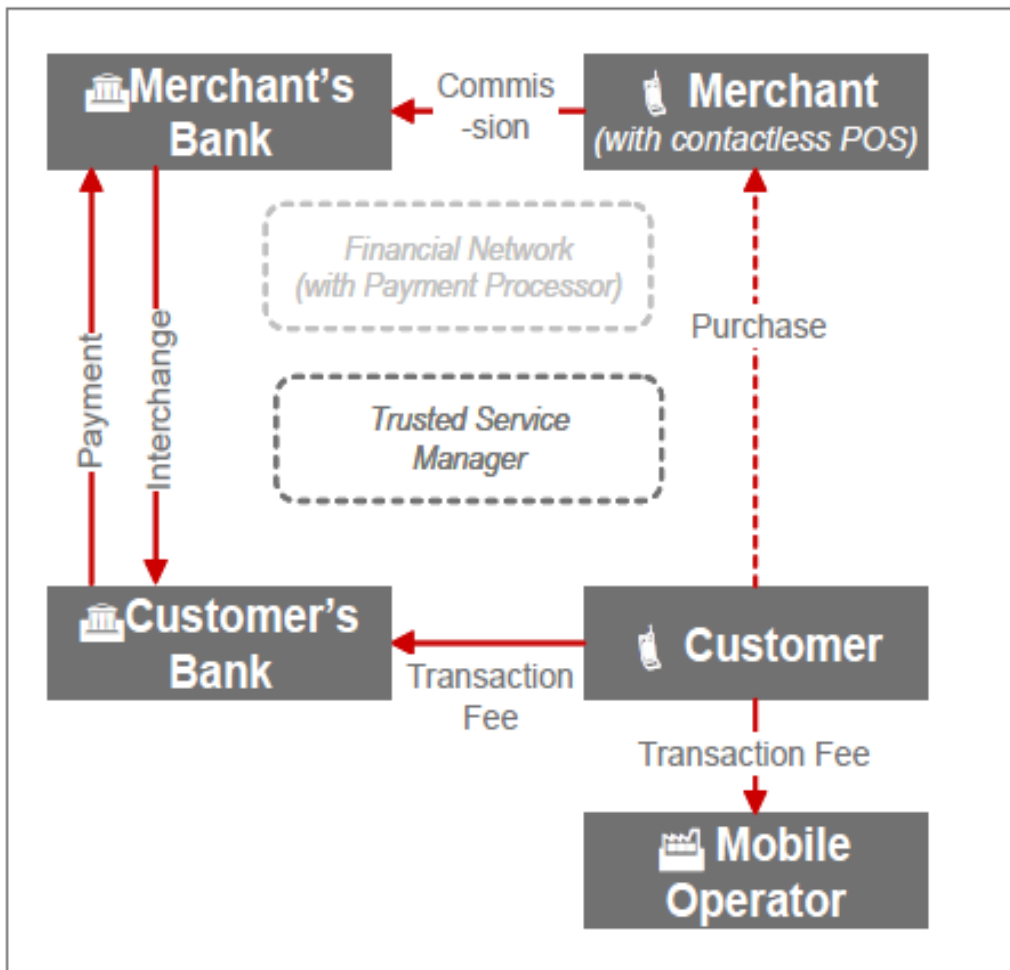
The Collaboration Model involves collaboration among banks, mobile operators and other stake-holders in the mobile payments value chain, including a potential new stakeholder -- a trusted third party to manage the deployment of mobile applications. This model includes two possible scenarios:

Scenario 1: A mobile operator partners with one bank to offer a bank-specific mobile payments service.

Scenario 2: Industry associations representing mobile operators and financial institutions negotiate and set standards for applications that reside on secure elements in mobile de-vices, allowing multiple card types from different banks to be used.

