

# Trends in Electronic Money Transfer in Kenya

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## ABSTRACT

The paper looks at trends in Electronic money transfer in Kenya, based on literature survey of prior research done in this area. The Central Bank of Kenya was a key source of data because of its significance in financial transactions and regulations. Others were financial institutions, banks, Posta corporations, and telecommunication companies. Websites of particular organization such as Safaricom and Posta were visited to collect data. Information on mobile trend in USA, Europe and India was reviewed. The information so gathered was analyzed for trends. The authors infer that since 1990's there has been an increased use of electronics money transfer in Kenya. The clearing house has been automated; the Central bank of Kenya has enforced a rule that requires banks to transfer funds over one million Kenya shilling via electronics means. All banks have automated teller machines, while telecommunication companies are involved mobile money transfer. This has resulted in a trend mobile money transfer is increasing been used.

**Keywords:** *Electronic money transfers, Automated teller machine, mobile money transfer, payment system*

## 1. INTRODUCTION

A set of instruments, procedures and rules are required for the transfer of funds among system participants. These constitute a payment system, whose purpose is to enable the financial obligation to be satisfied: reliably, securely, efficiently, effectively and accessibly. The Central banks in most countries of play a regulatory role [1].

One of the primary responsibilities of the Central Bank of Kenya (CBK) is to promote the smooth operation of money transfer in the country. The CBK, a part from having laws to govern the financial institutions, has drafted a law to regulate electronic retail transfers. [2]. The purpose of the draft Regulation is: to define retail transfers, facilitate the provision of electronic payment systems and provide standards for consumer protection and risk management.

Transferring of funds via electronics means also requires the retailer to have obtained an appropriate license under the Kenya Communications Act and remains in compliance within the said Act and license conditions. The major institution that provide money transfer services are commercial banks, non bank financial institutions, building societies, Cooperative societies and telecommunication companies. The paper discusses various means of electronics money transfer .Lists the charges for the various products on offer, the magnitude of transactions and the number of users of the various modes of transfer. The methodology adopted is literature survey from research that has been done previously conducted and papers presented in conferences. Data was also collected from the CBK and from web sites of the POSTA and Safaricom. Analysis of these data led the authors to infer trends in electronics money transfer.

## 2. NATIONAL PAYMENT SYSTEMS (NPS)

NPS is the infrastructure that provides the economy with highways for processing payments that result from various economic activities. A framework of

NPS is shown Figure 1. Any payment begins with a deal agreement, which is converted to payment instructions. The instructions are used to initiate the payment process which, from the framework passes through some form of clearing house and settlement. Finally the payment is made. Confirmation that the payment has been made and deal executed as agreed on follows. The paper is concerned with the electronics process starting with payment instructions to payment confirmation using electronics means.

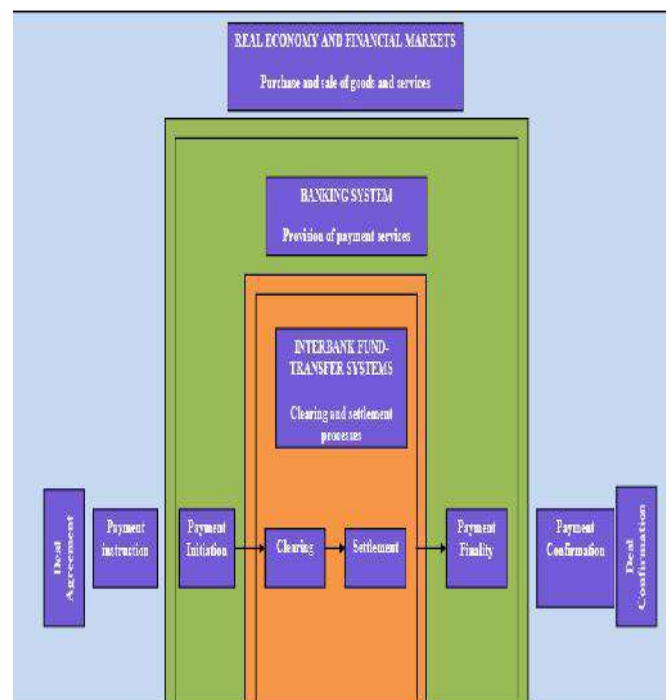


Fig 1: NPS framework Source Central bank Of Kenya (2010)

### 2.1 Risks for Payment systems.

Payment systems all have risks but attempt to use electronic fund transfer involves some risks such as:

- Legal: the risk of loss because the laws do not support the rules of the systems and contracts cannot be enforced.

