AN INVESTIGATION ON THE OPERATIONAL CHALLENGES FACING COMMERCIAL BANKS ARISING FROM MOBILE PHONE MONEY TRANSFER SERVICES

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DECLARATION

This is my original work and has not been submitted for an award of a degree or any other award in any other university.

Signed…… Date……

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This research project report has been submitted for examination with our approval as the University of Nairobi supervisors.

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DEDICATION

To my Dad, Mzee John Siwa-You taught me Patience, hard work, Integrity, Love, Compassion and the values that are the guiding pillars of my Life.

ABSTRACT

Kenya's Financial Sector is Robust with 45 banks. It also has four Mobile phone service Providers with two of them having recently launched Phone money Transfer services, the other 2 having launched theirs a while back.
The Consumer of the financial Services utilises it in varied ways causing in varies ways strain on the available resources and at the same time, putting stress on the operational capacities and capabilities of these facilities.

Of the four Delivery channels available for banking institutions in Kenya such as ATMs, telephone-based access, internet-based access and the branch network being the means of accessing, transferring and depositing money, this study focuses on the telephoned based access which has in the recent past become very popular in the country.

The study main focus was to find out the extend to which the Mobile phone money transfer is embedded as a means of money transfer in the country in addition to the existing bank money transfer services. As these services interphase with banks traditional delivery channels, the study sought to find out how the operations of Phone money transfer services has affected the operations of banking institutions.

This is mainly in terms of how this service has put either a strain or push to the existing Operational Capacities and capabilities of banks which have in the past relied a lot on ATM's and Branch Network as the major avenue of channel Delivery. With this new Innovation, the order qualifiers and Order winners are out rightly expected to change and the study also looked at how this has been shifted.

The study found out that of the services provided by mobile phone money transfer value added services, Technology and education was found to be the most influential factor influencing money transfer services. The effects of these money transfer services were found to affect banks in a number of ways. Key among the reasons were increase in number of delivery channels i.e. capacity and flexibility, Security i.e. Operational capacity flexibility, Integration with other banks services,

Better operational design and reduction in number of bank staff as the innovation takes root and replaces the traditional bank delivery channels.

Further study areas could include how security as a factor is determining the spread of the service, customer satisfaction either this innovation as a replacement to the face to face banking operations, major order winners and qualifiers for this service and how banks and phone service providers are positioning themselves to benefit from this service.

The study was done in Nairobi, with 200 staff from 10 banks surveyed and a response rate of 60% with 120 respondents responding. The hypothesis of the study was found to be correct, as mobile phone money transfer services were found to have affected the operations of baking operations.

ACRONYMS

ATM-Automated teller Machines

CBK –Central Bank of Kenya

CCK- Communications Commission of Kenya

CGAP- Consultative Group to Assist the Poor

CIO-Chief Information Officer.|

CTO-Chief technical Officer

IP-Internet Protocol

KES-Kenya Shillings, Local Monetary Unit for Kenya

OECD-Organisation of Economic Development and Cooperation

SMS-Short Messaging Service otherwise called “text messages”

UTUAT- Unified Theory of Acceptance and Use of Technology

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Mobile phone banking has recently revolutionized financial systems in Kenya after its introduction. As a result of deregulation, competition has been accelerated thus allowing internet expansion and computer usage to proliferate. Consequently, it became ideal for banks to envision themselves on how to meet their customer's expectations. Kenya as a country is struggling to become semi-industrialized and has no intention of being left behind but to vigorously adopt e-banking services in line with the compatible electronic components available in the marketplace. By mid 2000, the country was almost fully embracing personal computers and online services were progressively becoming a way of life for the Kenyan business society thus gearing the country to migrate to knowledge based economy mainly because of wide IT usage by the citizens and constant public publicity of new technology concepts throughout the country (Ofwona, 2007).

This concept of marketing being relatively new to most banks in Kenya has made them to operate in a highly competitive and uneven marketplace characterized with consumers who are highly literate and financially empowered. Combining this fact with high increase of direct low cost competition from recognized high street branded names for example Barclays bank of Kenya ltd, Standard chartered bank, Kenya Commercial Bank ltd and dedicated phone providers such as Safaricom, Zain Kenya, Yu and Orange, provide a difficult trading environment for the traditional banks (Howcroft and Durkin, 2000).

Consequently, the increase in customer interaction through remote technological channels such as telephone or internet and the effects for bank-customer relationships are potentially of key importance. Customer satisfaction brings out the question of growing uncertainty of mobile phone banking services and its implications. The viability of such services needs to be explored further as many Kenyan financial institutions have adopted as a value added feature to gain competitive advantage. Consequently, customer perception of service quality is the main focus of financial

institutions as they commence on developing strategies to achieve customer satisfaction (Mutula, 2007).

When online payment services like Pay Pal were first launched over a decade ago in the United States, the sudden ease with which regular people could electronically transfer money between each other online was nothing less than miraculous. That phenomenon is happening all over again in the form of cash transfers via text message and mobile phone money transfer-a clever form of emerging m-commerce (Wallstreet Dec 8th 2008).

1.1.2 The Mobile Phone Industry in Kenya

For the last one decade, the marketing environment facing firms in Kenya has been dynamic. Generally, there has been a shift from a stable, predictable and uncompetitive environment to one that is volatile, unpredictable and competitive (Muturi, 2004). Up to 1990's many firms in Kenya enjoyed unchallenged monopolies and government protection. Telecommunication was no exception with the state owned Postal Corporation of Kenya as the main Player. In fact, when the government licensed the first mobile phone service provider, it was placed as a department under this state corporation.

Deregulation and globalization have however turned around the Kenyan marketing environment. Globalization has spearheaded the integration of the Kenyan economy with other world economies such that Kenya is now part of the global village. The power of information and technology, deregulation, globalization of markets and stiff competition has made customers better educated, more inquisitive, sophisticated and deciding (Ofwona, 2007).

The marketing environment has tremendously changed thereby posing serious implications and challenges to the survival and profitability of firms. Following the liberalization of the telecommunications sector in Kenya in 1998, two mobile telephone service providers, Safaricom limited and Kencell (now Zain (Bharti), previously called Celtel) communications limited were licensed. In addition, a third mobile service provider involving Vtel Ltd. of Dubai won the bid to operate in Kenya

in 2006. Their bid was however cancelled by Communications Commission of Kenya after they failed to apply for the license within the given deadline. The state owned fixed line phone operator-Telkom became the third player to join the fray in 2007, when after a quick sale off by the government to a French Consortium, quickly set forth by launching its mobile phone services which to date are doing well.