In both cases; Near Field Communication-enabled mobile devices and compatible POS devices are deployed that meet the standards set by the partner bank or industry associations. Potential sources of revenue include merchant commissions, merchant and consumer trans-action fees, new customer acquisition fees, and marketing fees. The amount paid and collected by each stakeholder is the source of considerable contention. Generally it is expected that merchant fees are split between banks, mobile operators, and perhaps third-party trusted service managers (TSMs). Comparable models exist in the credit card industry for customer acquisition and marketing fees between partners. Figure 5 below is an illustration of collaboration model;

Figure6:



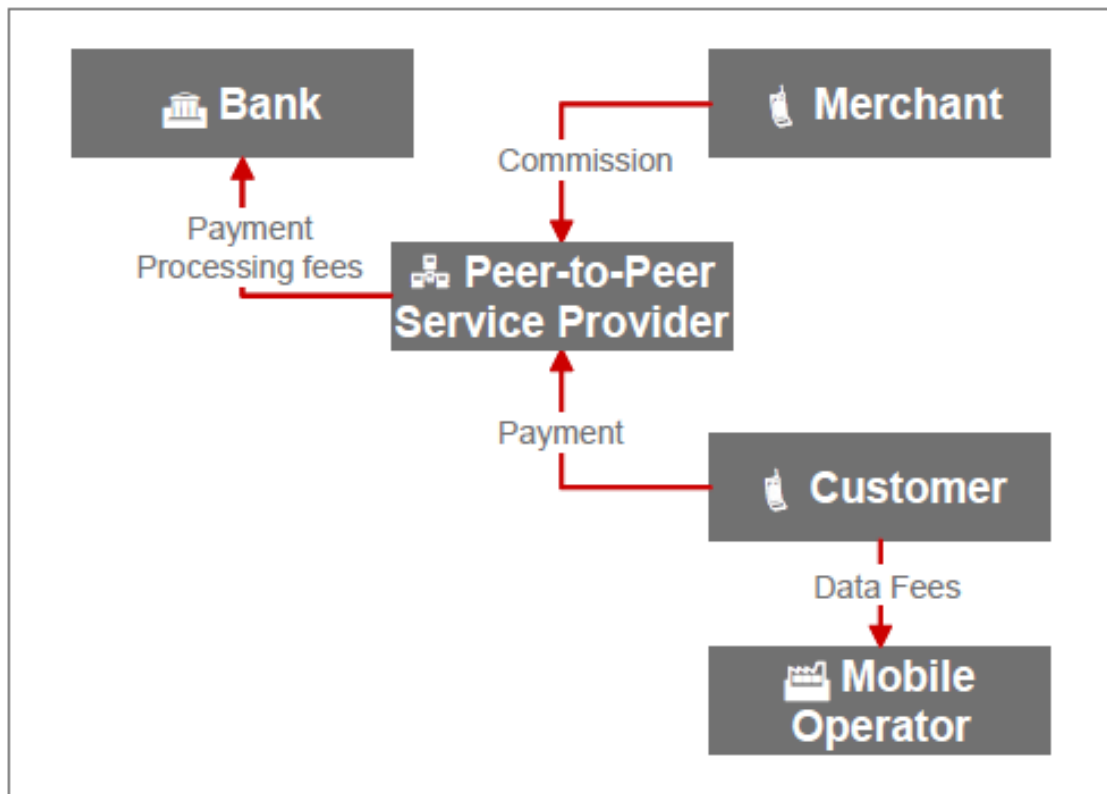
Source: Smart Card Alliance, 2008

There are no concrete examples of real-world commercial rollouts of the Collaboration Model, and the technology is still in the trial phase in most parts of the world. Although the Collaboration Model is ideal because it allows each stakeholder to focus on their core competencies, the model has the most complex implementation as it requires agreement on revenue-sharing models.

Peer-to-Peer Model:

The Peer-to-Peer Model is an innovation created by payments industry newcomers who are trying to find ways to process payments without using existing wire transfer and bank card processing networks. The ability to send money from one person to another, even across great distances, has existed for many years through providers such as Western Union. While the Internet has made this service even more convenient, the high fees associated with the transfers can make them cost prohibitive and not for every-day use. Internet bill payment services provided by most banks have made remote payments to merchants convenient, but cannot be used for real-time purchases. Mobile phones with peer-to-peer capabilities overcome these obstacles. This model is significantly different from the other models discussed in this study. Bank-Centric, Operator-Centric, and Collaboration Models are methods for bringing contactless payments and mobile loyalty to the marketplace. The Peer-to-Peer Model is a way to use the mobile phone to eliminate the existing payments ecosystem that consists of POS terminals, the ISOs and acquirers that deploy them, and the processors and payment networks that route and settle the transactions. While numerous peer-to-peer mobile payments implementations have been announced in India and Asia/Pacific, the two main deployments in the U.S. are PayPal Mobile and Obopay. Figure 7 below illustrates peer-to-peer model;