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- Credit: the risks that counter party fails to honors an obligation in full.
- Liquid: the risk that the counter party will not settle the obligation when due, but will settle at unspecified time later.
- Operational: the risk that human error or malicious attack or deficiencies in the IT network could result in losses
- Systemic: the risk that failure by one participant to meet their obligations causes a domino effect in the financial systems.
- Reputation: the failure of payment system to efficiently and reliable meet its requirement result in loss of trust on the system by customers and counterparties (1).

The authors opine that while these risks have existed in the traditional payment systems they are more critical in electronic fund transfer. For instance there has been cases of fraud using electronic systems such as unauthorized withdraw from Automated teller

Machines (ATM). In such cases banks are not willing to take responsibilities and the client suffers financial loss. M-PESA agents have been tricked by people sending fictitious deposit, coning the M-PESA agents to giving them money. There is need to look at all the risks involved and devise means to militate against them.

## 2.2 Kenya's NPS Reform approach

Before 1990 the payment system did not form part of core functions of the CBK, however, this did change with commencement of joint CBK/stakeholders collaboration in 1994. By 1999 there was an adoption of problem solution approach. Adoption of strategic approach in the period 1999/2000 made CBK recognize the weaknesses embedded in the Kenya's fast growing payment systems, and that the problem-to-problem solution approach was ad hoc and short term. The Strategic approach takes a holistic view of the situation by including all the relevant issues in the strategic thinking process and the solution that is produced encompasses the required changes to every relevant aspect of the system as a whole [1].

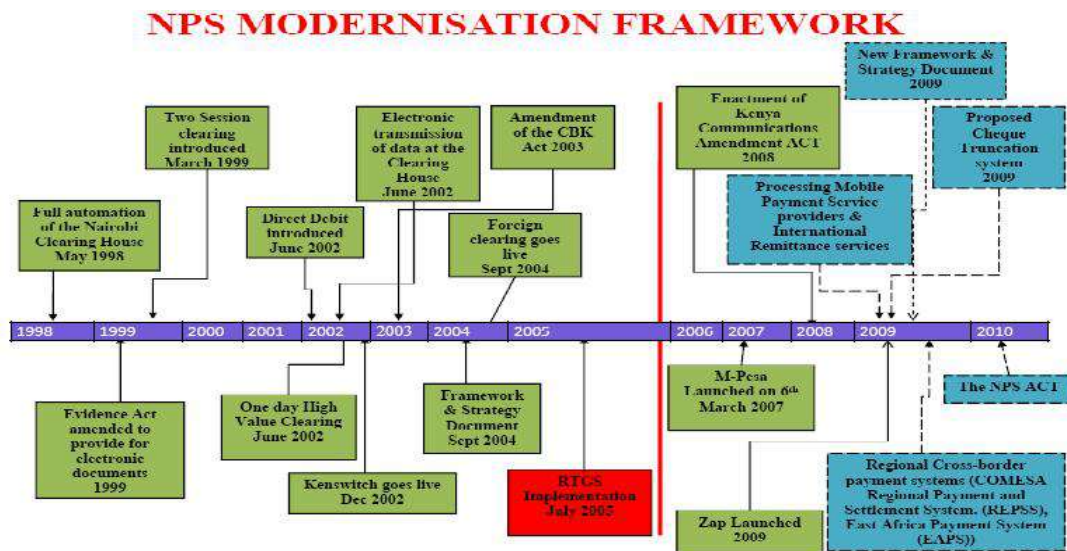


Fig 2: Reform Approach Source Central Bank of Kenya 2009

Figure 2 shows the proposed framework as per 2009. The areas in blue had not been implemented by then; however in 2011, this had been done. From the figure, there has been a trend of using electronics means to transfer funds, among the banks and financial houses. But from 2007 there was the entrance of mobile fund transfer spearheaded by Safaricom – M-PESA. Safaricom, a telecommunication company added money transfer to its core function. Airtel formerly launched its Zap money transfer in 2009, while Essar telecom and Orange telecom, launched their YU-cash and Orange money services respectively, in the year 2010[2].