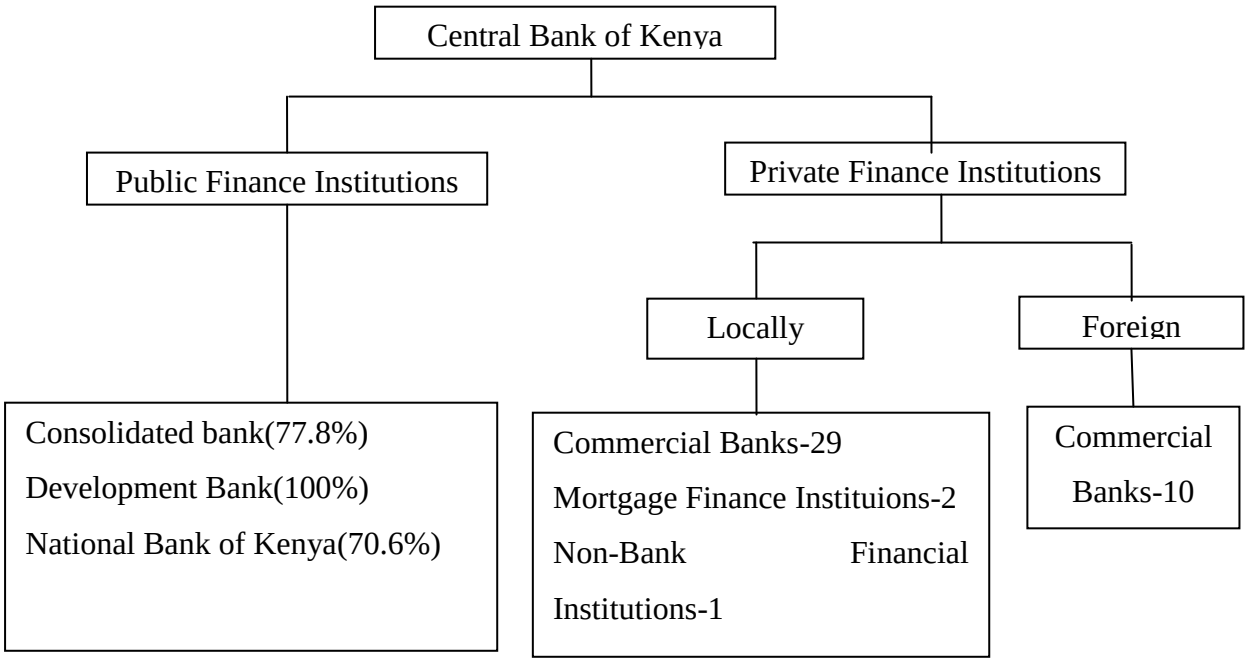
A fourth Mobile phone operator, Essar operating under the Brand Name Yu was licensed and began operating in 2009. This shows that the industry is still growing and there is potential of more entrants of new service providers in the industry. The two top mobile service providers (Safaricom and Zain) with an estimated combined market share of around 95% (Joseph, et al,-2009, www.safaricom.co.ke) are engaged in a tight race to diversify their product range in a bid to rope in more subscribers and grow their revenue.

1.1.3 The Banking Industry in Kenya

Statistics indicate that there are 45 commercial banks in Kenya (www.cbkbank.go.ke), consisting of both Local and multinational Banks. This is made up of 45 licensed institutions to carry out the business of financial intermediation. They are guided by prudential guidelines issued by the Central Bank of Kenya. Of the 45, 2 are mortgage finance companies and one is non-bank financial institution. In terms of ownership, out of the 45 institutions 35 are locally owned and 10 are foreign owned. 3 locally owned banks have significant government shareholding (Okatch Felix 2009).

After the 2002 general election when there was a regime change in Kenya, the economy performed so well. The economy grew by an average of 6% (Central bank of Kenya).This growth translated to a greater need for banking services, as more and more people started building up savings and at the same time there was a demand for more loans from banks, either for investment or for major purchases (www.centralbank.go.ke).

Figure 1: Structure of the Banking Sector



Source-Business Intelligence service for Africa.(Okatch, F, 2008)

Due to the increased demand, banks saw the need to open up more branches to meet this demand. More and more players also came in to serve this capacity. In the delivery of Services, these banks and financial institutions use a number of delivery channels to deliver their Services. These delivery channels can be classified into 4 as ATMs, telephone-based access, internet-based access and the branch network (Branca, 2008). This, however is increasingly being confined to Technology based Delivery channels.

Hen came the entry of mobile phone money transfer services and with the global economic recession and the aftermath of the 2007 post election violence, already demand for banking services is waning. This implies that this capacity that banks created is slowly been underutilised. As such, they have to come up with very innovative ways to fully utilise this capacity or be flexible enough to convert this capacity for alternative use.

This also implies that this may spell the end of this expansion craze by banks as the capacity they have is already getting underutilised. Due to its fast delivery, high

capacity, low pricing and widespread capacity for use, the mobile phone services have taken a solid stand to the extent that some individuals previously utilising bank facilities now have turned to Phone money transfer. These services have also proved to be very flexible with huge Capacity flexibility (Njenga, 2009).

1.2 Statement of The Problem

According to the Central Bank of Kenya Banks monthly Survey (2008 December), an improved economic was witnessed in the early part of this decade, hence banks have meanwhile grown and spread their services to areas which were considered financially unviable previously or which they had shut down their operations in the early 1990's when the economy was doing very poorly, costs were shooting up the roof and capacity critically under-utilised. In today's fast moving business, customers need faster and more secure services for their financial transactions.

Services offered by mobile phones in banking services in commercial banks include Balance enquiry, Mini statement, Funds transfer, Cheque deposit, Cheque book request, Statement request and Pin change. In card division ,the service offered are Gold Plus savings account, Golden savings account, Master card, Visa card, Electronic funds transfer (EFT), Merchant services, E-statements, Electronic data interchange., Electronic clearing services credit clearing and debit clearing. Society for worldwide inter-bank financial telecommunications (SWIFT Services) and Telephone internet banking Standing order transactions.

As a result of the expansion in the need and provision of financial services, banks have heavily invested in structures, both physical and Electronic to facilitate transactions for the increasing number of Customers. There have been four delivery channels that customers have relied on in the past (Bank Branches, Automated Teller Machines, Internet Banking and Telephone based Banking).However, a majority of the customers depend on Bank Branching and Automated teller Machines, whose capacity have greatly increased.

However, as from 2007, there came telephone based Money transfer services. With their increased Capacity and more flexibility, bank customers may opt for these

services at the expense of the traditional bank delivery channels. This will hence result in the physical bank capacity being affected as their operational capacities will have to be utilised in some other ways.

This paper will therefore attempt to determine the extent to which the operations of the banks have been affected as more and more people migrate to use the money transfer service and banks find that non-Technology based channels are all over a sudden becoming non-fully utilised. Some banks having incorporated these money transfer services among their offering, will still find it hard given that they will not have a free hand on the levies given. This will mainly be restricted to Capability challenges, options for design considerations and Capacity challenges on the way forward.

This dilemma thus in a way affects the operations of the banks and raises the questions of how they can come up with new order winners and qualifiers to help them beat this 'storm' and adapt or re-engineer their operations to take advantage of this new and emerging concept, a Technological innovation that could be an advantage if well harnessed.