Figure 7



Source: Smart Card Alliance, 2008

Models of Mobile Money Services in Nigeria:

The Nigerian mobile payments market is still in its infancy and the facts, statistics and predictions are still attempting to pinpoint when mobile payments will be the subject of mass adoption. For instance, few out of licensed mobile money operators as at November 2012, had commenced operations among them are; GTBank (in strategic partnership with MTN NIGERIA and FORTIS), United Bank of Africa (UBA), FirstBank PLC, Pagatech etc. (CBN 2012). As a result, the mobile payments landscape is continuing to evolve with various business models. This section highlights models that major stakeholders have provided. The business models have been categorised according to the critical roles played by the participants under different scenarios. These include; who is legally responsible for the deposits, who bears the reputational risk (i.e. whose brand is more exposed to the public), whether deposits can be accessed through agents or only through bank branches, and who carries out the payment instruction. The Nigerian models are discussed below;

Bank-Focused Model:

In this model, a bank delivers banking services to customers using the mobile phone as a delivery channel. This model can only be deployed by a licensed deposit-taking financial institution. The Lead initiators are licensed deposit taking financial institutions such as DMBs, microfinance banks and discount houses. Participants include Initiating banks, its ICT partners and customers. Based on this model, the Lead Initiator shall adhere to put in place adequate measures to mitigate all risks that could arise from the deployment and use its mobile payment solution.

Bank-Led Model:

This model allows a bank, or a consortium of banks, partnering with other organizations, jointly seeking to deliver banking services by leveraging on the mobile banking system. The model is only applicable to a scenario where there exists collaboration between a licensed deposit-money bank(s) and an organization duly verified by the partner bank(s).

The Lead Initiator in this model is a bank or consortium of banks and its partners with other organizations. The roles and responsibilities of the participating organizations are restricted to their area of core competence e.g provision and management of the necessary technology requirement as well as agent network management and provision.

Non-Bank -Led Model:

This model allows a corporate organization that has been duly approved by CBN to deliver mobile payment services to consumers. This model is only applicable to any organization other than a licensed deposit money bank and telecommunication companies. The Lead initiator in this model shall be organization other than a DMB or Telco e.g Switches and payment service providers. The roles and responsibilities are; they shall register with CBN as a payment service provider, ensure its network is in full compliance with the regulatory Framework, provides the CBN with open access for on the spot monitoring, provides a quarterly assessment report on the performance of the organization. Table 1 below summarizes the Nigerian model of mobile services;

Table1:

Nigeria Regulatory Framework: Models & Services

Bank-Focused (Banks Only)	Bank-Led (Consortium)	Non-Bank-Led
Participants		
Initiating Bank	Initiating Bank/s	Corporate Organisation
ICT Partner/s	Partner Organisations	Partner/s
	Scheme Operator/s	
	MNOs	
	Independent Operator/s	
Mobile Payment Scenarios		
Bank Account-Based	Card Account-Based	System-Based (SVA)
Services		
Provide all m-Payment services	Provide all financial services	Provide and manage technology
Facilitate International Remittances	Provide and manage technology	Provide Agent Network
	Provide Agent Network	Facilitate International Remittances
	Facilitate International Remittances	

Source: Nigeria Communication Commission 2012.

Models Assessment:

There is no single model that fits all markets. The types of model adopted depends on a wide range of external factors, including the market composition, openness of regulatory regimes, maturity of related industry sectors, market dominance of the participants and potential cooperation within the value chain. Given the specific environment of each models discussed above, it becomes rather impossible to use a single scale to rank efficiency of these models. However there seem some semblances between models of mobile money services in developed economies and that of Nigeria. For instance, Non-Bank -Led model share some features of Operator-Centric Model. Bank-Led Model and Bank-Focused-Model on the other hand share some features with both Bank-centric and Collaborative Models. Operators’ centric models probably provide the good solution with an environment poorly endowed in financial intermediation devices. In this case, the mobile operator can create the missing link between users and improve the efficiency of the currency system of intermediation. This model has tendency to generate network externalities.