## 2.3 Types of Payment System in Kenya

The two main classifications are large value and retail payment systems [1]. The former is done by the

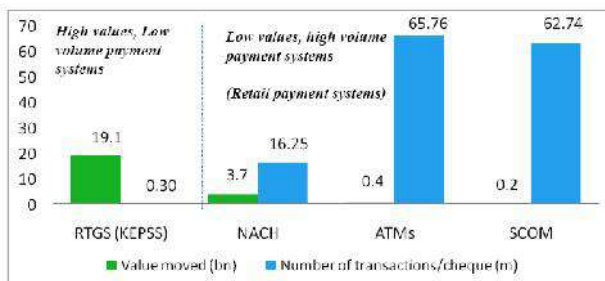
Kenya Electronic Payment and Settlement System (KEPSS) while the later is carried out by:

- Nairobi Automated Clearing House, Payment Card switches & Point of Sale systems (Visa, Mastercard, KenSwitch, Pesa Point)
- Securities payment and settlement systems like CDS and CDSC for Government & NSE securities respectively
- Cross-border money transfers including Western Union, Money Gram, IRINET, Express
- Mobile Payments including:
- Mobile phone (M-PESA, Airtel, Orange)
- Internet banking

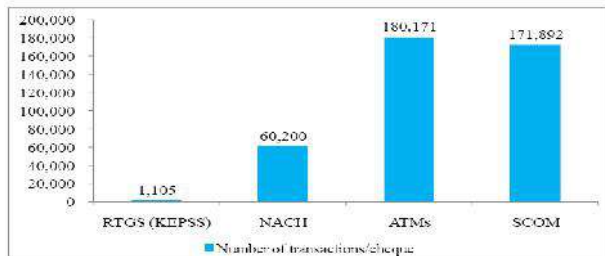
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Figure 3(a) show the average transaction flow through the various systems as per 2009 as per data from the Central bank. The figure depicts data from KEPSS , Nairobi clearing house (NACH), Automated teller machines, Safaricom mobile (SCOM). From the figure it can be seen that KEPSS handles high values, low volume payment systems between banks. While the retail payment systems handles low volume payments systems. The numbers of transactions are highest for ATMs followed by Mobile.

Figure 3(b) indicates the monthly average transaction per cheque. It also emerges that ATMs leads followed by the mobile. At this time only Safaricom was on the market, the other telecommunication companies have moved in to raise that figure even further. Another development has be collaboration between the mobile company and the ATMs owners to allow mobile users to withdraw funds from ATMs such as the PESA Point ATMs.

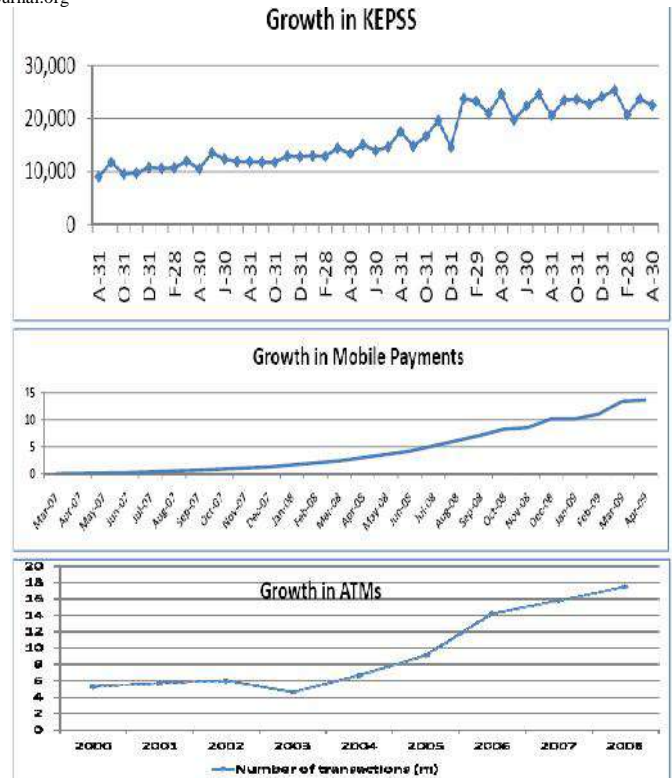


**Fig 3(a):** Average Transaction Source CBK 2010  
 Current payments system monthly average



**Fig 3b:** Number of transactions /cheque Source CBK 2010

Figure 4 shows the growth in KEPSS, ATMs and Mobile transfer. From the figure although the mobile transaction appear low, if you consider that mobile has been existence for a shorter duration than the other two, then we may conclude that it has the fastest growth rate.