1.3 Hypothesis

H_1(Research Hypothesis)-The Mobile Phone money transfer services in Kenya has directly affected the Capacity and operations of banks in Kenya hence creating under-utilisation of the capacities of Commercial banks in Kenya, putting a break to the physical expansion of banks and increased technological expansion of Banks.

1.4 Objectives of the Study

The objectives of this study were:

i. To determine the extent to which mobile phone banking has affected the commercial banks in Kenya.
ii. To establish the factors influencing mobile phone banking among commercial banks in Kenya.
iii. To determine the challenges of mobile phone banking affecting commercial banks in Kenya.

1.5 Relevance/Importance of the Study

The study could not have come at an opportune time. The banks were at first warring with the phone service providers over the legality of this new innovation, while the regulators had given the phone companies a clean bill of health and a straight go ahead. Thus there are several relevance that will as a result arise.

This study was therefore an icebreaker for further research in the Kenyan context. As such, this study was based on an industry approach to understand Capacity and operations management in the Banking sector, as a reaction to the mobile phone money transfer.

It will provide an insight into how the operations of the phone money transfer services have affected the operations of banks and hence point the results as to how the capacity utilisation of banks will be affected going forward with the continued encroachment of this service into the financial sector. The information will also strengthen the urge of mobile phone service providers to be more innovative to protect this new found source of income and customer attraction tool.

It will provide useful information of how banks have reacted to this service (by adapting or countering) and how this will affect the operations of both banks and financial institution. The study will assess the way forward for the banks as partains the money transfer services.

The consumers will find this information useful as they attempt to look for better dealers in money transfer and e-commerce. This is especially important for laggards who have not yet adapted this technology. It will provide useful tools for banks on how to utilise idle capacity or channel it for alternative uses if found to exist. Operations managers in banking institutions will especially find this useful and will provide an input into their operational planning and capacity utilisation.

CHAPTER TWO: LITERATURE REVIEW

This chapter provides the available literature that had been reviewed for the study. The literature deals with the innovation internet banking strategies as adopted by banking industries worldwide and as for our instance case Kenyan financial institutions.

2.1 Technology Adoption Models

A fair number of theoretical and empirical research on mobile phone banking have been undertaken in Kenya and also through the globe due to the increasing scale of mobile phones and consequent conversion of many economies into a paper-less and cash-less ones(Safaricom, 2007). In the twenty-first century, mobile phone banking has evolved to become one among those mainly accepted as non-cash instrument in the United States of America and its recognition has been explosively mounting around the globe (Aladwani, 2001). In the Republic of Kenya, mobile phone banking concepts commenced in the year 2007 as per Central bank of Kenya report of 2008 (CBK, 2008). The increasing adoption of telecommunication technology in the western world is undoubtedly providing a rising segment of banking consumers a chance to re-consider using fraction of their banking business using self-service delivery systems (Quinn, 1996).

However, factors affecting the acceptance of a new IT are likely to vary with the technology, target users, and context (Moon and Kim, 2001). Recent research has indicated that "trust" has a striking influence on user willingness to engage in online exchanges of money and personal sensitive information (e.g. Hoffman et al., 1999; Friedman et al., 2000).

Therefore, perceived ease of use and perceived usefulness may not fully reflect the users' intention to adopt Internet banking, necessitating a search for additional factors that better predict the acceptance of Internet banking. Sohail (2003) suggested that in the current trends, e-banking revolution has been set in motion in the banking sector which tends to report on the customers' preferences for electronic banking and the factors which he consider influenced the adoption of electronic banking and those that significantly affect the usage of e-banking services. Current trends in the Malaysian banking sector reports on an empirical research that was carried out in Malaysia to

study the customers' preference for electronic banking and the factors, which they considered influenced the adoption of electronic banking.

2.1.1 Adoption of UTAUT Model

The present research set out to test UTAUT model in a less developed (developing) Kenyan economy. It integrates the fragmented theory and research on individual acceptance of information technology into a unified theoretical model that captures the essential elements of eight previously established models. First, the model identified and discussed the eight specific models of the determinants of intention and usage of information technology. Second, these models were empirically compared using within-subjects, longitudinal data from four organizations.

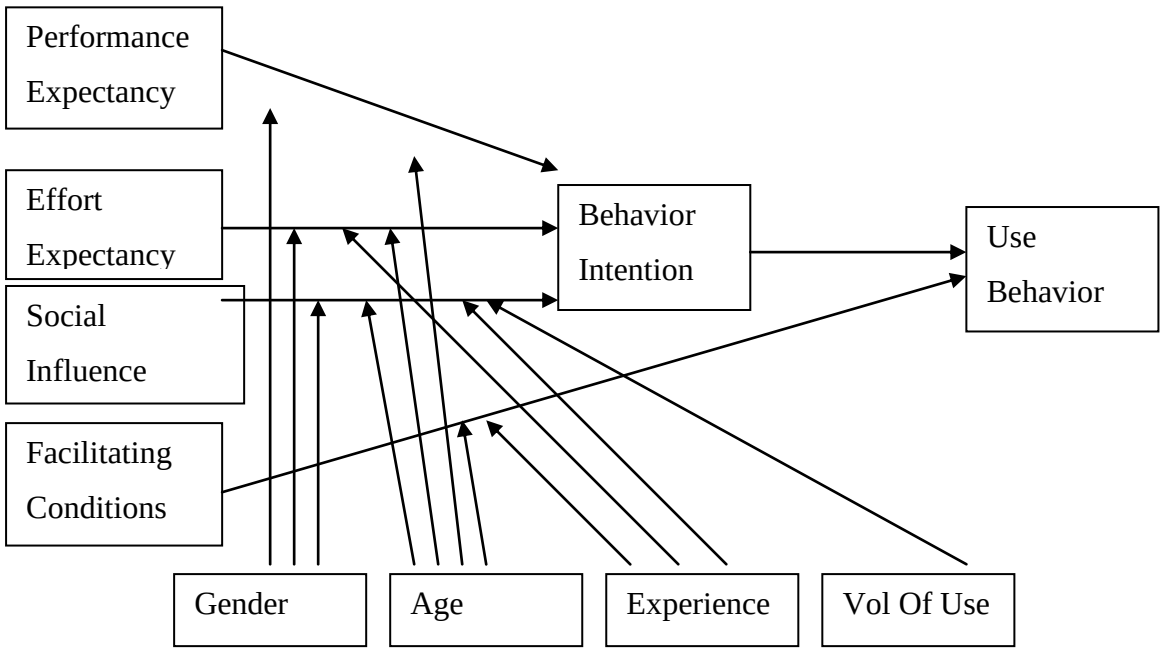
Third, conceptual and empirical similarities across the eight models were used to formulate the Unified Theory of Acceptance and Use of Technology (UTAUT). Fourth, the UTAUT was empirically tested using the original data from the four organizations and then cross-validated using new data from an additional two organizations. These tests provided strong empirical support for UTAUT, which posits three direct determinants of intention to use (performance expectancy, effort expectancy, and social influence) and two direct determinants of usage behaviour (intention and facilitating conditions). Significant moderating influences of experience, voluntariness, gender, and age were confirmed as integral features of UTAUT. UTAUT was able to account for 70 percent of the variance (adjusted R^2) in usage intention--a substantial improvement over any of the original eight models and their extensions.