The bank-centric model is apparently suitable to the environments characterized by a full system of financial intermediation; it appears as a way to create efficient monetary links between users without any technological limitations. Mobile payments backed on a bank centric model require nothing else than mobile phones or smart phones which are much diffused in the developed countries where this solution could be adapted. Again, this solution probably requires legal adjustments to adapt banks to new responsibilities. This model has fewer propensities to generate network externalities. This form of m -payment system seems to answer rather well to the needs of companies, the professional users and high revenue consumers.

6.0 POLICY ISSUES

Several macroeconomic policy issues arise from mobile money; among these are the threat to the traditional banking system and its implications on the economy. The threat to the banking system could be either a positive or negative. If the banking system has enough political power, it could delay or usurp the mobile money system, resulting in slower service, restriction on the functions, etc. even though the banks would be headquartered in the urban areas. On the other hand, if the mobile players are strong enough or the banks do not have political clout, mobile money could provide much needed competition to this sector. It could reduce the inappropriate charges for remittances; reduce debit and credit card fees to POS retailers, etc. The introduction of this competition would be a powerful force for growth. Thus, for growth and development, regulations should be light-handed; certainly no more odious than what is applied to the banking system in the country.

E-payments via mobile money service can serve the underserved, with secure financial services. The key issues will be the distribution and low prices/transaction costs. Small transactions must be able to be completed inexpensively. The advantages of mobile money are the efficacy of the payments system namely, all the advantages of money as a store of value and means of exchange but with less reliance on cash, which can be very beneficial when security is an issue. Remittances – both internal and international will be key in most developing countries especially in Nigeria, because of the emigrant workforce, either urban migrants to the city sending money back to their families in rural areas or international migrants sending money back to their families in their home country.

Improved communications with mobile phones can aid in economic growth and development, but developing financial services via the mobile phone at affordable rates to the Base of the Pyramid (BoP) can amplify these impacts. Income, employment and individuals can benefit from this hybrid. It represents a huge, growing, and untapped market. If handled correctly it can be a sea change in emerging markets like Nigeria. Moreover, it has the potential to enhance competition in the banking sector. We predict in this study that a huge market will fuel and accelerate the anticipated explosive growth of m-money services in Nigeria based on communications services in emerging markets worldwide.

Just as mobile network operators (MNOs) in Nigeria constrain competition by preventing their handsets from operating on other networks, mobile money providers have little or no incentive to have interoperability among their payments system. It maintains the service provider's market dominance and constrains e-commerce. Inter-country transactions are even more adversely affected. These issues, *inter alia*, must be addressed. The issues of security are also critical. How are lost, broken or stolen phones handled? How can the phone be secured to ensure that a stolen phone is not depleted of its funds? Is password protection sufficient? How can the phone be secured from others "hacking" into it and depleting the account? These are serious questions that must be addressed.

Mobile Money is key to furthering the financial inclusion agenda in Nigeria, as it enables the delivery of financial services at a lower cost to a wide range of income segments of the society". Referring to the EFINA Access to Financial Services in Nigeria 2010 survey; "Of the 49.2 million adults who own a mobile phone, 25.3 million are unbanked, which demonstrates the potential for using mobile phones as a distribution channel for providing financial inclusion. Mobile Money can be lucrative in the mid to long term, if properly executed. Nigeria's financial system may be up for greater contribution to the nation's overall development as the mobile money platform shows brighter prospects. The Central Bank of Nigeria has therefore opted for the creation of an enabling regulatory environment as a policy path towards achieving availability, acceptance and usage of mobile payments services in Nigeria. The overriding vision is to achieve a nationally utilized and internationally recognized payments system.

Conclusion and Recommendation:

The objective of this paper is to explore the economic models corresponding to different mobile-payment systems in Nigeria. We have presented these models, ranging from models used in developed economies to those models put in place in Nigeria. We have considered their distinctive components as well as what they share in common. After an extensive study of the models we discovered that the operator-centric model is probably more suited to an economy that is cash-based: it is adapted to small but distant transactions for which it decreases the costs and the risk of transfer. This model can possibly compensate in an emerging country or in an isolated area with low density of bank branches by a new form of financial intermediation without financial agent. But the fact is that Nigeria has no operator-centric model as at the moment, what resembles this model in the Nigerian context is the Non-Bank Led Model of mobile services. In addition to this, the number of young and adult mobile phone users far exceeds that of bank account holders we therefore recommend in this study that at the moment the most suitable model for Nigeria is the Non-Bank Led model.

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