**Fig 4:** Growth in KEPSS, Mobile transfer and ATM Source CBK 2010

### 3. ORGANIZATIONS INVOLVED IN ELECTRONICS FUND TRANSFER

In this section the authors looked at various categories of organizations that are involved in electronic funds transfer.

#### 3.1 Banks

All banks use Electronic Fund transfers to transfer funds greater Ksh 1000,000 as per the directive by Central bank of Kenya. Most banks try discouraging over counter withdrawal by charging about Ksh 100 per transaction compared with Ksh 30 for ATM withdrawal. Most banks have their own ATM but also partner with others to increase coverage. Most Banks have ATM plus cards such as Pre-paid , Charge, credit and point of sale Machines. The table 1 shows the number of the ATM, cards and POS machines. From the duration under consideration, the numbers increased by: 20.5 % for ATMs, 74.6% for ATMs cards, 6914.6 %, for prepaid card, -32.8% for charge cards, 5.6% for credit cards, 40.8% for debit cards, and 28% for POS. It can generally be said, that there has been an increased use of E-cash by banks.

**Table 1:** Number of ATMs, ATM cards and POS machines

	ATMs	ATM Cards	Pre-paid Cards	Charge Cards	Credit Cards	Debit Cards	POS Machines
Jul-09	1,691	741,867	280	1,679	108,049	3,280,485	5,063
Aug-09	1,711	756,635	17,249	1,624	108,911	3,904,066	4,824
Sep-09	1,724	775,973	17,255	1,695	108,899	4,414,666	4,382
Oct-09	1,756	422,785	16,733	1,645	107,216	3,388,228	16,619
Nov-09	1,807	960,647	16,742	1,566	108,683	3,570,659	15,661
Dec-09	1,827	1,031,269	16,749	1,682	108,456	3,700,646	15,871
Jan-10	1,840	1,073,052	16,870	1,579	107,682	3,659,965	17,092
Feb-10	1,865	1,069,050	17,230	2,474	107,927	3,768,154	17,587
Mar-10	1,887	1,090,092	17,250	844	108,345	3,894,580	18,582
Apr-10	1,904	1,126,793	16,803	825	112,203	3,955,160	19,753
May-10	1,940	1,165,574	16,562	817	110,147	4,067,088	19,399
Jun-10	1,943	1,252,893	16,081	791	111,383	4,156,187	19,608
Jul-10	1,973	1,271,823	19,701	802	110,788	4,256,198	21,934
Aug-10	1,995	1,316,350	20,115	773	112,675	4,353,272	21,805
Sep-10	2,025	1,339,649	19,795	749	114,204	4,539,792	20,309
Oct-10	2,037	1,295,573	19,641	1,129	114,058	4,617,459	19,279

Source: Central Bank of Kenya Survey

The central bank also carries annual survey on bank charges. This information is published in the daily newspaper so that Kenyans can be in a position to make informed decisions on banking transactions [3]

### 3.2 Postal Corporation

The post office is the oldest non financial institution to offer money transfer due to its wide network. The post office has three main instruments: ordinary money orders which identify the recipients and can be cashed at specific post offices. The telegraphic money order gives guarantee customers same day service. This service was discontinued by year 2003 leading migration of post office services to other money couriers such as Akamba bus services and the Matatus [4]

#### 3.2.1 Posta Pay

This is an Electronic Funds Transfer service that offers you the opportunity to send and receive money instantly from various locations both locally and internationally. PCK says in their web sites that one has access to cash on demand for as short as 15 minutes through their wide network. The suggested benefits of post pay are: ease of use, accessibility, affordability, convenience, and security [5]

#### 3.2.2 Functions of Financial Service

The financial services offered by PCK are: payments of fees to institutions, payment of suppliers, sending money to loved ones and oneself especially when travelling. The listed benefits are: low commissions

charged, widest coverage in Kenya and East Africa, no need for a bank account and safety of the transfer is guaranteed. The number of offices in the PCK network is 500 and part from their core activity; of delivering letters and parcels, they also offer agency services. The corporation stands in as an agent of a principal to either pay dues to the principals' customers or to collect dues on behalf of the principal. In keeping with the times, the PCK has also introduced an electronic system for payments and collection of dues [5].