2.1.2 Application of UTAUT Model

It should be noted that performance expectancy appears to be a determinant of intention in most situations: the strength of the relationship varies with gender and age such that it is more significant for men and younger workers. The effect of effort expectancy on intention is also moderated by gender and age such that it is more significant for women and older workers, and those effects decrease with experience. The effect of social influence on intention is contingent on all four moderators included here such that was found to be non significant when the data is analyzed

without the inclusion of moderators. Finally, the effect of facilitating conditions on usage is only significant when examined in conjunction with the moderating effects of age and experience--i.e., they only matter for older workers in later stages of experience.

Figure 2: UTAUT Model



Source: Venkatesh 2003

By considering arguments of Dabholkar, (1994) new service delivery have been facilitated by technology based platforms whose options have increased customers who intends to be involved in service delivery processes. The options are however,

2.2 Mobile Phone Banking Practices

Mobile banking has been noted to have two very distinctive characteristics which are additive and transformational (Porteous, 2006). The difference in characteristics stem from their usage and application. Additive is associated with just merely offering alternative avenues of an account which is existing while transformational is associated to the linkage of the bank's products and electronic gadget (phone) to non-account holder in a conventional bank (Njenga, 2009). The additive in the mobile banking concept provides wider range of choices for an existing account holder to enjoy and access mainstream banking channels at a convenient way. However, Sarker and Wells, (2003) urged that mobile phone experience bottle-necks when accessing

banking channels due to inability of its single access requirements. The introduction of much cheaper cell phone devices coupled with increased net-work accessibility, has moderated the playing field level for the mobile banking concepts to grow with ease (Njenga, 2009). Mobile phone banking has allowed individuals to access bank accounts directly and transfer or make enquiries using cell-phone in addition to providing mobile wallet to individuals as wells as enabling payment to utility bills, settle grocery bills in supermarkets and online shopping (Standard Daily Newspaper, 2010).

In business practice, mobile-banking and mobile-phone banking are two terms which tend to be used interchangeably (Bileta, 2007). The mobile-banking concept involves the banking services like saving accounts and money transfer transactions which are accessed electronically through mobile gadget (Njenga, 2009). Therefore, mobile-banking has almost become a solution of many challenges faced by the banking customers when accessing their accounts and its efficiency in transaction processes has aided competitive advantage (CGAP, 2009). The meaning and management of money have been changed by electronic channels and forms of money (Singh, 2004). Meaning of every day payment is changing because of the growing use and advance of mobile phone to pay for goods and services. According to Meuter et al., (2000) argued that increased use of self-service technologies have personalised some money transactions and added self-service. This can be used for customer service, transactions and self help mainly over the telephone, internet and in interactive kiosks.

Among the criterion for satisfaction is the self-service technology which offers relatively superior value than other forms of transaction, particularly when immediate service is needed and no other channels are available. Meuter et al., (2000) observed large number of customers are not interacting with service firm employee instead they interact with technology to create service results. Mobile phone banking is usually performed by means of SMS or mobile internet and has inherent transformational potential due its environmental characteristics (Njenga, 2009). It uses basically the infrastructure of mobile communication which fortunately is reachable to wider population and it is also driven by mobile phone industry operators whose objective markets are different from conventional banks (Njenga, 2009 and Proteous, 2006).

Unlike other banking concepts, mobile phone banking field is fast evolving, fairly new and based on various domains including those of security, telecommunications and banking. Therefore, its usage tends to raise concerns on issues of operation and regulations.

Proteous, (2006) suggested that issues like the user's demand increase in banking basket-size, real time cash alternatives and diversification of mobile operators businesses are compelling drivers for mobile phone banking. Major constraints that can inhibit mobile phone banking includes accessibility of capable handsets, user know-how, lack of clear business models, lack of global technology standards, financial regulations and legislation, and consumer rights concerns. Njenga, (2009) also add that mobile phone banking lacks common technology standards which poses a challenge of interoperability between the mobile phone applications especially where service lifecycle for interoperability is within one country. This myth will only be possibly resolved as the practice gets older in its usage between individuals and the banking world standards.

Considerable attention of mobile phone banking is also currently attracting many banks and microfinance institutions in the third world countries (Jones, 1999). The daily multiplication of demand of mobile payment systems have seen banks and telephone operators for example Vodacom and Orange commence offering new products targeted towards the under-banked or unbanked population (Consultative Group to Assist the Poor (CGAP), 2009).

According Munro, (2001) the simplicity of mobile phone banking is the loading application of software onto mobile phone handsets and facilitates people to undertake certain financially driven transactions while on the other hand opening up investment opportunities for service providers. In the process of offering these services on a commercially viable way, the targeted market benefits from affordable fractional fees charged while the service provider is able to generate profits from the number of transactions. Mobile phone banking has consequently made life easier for majority of people by allowing access to products or services that not only result in increased safety and reliability but also real savings in time and money.

Bileta, (2007) note that banks close economically unviable branches and low staff in the rural or poor inner city neighbourhood due to low economic activities thus making the inhabitants of such areas financially excluded. As internet access is usually limited or unavailable in these areas, mobile phone technology introduction becomes a timely solution for the population which is financially excluded from banking services. Such banking exclusion can enhance child poverty which exacerbates social-economic implications leading to black economy. However, despite it being a relatively new technology that is used to combat financial exclusion, it is yet to be seen how this access will translate into financial inclusion or even poverty alleviation (CGAP, 2009).

According to Herbst, (2001) evaluation of impact on financial exclusion is still treated cautiously because mobile phone banking is more probable to be adopted by financially capable people instead of the excluded individuals. This can be credited to relative inexperience of service providers with the target market which result in clientele base of relatively more affluent customers with formal employment and certain level of financial and technological literacy (Allen et al., 2002).

2.2.1 Mobile Phone Banking Structure in Kenya

From the year 2007, mobile banking started in Kenya after the banking fraternity provided the services necessary to be accessed by mobile phones. The services were geared to allow easy access of accounts' information by their customers (Safaricom, 2008). Ever since, the industry has continued to experience technological innovations which have consequently caused steady growth of mobile phone phenomena leading to the banks re-examining their future business strategies as well as collaborative channels. These collaborative channels provide or link the banking firms with non-banking firms in a manner to offer financial services outside traditional bank premises (Brookings, 2009). The transformational mobile banking became available and the value added services which are entrenched within the services menu are provided from the mobile service providers (Safaricom, 2008).