Table 3 to Table 6 show tariffs and rates for financial services PCK by

**Table 3:** Tariff /Rate Financial Services

FINANCIAL SERVICES			
Postal Order Commissions:			
VALUE OF ORDER		COMMISSION	
Kshs	Cts	Kshs	cts
5	00	5	00
10	00	5	00
15	00	5	00
20	00	5	00
40	00	10	00
60	00	10	00
80	00	10	00
100	00	15	00
200	00	15	00
300	00	25	00
400	00	40	00
500	00	45	00
600	00	60	00
700	00	70	00
800	00	75	00
900	00	85	00
1,000	00	95	00
2,000	00	165	00
5,000	00	245	00

**TABLE 4**  
INTERNATIONAL OUTBOUND TARIFF (EFT.)

TRANSFER AMOUNT	FEES
0 – 8,000	640.00
8,001 – 16,000	800.00
16,001 – 28,000	1,040.00
28,001 – 40,000	1,280.00
40,001 – 60,000	1,760.00
60,001 – 80,000	2,480.00
80,001 – 100,000	3,680.00

**Table 5**  
INSTANT MONEY TRANSFER (EFT.)

FROM (Ksh)	TO (Ksh)	FEES
1.00	1,000.00	75.00
1,001.00	2,500.00	100.00
2,501.00	5,000.00	150.00
5,001.00	10,000.00	300.00
10,001.00	25,000.00	650.00
25,001.00	50,000.00	1,200.00
50,001.00	75,000.00	1,500.00
75,001.00	100,000.00	2,500.00

The source of the data is the PCK web sites accessed on 23<sup>rd</sup> of March 2011

### 3.3 Telecommunication Companies

Safaricom launched M-PESA in 2007. Vodafone , Safaricom’s parent company in the United Kingdom came up with innovation. Safaricom agreed to partner with Faulu Kenya, a leading microfinance institution in Kenya, and the Commercial Bank of Africa, which provided the traditional banking infrastructure. The pilot implementation began on October 11, 2005.

Late in 2007, Airtel launched Sokotele, a competitor to M-PESA. Airtel’s partners in the development are Packet Stream, a public data network operator, and K-Rep, one of Kenya’s leading micro-finance institutions. K-Rep provides the banking expertise, Packet Stream supplies the vending software, and Airtel Kenya’s cellular network makes the connectivity possible.

Several banks have also embraced mobile banking technologies, allowing their customers to carry out banking transactions via their mobile phones [6]. Although, Safaricom, Airtel, YU and Orange telecommunication companies each has a money transfer product, this paper considers only the MPESA - a Safaricom product, as an appropriate representative of the rest.

#### 3.3.1 Safaricom M-PESA Services

M-PESA, an agent-assisted, mobile phone-based, person-to-person payment and money transfer system, was launched in Kenya on March 6, 2007 by Safaricom a leading telecommunications company with about 70% of the mobile market. M-PESA stands for “mobile money”; pesa is the Swahili word for money or cash. By January 2010, over nine million Kenyans had become registered users of M-PESA. The monthly value of person-to-person transfers by December 2009 was over KSh 26 billion (approximately U.S. \$330 million). There was also a phenomenal growth in the number of agents from 7,000 in March 2009 to almost 17,000 in January 2010. These agents are located throughout urban and medium-to-large market centers in the majority of geographic areas of the country [7]

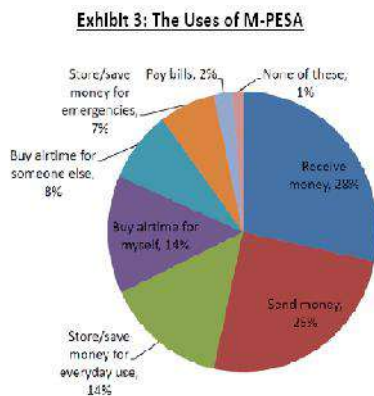
On the company’s website [8] states that to use M-PESA you require to be registered at no charge and may have a maximum account balance Kshs. 100000 and maximum daily transaction of Ksh 140,000. To use the service your safaricom phone needs to be active and you cannot deposit money directly into another person M-PESA account. The services that can be accessed from the M-PESA account are :M-PESA, prepay safari card ,deposit cash to your account, send money, withdraw money, buy Safaricom airtime, pay bills, buy goods, MKESHO, bulk payments and manage your M-PESA account.