Mobile service providers differ from another through the price strategy, feature and range of services offered. Currently, Kenya has two practicing mobile providers namely Safari-con and Zain who have differentiated themselves by the brand names of MPESA and ZAP respectively. Other mobile service providers for example Orange and Econet Wireless are said to be pursuing licensing from Kenyan authority to enter the market any time (All Africa, 2008).By exploring the varying scenario of Kenyan financial sector, there is an inclination to centre on universal economic structure, conduct and performance as banks appear to compete among themselves for market share (Nellis et al., 2000). In the exploration, bank's core strategy to achieve competitiveness is considered and both input and output relationship with business scope, economies of scale and IT adoption as a way to reduce cost (Joseph and Stone, 2003). Technology oriented bank services have been classified into retail banking and distribution channels for these services (Howcroft et al., 2002).

Retail banking services includes current account, insurance, credit and investment based services. According to Chou and Chou, (2000) the enquires of balances and transaction activities in the account, funds transfers between accounts, bills settlement, cheque book ordering and credit card advance requisition are five fundamental services available with online banking and due to the effects of globalization in the financial markets and the technological changes, competition is predicted to be tougher in the financial industry (Akinci et al., 2004). As the intensity of the competition progresses within the financial institutions, the involved parties will be forced to offer similar prices for the banking services thus the struggle for attaining competitive advantage become altered towards non-price factors (Black et al., 2002).

According to Central Bank of Kenya (CBK) report (2009), the Kenya rural regions (up-country) are primarily without formal banking services and as a consequence, economic activities have ended up being suppressed for instance savings and market exchanges. Absence of formal banking services leave individuals with the option of informal services which ordinarily charge exorbitant transactional costs. Therefore, the Kenya government has made the accessibility of banking services in rural regions a policy objective. It has also been recognised that while a few individuals maintain

bank accounts, the branch banks are physical distances apart and the movement for those individuals to access these points end up increasing transaction costs. The report further noted that since 2007, over 70% of Kenyans individuals were un-banked and their source of finance was from the informal sources. This made Kenyan banks to dramatically make changes in the financial sector scenery by lowering the barriers for opening bank accounts and reducing costs of transactions across other banks accounts. This resulted to increased bank accounts from 2.3 million in 2006 to 6.7 million in 2009 and deposits rose from KES 540 billion (US$ 7.2 billion) in 2006 to KES 950 billion (US$ 12.6 billion) in 2009 (Brookings, 2009).

2.2.2 M-Commerce and E-Commerce

Mobile commerce (m-commerce) can be understood as a business model that allows a consumer to complete all steps of a commercial transaction using a mobile phone or personal digital assistant (PDA) rather than by going to a store, bank, financial institution or making voice calls and physically being present during execution of transactions. Transactions involving the purchase of physical goods such as books, which are delivered off line, are still considered mobile commerce.

Porteous (2006) distinguishes two aspects of mobile Commerce: Additive and transformational characteristics. Additive aspects are those in which the mobile phone is merely another channel to an existing bank account. Mobile banking is additive when it merely adds to the range of choices or enhances the convenience of existing customers of mainstream financial institutions.

As per Porteous (2006) transformational characteristics arise when the financial product linked to the use of the phone is targeted at persons who do not hold formal bank accounts with the conventional banking institutions. One of the basic examples of m-commerce has to do with receiving sales promotions via the hand held device. The most common application would involve the service provider sending text messages to the subscriber that promote new product offerings, free trials on additional services, or other types of promotional campaigns.

Electronic Commerce, commonly known as (electronic marketing) e-commerce consists of the buying and selling of products or services over electronic systems such

as the Internet and other computer networks. The amount of trade conducted electronically has grown extraordinarily with widespread Internet usage. The use of commerce is conducted in this way, spurring and drawing on innovations in electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web at least at some point in the transaction's lifecycle, although it can encompass a wider range of technologies such as e-mail as well (Muturi,P 2004).

A large percentage of electronic commerce is conducted entirely electronically for virtual items such as access to premium content on a website, but most electronic commerce involves the transportation of physical items in some way. Almost all big retailers have electronic commerce presence on the World Wide Web. Technology experts predict that by 2020 mobile wireless communications are very likely to be available to anyone anywhere on the globe at extremely low cost (Pew Internet & American Life Project, 2006). Because of e-commerce and m-commerce, transactions can now be carried out anytime anywhere and this create new frontiers of doing business and of managing the operational processes of enterprises (OECD, 2007).. This has completely shifted the older order winners and qualifiers which include non-tangible attributes such as customer care, listening and caring for every customer as purchases and transactions are no longer face to face. This is of course something that banks which have for a long time mainly relied on the traditional face to face mode of doing business finding they have to play catch up to.

2.2.3 Evolution of Mobile Commerce In Kenya

Mobile Commerce started with the creation of services by banks which could be accessed through the mobile phone. These facilities aimed at enabling customers' access information relating to their accounts. Subsequent innovations have seen the Mobile Commerce phenomena continue to grow steadily. Mobile Commerce takes several dimensions of execution all representing a new distribution channel that allows financial institutions and other commercial actors to offer financial services outside traditional bank premises (Mutula, 2007).

2.3 Capabilities and Competencies

Firms are increasingly becoming cognizant of the inter dependencies that naturally or by business process growth and challenges, exist between a firms internal operational processes and those of suppliers and customers (M, Rungthsanatham-2004).This awareness has encouraged researchers to seek to better understand the criticality of developing explicit linkages with suppliers and customers.(M, Rungthsanatham-2004) to help improve on operational efficiencies. The banking industry in Kenya has not been very keen on such operational linkages, especially if they do not benefit directly. Mobile phone service Providers on the other hand, in a bid to increase their competitiveness, have been on the fore front of always establishing and maintaining these linkages. And this has been done with so much zeal especially with the battle for market share heating up and with upcoming competition that seeks to cut out the market share of leading mobile phone service providers, Zain and Safaricom. A good example of this is seen with the launch of various bill payment methods by these 2 phone leading companies, almost in succession and with such a zeal that would have been unimaginable a short while ago.

It is recognized that supply and operations interactions represent a form of inter-firm relationships (Carter and Ellram, 1994) that ultimately leads to added value creation and improvement of the bottom line in addition to help maintain Market share. Narasimhan and Jayaram (1998) similarly demonstrated that by managing suppliers strategically, a firm could improve its operational performance, in terms of dependability, flexibility, cost, and quality. This as per Amit and Schoemaker (1993) refer to resources as a group of possessed or controlled factors available to the firm, that can be transferred or acquired from outside, while the competencies represent the capacity to spread resources by means of organizational processes so as to obtain the desired results (they are the fruit, in contrast to the resources, of information developed, exchanged and spread among the personnel of the firm).

Grant (1991) thus asserts that firm's resources and competencies, on one hand provide the basic direction for a firm's strategy, and on the other are the primary source of profit for the firm. Competencies, in contrast to material goods, increase the more they are used and shared. The non-material resources in fact are characterized by:

ability to settle through people ("organizational memory"), uniqueness, difficulty to acquire, difficulty to copy, multiplicity of uses, perish ability if not used, and being incremental. These two factors play an important role as far as Capacity and capability management are concerned.