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TRANSACTION TYPE	Transaction range (KShs)		Customer Charge (KShs)
	Min	Max	
<b>Value Movement Transactions</b>			
Deposit Cash	50	70,000	Free
Registered User Cash Withdrawal	50	100	15
	101	2,500	25
	2,501	5,000	45
	5,001	10,000	75
	10,001	20,000	145
	20,001	35,000	170
	35,001	50,000	250
	50,001	70,000	300
Unregistered User Cash Withdrawal	100	35,000	0
Cash transfers to registered users	50	100	10
	101	35,000	30
	35,001	70,000	60
Cash transfers to unregistered users	100	2,500	75
	2,501	5,000	100
	5,001	10,000	175
	10,001	20,000	350
	20,001	35,000	400
ATM Withdrawal Charges	200	2,500	30
	2,501	5,000	60
	5,001	10,000	100
	10,001	20,000	175
Buy airtime (for self or other)	20	10,000	0
<b>Information Transactions</b>			
Change PIN			20
Show balance			1

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From a survey conducted by Radcliffe [9] the uses of M-PESA are shown on figure 5 exhibit 3



**Fig 5:** uses of Mpesa Source Radcliffe 2010

From the chart, we conclude that 55% of the users use it as a money transfer tool.

Table 7 shows the M-PESA Tariff.

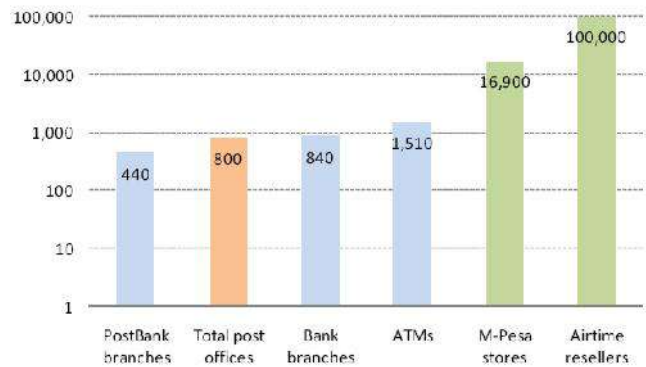
Table 7 showing M-PESA Tariff:

**M-KESHO**

This is a bank account introduced by both Equity and Safaricom where customers can earn interest from as little as Ksh1. Customers can withdraw cash from their Equity Bank Account to their M-PESA accounts and customers can also deposit through their M-PESA accounts to their M-KESHO Bank account. Other features of the account include Micro credit facilities (emergency credit availed through M-PESA), Micro insurance facilities as well as a personal accident cover that translates into a full cover after 1 year. For one to open this account, the person must be an M-PESA subscriber [8].

Once a customer opens an account, the deposits are maintained in as a non interest earning account in the Safaricom server. Safaricom issues and manages the M-PESA accounts, but the value in the accounts is fully backed by highly liquid deposits at commercial banks [9]. The foregone interest is paid into a not-for-profit trust fund controlled by Safaricom. Figure 6 shows the size of various retail channels in Kenya. It can be seen that the number of M-PESA outlets are far greater than the total number of PostBank branches, post offices, bank branches, and automated teller machines (ATMs) in the country. It has been found out that using existing retail stores as M-PESA cash-in/cash-out outlets reduces deployment costs and provides greater convenience and lower cost of access to users [9].

**Exhibit 1: Outlets offering financial services in Kenya**



**Fig 6:** Outlets offering financial services Source the Radcliffe 2010

It can be seen that number of M-PESA stores are significant compared with the others this is due to lower starting costs and model adopted. The Merinda Gates foundation has been funding research into the M-PESA phenomena. In one such research, Sheria et al. [10] investigated, the emerging trends in the M-PESA agent model. Their findings were: (i) Most agents, were successful business owners prior venturing into M-PESA; (ii) They self-financed or used informal sources of finance to venture into M-PESA business; (iii) The volume and number of transactions fluctuate based on the seasons and time of the month; (iv) The withdrawal transactions were key activity in rural locations and women being the primary customers.

Collaboration between financial institutions and M-PESA is becoming more common to improve services and outreach. M-PESA's effectiveness faces challenges such as cash and electronic float shortages among agents, as well as frequent network service disruptions. In addition, some organizations and businesses have found that M-PESA transaction records are not sufficient for their documentation needs, and are thus limited in their ability to officially link to M-PESA.

**4. TRENDS**

From the literature survey, it can be seen that there is a general trend in increased use of electronics money transfer. However, there is rapid rise in mobile based products. Traditional banks are now introducing internet and mobile banking. Figure 8 shows mobile applications as used in financial services [11].

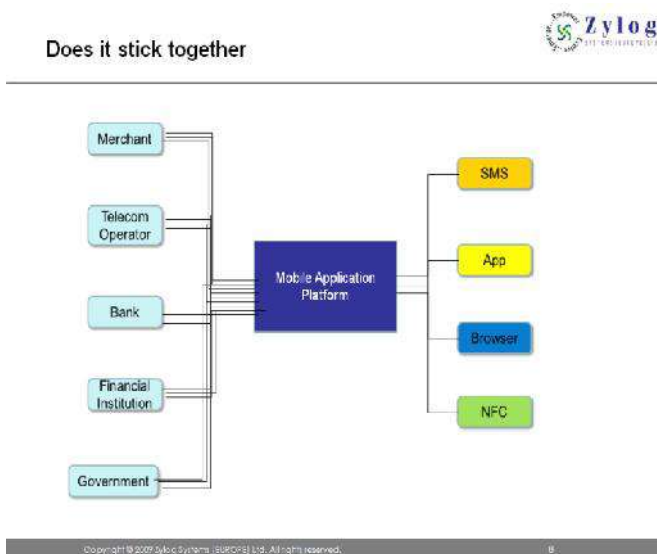
Two characteristics of mobile services make the mobile experience especially attractive to customers: ease of use and mobility. In order to ensure customer adoption, the mobile money transfer service has to be easy to use, anywhere at any time. This is the 'mobile experience' - an absolute necessity for customer adoption. Financial regulation was created with traditional financial institutions in mind; the resulting compliance requirements make it sometime impossible to design mobile money transfer services. However, to seize the opportunity of the mobile-financial convergence, the

'mobile experience' is an integral part of the regulatory discussion[12].



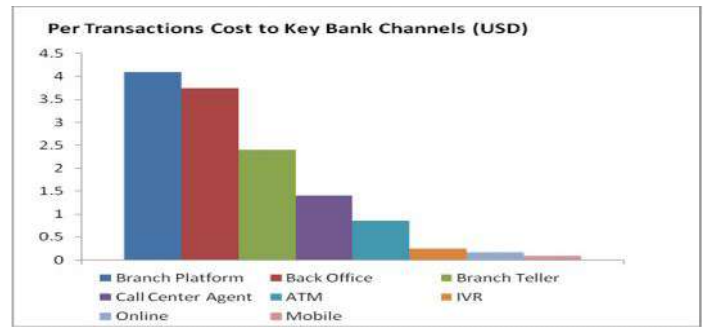
**Fig 7:** Mobile financial applications source zylog system 2009

Figure 8 show the place of mobile application in the financial transactions. It acts as the interface such that on one side we have the Telephone operator, Government, merchant, banks, and financial institutions on the sides we have SMS, application, browser. The mobile application platform making all sticks together.



**Fig 8:** Source Zylog systems 2009

Figure 9 Shows the research conducted Zylog company about the cost of banks transaction . From the figure it can be seen that the mobile bank is cheapest. Although this was done in Europe, it also true in Africa. By comparing the tariff table for Posta and M-PESA, MPESA is cheaper. Not to



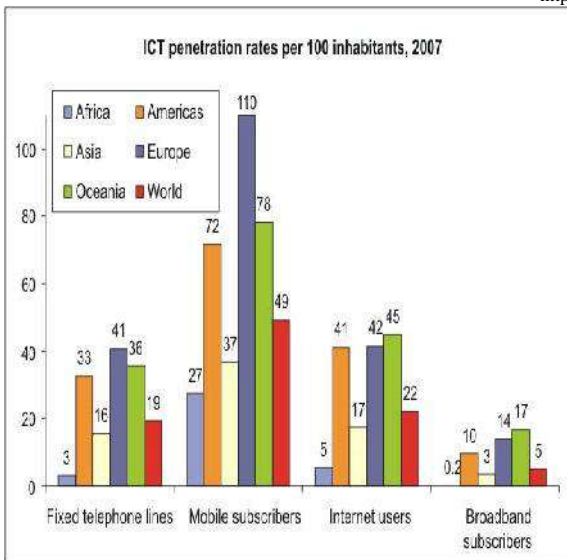
**Fig 9:** Transaction cost Source Tower Group GSM 2008

mention once you have deposited funds in your phone, there is no need for further visits to the agent. You can send funds to whosoever, whenever you want. For banks any transaction you must visit the bank. Hence the global trends toward Mobile. Banks have also introduced the concept of mobile banking to capitalize on this. Also mobile have lower minimum transaction is Ksh 50, compared to banks.