2.3.1 Trends in Mobile Banking

The advent of the Internet has revolutionized the way the financial services industry conducts business, empowering organizations with new business models and new ways to offer all the time accessibility to their customers. The ability to offer financial transactions online has also created new players in the financial services industry, such as online banks, online brokers and wealth managers who offer personalized services, although such players still account for a tiny percentage of the industry.

Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. According to the Global GSM Association, the number of mobile subscribers exceeded 2 billion in September 2005, and now exceeds 2.5 billion. Many believe that mobile users have just started to fully utilize the data capabilities in their mobile phones. In developing countries like where mobile phone penetration is likely to be very high, mobile banking is likely to appeal even more. This opens up huge markets for financial institutions interested in offering value added services. With mobile technology, banks can offer a wide range of services to their customers such as doing funds transfer while travelling, receiving online updates of stock price or even performing stock trading while being stuck in traffic. In the last 4 years, banks across the globe have invested billions of dollars to build sophisticated internet banking capabilities (OECD,2007).

As the trend is shifting to mobile banking, there is a challenge for CIOs and CTOs of these banks to decide on how to leverage their investment in internet banking and offer mobile banking, in the shortest possible time. The proliferation of the 3G (third generation of wireless) and widespread implementation expected for 2003–2007 will generate the development of more sophisticated services such as multimedia and links to m-commerce services.

2.3.2 Mobile Banking Business Models

A wide spectrum of Mobile/branchless banking models is evolving. However, no matter what business model, if mobile banking is being used to attract low-income populations in often rural locations, the business model will depend on banking agents, i.e., retail or postal outlets that process financial transactions on behalf telecommunication firms or banks (Branca-2008).

According to Maina (2006), the banking agent is an important part of the mobile banking business model since customer care, service quality, and cash management will depend on them. Many telecoms will work through their local airtime resellers. The bank-focused model emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers. Examples range from use of automatic teller machines (ATMs) to internet banking or mobile phone banking to provide certain limited banking services to banks' customers. This model is additive in nature and may be seen as a modest extension of conventional branch-based banking.

Maina (2006) further argues that mobile banking can offer services such as: Account Information, Mini-statements and checking of account history, Payments, Deposits, Withdrawals, and Transfers among others. Especially for clients in remote locations, it will be important to help them deposit and withdraw funds at banking agents, i.e., retail and postal outlets that turn cash into electronic funds and vice versa. The feasibility of such banking agents depends on local regulation which enables retail outlets to take deposits or not. A specific sequence of SMS messages will enable the system to verify if the client has sufficient funds in his or her wallet and authorize a deposit or withdrawal transaction at the agent. When depositing money, the merchant receives cash and the system credits the client's bank account or mobile wallet. In the same way the client can also withdraw money at the merchant: through exchanging SMS to provide authorization, the merchant hands the client cash and debits the client's account. Based on a survey conducted by Forrester, mobile banking will be attractive mainly to the younger, more "tech-savvy" customer segment. A third of mobile phone users say that they may consider performing some kind of financial transaction through their mobile phone. But most of the users are interested in

performing basic transactions such as querying for account balance and making bill payment (Branca, 2008)..

2.4 Challenges for Mobile Banking

Key challenges in developing a sophisticated mobile banking application are :

2.4.1 Security

Security of financial transactions, being executed from some remote location and transmission of financial information over the air, are the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network service providers and the banks' IT departments.

2.4.2 Scalability and Reliability

Another challenge for the CIOs (Chief Information Officers) and COOs (Chief Operation Officers) of the banks is to scale-up the mobile banking infrastructure to handle exponential growth of the customer base. With mobile banking, the customer may be sitting in any part of the world (true anytime, anywhere banking) and hence banks need to ensure that the systems are up and running in a true all time access fashion. As customers will find mobile banking more and more useful, their expectations from the solution will increase. Banks unable to meet the performance and reliability expectations may lose customer confidence.

2.4.3 Application distribution

Due to the nature of the connectivity between bank and its customers, it would be impractical to expect customers to regularly visit banks or connect to a website for regular upgrade of their mobile banking application. It will be expected that the mobile application itself check the upgrades and updates and download necessary patches (so called "Over The Air" updates). However, there could be many issues to implement this approach such as upgrade / synchronization of other dependent components. (http://en.wikipedia.org/wiki/Mobile_Banking)

Service Design

Services are intangible and their design always focuses on intangible factors.(such as ambience, convenience, location, peace of mind).They are created and delivered at the same time hence leaving less room for finding and correcting errors before customers

find out about them and seek for better service offerings (Usually via alternatives offered by competitors). (William,J.S-2002).Services are not easily inventoried and this poses restrictions on flexibility and makes capacity design very important. They are highly visible to consumers and must be designed with that in mind. Location is of importance with convenience a major factor. Bank delivery channels once designed, for it to be successful, a number of factors come into play to determine its effectiveness.

- Service Quality-Influences Usage decisions for both interpersonal and technology based encounters. Its dimensions are reliability, responsiveness, assurance, empathy adapted to the banking context and to the focus on Technology-based service deliveries.
- Perceived Communication efforts-Lack of insufficient information is one element considered to be poor service. As a precondition to increased usage of a capacity, banks must provide this information to its customers.
- Perceived risk-Technology intensive channels, though highly innovative, are seen to carry some level of risks and low end customers tend to avoid them.
- Dependability of the delivery channel-Trust and confidence arise from dependability customers have on a given delivery channel.

2.4.4 Operational Strategy and Key Success Factors

Mintzberg (1994) argues that strategy is about winning in the market place. It bridges the gap between policy and tactics. The role of strategy is critical as successful organisations are seldom the outcome of a purely random process. It is about having clear goals, understanding the competitive environment, resource appraisal and effective implementation. Successful organisations must build their strategies around deep knowledge of a few highly developed core service skills.

Capacity planning is at the core of any strategy. It entails planning, analysing, Sizing and optimizing capacity to satisfy demand in a timely manner and at a reasonable cost (Armstead and Clark-1994).Hence it becomes a process with a broad scope that brings together business, service and resource capacity needs to ensure optimal use of the resources to achieve the required level of performance.

Capacity management is thus the most critical and strategic area of Operations Management incorporating decisions on how to balance demand and the capability of the service delivery system to satisfy demand. A service firm's success or failure is the process of balancing service quality and resource utilisation expressed in terms of resource Productivity and depends on its skills of matching Capacity and Demand. (Armstead and Clark-1994).Hence the capacity of a firm is the highest possible amount of output that can be obtained in a specific period of time with a predefined staff level, installations and equipment.

Thus the aim of capacity management in Banking is to minimise customer waiting time, improve transaction processing time and avoid idle capacity with the goal of attending to demand in time and in the most efficient way possible.

2.4.5 Capacity Management in the Banking Sector

Banks always seek to grow their business units in the overall sector and in their respective Market share. This is because, the greater the market share in terms of volumes, the greater their profits. Capacity can be defined as the upper limit/ceiling on the load that an operating unit can handle (William J.S-2002) .Banks have mainly shown to have Flexible processes resulting in several products which are more or less interrelated, and flexible workers which have resulted in banks personnel being able to fulfil several roles within the institutions. Looking at service Quality which is the concern of this study, Capacity utilization and service Quality can be looked at in 2 ways. Best operating point is near 70% of capacity - Enough to keep servers busy but allows enough time to serve customers individually and keep enough capacity in reserve so as not to create too many managerial headaches. From 70% to 100% of service capacity, (The critical zone) customers are processed through the system by service quality declines. Above the critical zone, the line builds up & it is likely that many customers may never be served. Capacity Utilisation rate of a facility is found by dividing the Capacity used by the best Operating level of such a facility. (Stevenson, J.W -2002).

Difficulties in increasing capacity brings about greater costs in terms of getting appropriate locations, design for service delivery, security and efficiency and trying to

overstretch existing capacity leading to capacity constraints and hence operational constraints. (Owino,J.P -2006).At the same time, insufficient capacities can result in turning away customers and orders which could lead to customer dissatisfaction and the reality of declining demand. Banks will not attempt to do that in the face of the ever rising competition. Hence Banks have to integrate business growth and capacity planning and management for their long term health. As per Klassen and Rohleder (2002), most banks approach capacity management by attempting to match their capacity levels and expected demand. This they believe, enables them develop a capacity profile that matches their demand profile while retaining economic Viability. This is done by using appropriate forecasting models to arrest seasonal; demand problems during end months or in periods approaching holidays. Banks which posses them are more often assured of success. In the light of increasing competition, there is need for most banks to build their competencies around these key success factors.

1) **Technology**

   Technology is aimed at integrating the front and back office into a seamless service delivery process bringing with it quality and convenience to the customer. From a business point of view, technology can change the basis of competition from low cost to Product Differentiation to specialisation or vice versa (Market Intelligence 2002).

2) **Business Location, Size and Distribution Systems.**

   Kibera and Waruingi (1988) argue that the size of a firm, revenues it is able to generate, its quality of Human resources and capability to dominate in its industry often influence the perception of the customer to the organisation and if possible drive customers in the direction of the firm.

   Distribution systems also affect convenience which is a key consideration for customers. Mobile phone companies can offer their services anywhere anytime hence have a feature of Flexibility, unlike banks which in most cases have services located in specific locations.

3) **Product Range, Packages and Image.**

   A 1998 study in Hong Kong found that the main key success factors for the banking industry included the ability to deliver more product lines, strong focus on consumer business advanced technology and delivery systems and strong brand differentiations. Banks have successfully done this, but the

innovativeness of mobile phone service providers surpasses this (Branca, 2008).

4) **Service Delivery.**

Service operations committed to high quality service delivery and accuracy will anticipate problems and facilitate a friendly fast and easy resolution process. Banks have done better here than the mobile phone companies as their operations require a higher degree of precision and hence customers will rely on them to handle their assets effectively. Mistakes in mobile phone money transfer such as inability to reverse transactions means that the banking business is here to stay.(Frei, Harker and Hunter-1995).

5) **Customer Care and Convenience.**

Frei, Harker and Hunter (1995) observed that consumers tend to choose financial services based largely on location and availability. Due to technology, this has extended beyond availability and location to a wide range of services available from anywhere, anytime and from anyplace. The development of ATM's, computer banking is an evidence of commitment by banks to provide customers with whatever they want at anyplace, anytime. Convenience though, has been brought about by mobile phone money transfer to an extent that this is fast becoming a threat to the traditional order qualifier of convenience as described by banks. To this end, mobile phone companies are scoring a lot better than banks. Even then, banks transactions still remain more secure.

6) **Cost of Service.**

Mobile phone service offerings are generally more expensive on average. Many transactions done over bank counters are free especially on saving accounts. ATM's charge standard fee per withdrawal with a cap as specified. However, in mobile phone money transfer, Transactions are all charged (withdrawals) without exceptions and at values much higher than what one would pay for in banking services. This is however taken care of by convenience and consumers seem not disturbed by it as long as convenience is the major factor.

7) **Robust Human Resource Management.**

Frei, Harker and Hunter (1995) argue that firms with practices which build competence and reinforce role behaviour consistent with customer needs are likely to be successful. A robust Human resource hence helps improve performance by providing skills and competencies and hence good behaviour that drive desirable behaviour and attitudes of employees. This is in line with the fact that all services and operations are driven by Human resources.

8) **Corporate Governance.**

The best run companies have structures for accountability at all levels of management to prevent crippling of funds, scandals or loss-making and value diminishing activities as has been witnessed in Banks of Credit and Commerce International Scandals (Kochan and Whittington, 1991). Corporate governance hence entails hiring and objectively electing independent, well educated, professional Board of Directors and assigning them defined roles. Effective governance ensures accountability and measures to discourage unprofessional practices which go a long way in ensuring smooth operations and ensure quality customer care and customer satisfaction. (Private sector Corporate Governance Trust, 2002).

2.4.6 Flexibility and Capacity Additions

Many bottlenecks in the banking sector in terms of capacity Management are brought about by insufficient Flexibility to change service processes as a means of adjusting capacity demand and strong seasonality in Demand. This is further complicated by the presence of the customer defining personal service specifications often during service delivery (Thomas, D.R.E- 1998).Hence this may call for capacity additions. Careful management is required during capacity additions. This is because of the impact of changing facility focus and the need to attaining a balance during service delivery. This will in turn require a high degree of flexibility of both the facilities and the workforce whose performance is further complicated by experience especially when introducing new processes and equipments. (Owino, J.P-2006).

One way would be to increase the number of services in parallel with the number of service outlets, but this is challenged by deteriorating service Quality. As Capacity of

a given banking facility site increases, there are economies of scale arising. Adding more branches to an already existing branch network produces limited economies of scale. This is because; fixed costs are still distributed over a great volume. Diseconomies of scale may also become evident as acquisition of more sites is done as complexity becomes increasingly unmanageable. (Owino, J.P-2006).

Many banks always operate below maximum processing capacity and this is done intentionally. his is either because of insufficient demand to completely fill the capacity or as a deliberate policy to respond quickly to every new order that may arise. To determine effective capacity, banks ought to have enough capacity while allowing for a provision for expansion if the need arises. This flexible capacity should also able to shrink rapidly in cases of idle capacity (which may be occasioned, by many factors-among them competition). The service offerings can be increased without service quality deterioration. Proper scheduling and planning is also of importance. They ought to think of operating at varied levels (flexibility) in the service facilities based on the varied demand.