In the 1990's and 2000's most bank in Kenya, were closing down their rural branches saying that it was no longer economical to serve the common man. They also introduced intimidating charges to scare the small safer. This led to large section of Kenyan being unbanked. It's only the Equity bank which saw this as an opportunity, developed its model on serving the poor. It has been a success story, forcing the other banks to start to rethink their strategy.

Figure 10 shows ICT penetration rates per 100 inhabitants as per 2007.

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**Fig 10:** ICT Penetration source ITU-GSM 2008

It can be seen that the mobile subscribers outstrips the others. The offers new market ground as far as financial transaction is concerned. The strategy is, to handle small transactions even though the profit is small, but have many transactions. Most banks have adopted this strategy and have partnered with M-PESA ZAP and YuCash to enable these transactions. Accounts such as MKESHO have sprouted out of this. Almost all banks in Kenya have a mobile banking section, which was unheard four years ago. Western union the international money company has also partnered with mobile company to facilitate the remittance of funds by people in the Diaspora[13]. This has enhanced global money transfer and increased the synergy between the various electronic money transfer schemes.

In Kenya the CBK has moved in and ordered the mobile companies to reduce their cash transfer. It continues with its drive for reduced mobile services. CBK governor Njuguna Ndung'u revealed that the reduction is among the conditions the operators agreed to before CBK allowed them to review the limits on the amount that can be transferred from KSh35,000 to KSh70,000 per transaction.

Merritt [15] argues that the ubiquity of mobile technology is advancing the adoption of mobile money transfer services for people in developing countries, providing a safer and more efficient environment for conducting transactions and improving financial inclusion. In developed countries, the increased functionality of smart phones with innovative payment applications is driving the potential development of new peer to peer services(P2P), as evidenced from pilot trials and partnership initiatives with traditional money transmitters and mainstream financial institutions with wireless carriers. As geographic borders lose their relevance, these services are likely to migrate to the United States as they represent a viable alternative for under banked consumers, immigrants, and financially mainstream consumers seeking an electronic P2P

payment solution. In the interest of preserving the integrity and safety of domestic and cross-border retail payment systems, industry stakeholders, policymakers, and regulators should cooperatively share information about service developments and consider potential gaps in regulation, with the following considerations in mind:

- The new mobile payments landscape requires the establishment of a dialogue between regulatory authorities for financial services and telecom sectors.
- An oversight infrastructure for mobile payments, including the financial services of telecom firms, should be established either in partnership with existing authorities or as a new organization.
- An improved customer-data sharing on an international basis by central banks, regulators, and law enforcement organizations, as money transfer businesses are established in multiple geographic and legal jurisdictions.
- Mobile payment service providers in the should be required to establish programs to mitigate the risk of money laundering.
- An evaluation of consumer protection risks for potential gaps in regulatory oversight.

It's the authors considered view that Kenya is far ahead of most countries in this regard as its systems are up and running. There has been collaboration with Communication Commission of Kenya. The retail regulatory frame works is out for public debate. The Kenya Citizen has taken to mobile funds transfer like a fish takes to water. New products continue to be developed for Kenya Market, the latest being M-SHWARI by Safaricom that acts as credit and saving product.

## 5. CONCLUSION

The Electronic money transfer was pioneered by the Post office with their defunct telegraphic money transfer. When this became difficult to maintain, it was discontinued. Passenger transport organization filled in the result gap by offering courier services for both money and parcels. Most of these have since changed over to M-PESA system, which more secure and safer. Also banks have embraced electronics money transfer since the 1990's, accelerating with introduction of ATMs and peaking with introduction of Mobile money transfer. There has been a phenomenal growth in mobile usage in world, with the fastest growth rate being in Africa. Mobile money transfer has looped in the unbanked population into the financial system; accelerating the rate of growth in electronic money transfer.

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