2.4.7 Capacity Improvement Plans

Meredith(1992) suggests that capacity improvement plans would include increasing resources when demand rises (in such ways as use of overtime, adding shifts, part-time workers, subcontracting) while when demand falls, flexibility would call for improving the use of resources (by staggering shifts, programming appointments, accumulating orders as serving them out as one, modification of the product by varying prices, carrying out promotions).Capacity adjustment methods may also include cross training of employees to perform different tasks, (as a flexibility practice to meet peak demand for key services). In addition, an increased customer participation in the service process would increase capacity while reducing demand. This for example include self service (such as on ATMs, and using capacity sharing such as using one ATM for all the various banks transactions. This latter strategy leads to reduced running and fixed costs which may be a nightmare in the event of any demand reduction (Gabswzewics & Mitchell- 1991).

Failure to synchronise Demand and supply would result in loss in opportunity to attend to certain customers when demand is higher and the incurrence of losses and

higher costs due to lost income when the demand level is insufficient arising from unused and idle capacity (Sasser, W.E-1998).He therefore suggests the following options for coping with variations:

- Level Capacity Plan-Ignoring fluctuations and keeping activity levels constant. Where the services are very much valued by the customers who have no alternatives, hence customers are told to wait when demand cannot be satisfied. This is not feasible in Money transfer where other channels exist.
- Chase demand plan-Adjust capacity to match demand fluctuations. Applied when customers will not wait long for services and there is need to start the process and taken to a reasonable stage to satisfy the customers. This is very much applied by more investment in Information Technology, faster processing speeds (such as depositing money in a bank account and it reflect immediately), overtime usage, high number of staff and flexible working hours-sometimes even during weekends to satisfy demand. This is where banks could be headed to try and please customers.
- Demand Management-Change demand to fit with capacity available. It fine-tunes the two former strategies by improving forecasting capabilities, setting clear service quality targets, clear resource productivity targets, understanding critical and hygiene dimensions of service Quality and addressing possible failure points and bottlenecks in the delivery system before hand.
- Mixed plans-A combination of any of the above could also be used. Each of the plans is applied either independently or together where advantages outweighs the disadvantages. This requires a high degree of innovativeness.

Hence banks will have the following approaches in trying to manage Capacity.

a) Cushioning-Demand and supply cushioning in the banking sector is for example done by increasing the number of service channels when the number of people increases and even opening previously unused channels..
b) Partnerships within the industry-With other players in the same sector to assist in solving problems that could arise. Such as allowing another bank to be your point of payments in places you do not have branches (e.g. Cooperative banks in upcountry branches allow deposits for Bank of Africa) or allowing appointed mobile phone airtime vendors to sell airtimes of other mobile phone service providers.

c) Voluntary bumping of services and provision of Premium services-Very much applied in the banking sector by forming premium services where with a little premium payments, individuals get faster processed payments and this reduces stress on the already strained delivery channels. In mobile phone telephony, they came up with premium customer care numbers to take care of post-paid clients and ease the pressure on the already strained normal customer care numbers.

d) Workforce training and flexibility-Workers are more and more being encouraged to have more than one skill. This it is hoped will improve flexibility and be able to cushion the organisation..

e) Automation-Investments in new and faster equipments and technology is a definite bonus to capacity management as it leads to increased capacity processing and hence improved service offering. This will smoothen the operational Process.

f) Service bundles-Two or more products can be bundled one and sold off at a discount. This improves service performance, increased demand, allows for smooth operations by market segmentation, reduces a service firms selling risks and provides better service value. This serves to lock the customer and improve efficiency. Extra service offerings (Adam & Yellen, 1976).

g) Collusion with anticipated sources of competition-This allows organisations to expand its operations into sectors which could not have been possible. Hence banks can serve the unbanked by adopting mobile phone money transfer services and mobile phone companies can use this innovation to service the banked, as section of the population which was not its target initially

2.4.8 Anticipated Operational Challenges

A shift from the modern people-based interactive service delivery is soon being overtaken by technologically based delivery channels. This will put a strain on the physical facilities. There will be a move to a leaner staff, and more use of technologically and mobile based service delivery channels, less physical interactions will call for capacity flexibility and mobility, and banks will require capital to invest in these newer delivery channels.

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter presents the research design that was used to meet the objectives of the study as set out in chapter one.

3.1 Research Design

The research problem will be studied through the use of a descriptive survey. Descriptive research portrays an accurate profile of persons, events, or situations (Robson, 2002). Surveys allow the collection of large amount of data from a sizable population in a highly economical way. It allows one to collect quantitative data which can be analysed quantitatively using descriptive and inferential statistics (Saunders et al., 2007).

Cooper and Emory (1995) advocates that surveys are more appropriate for efficient and economical observations. The main objective of the study was to determine the extent to which the bank operations have been affected by the innovative money transfer services and the way forward in the sense of either adapting this service and include it as part of their service offerings or altogether challenge it.

3.2 Population and Sample

The population of interest was the number of banks which currently sits at 45 banks., as per the Central Bank of Kenya. There number of bank accounts in the country currently stands at 6.4 million bank accounts. About 50% of these accounts are found in the greater Nairobi Area. Hence the study will be most representative of the whole country's' position if done with a focus to banks based in Nairobi.

The research was based in Nairobi since as a commercial capital in Kenya these firms are headquartered there and may only have branches outside Nairobi. Adequate data for analysis were therefore easily obtained. As such, generalization of the research findings was to the operational challenges of firms based in Nairobi only.

3.3 Sample Size and Sampling Method

The researcher utilized probability sampling method. From the current banking survey and considering that there were a total of 45 banks, of which 10 of them control an

estimated 71% market share and the top 5 accounting for about 83% of all the bank accounts for the banked population in the country. The survey targeted to concentrate on the top 10 of the banks by number of branches, ATMs and networks in the country as this would be representative of over 80% of the sample (Central Bank of Kenya, 2009).

Furthermore, the study was focused on studying the capacity of banking institutions, and branch and ATM network which directly affected the capacity available for use by these banks, given that these were the two most common service delivery channel services with the banks offering, depend very much on these two delivery channels, and more so, for players in the money transfer business, mainly depend on these two delivery channels. Same case applies to the consumers, who when interphasing the money transfer.

With a targeted population of 200 people from banking sector selected randomly the sample was selected. This was based on the ease of sample management and response efficiency and follow-ups. Mugenda and Mugenda (2003) argue that for a sample to be representative enough, it should be at least 10% of the target population.

Stratified random sampling was used because the population will be stratified according to their level of management giving three strata. The banks as identified and classified are as below.

Table 1: Target Population (Central Bank of Kenya, 2009)

1	Kenya Commercial Bank Ltd.
2	Barclays Bank of Kenya Limited
3	Equity Bank Ltd
4	Co-operative Bank of Kenya Ltd.
5	National Bank of Kenya Ltd.
6	Family Bank
7	Standard Chartered Bank (K) Ltd.
8	K-Rep Bank
9	Commercial Bank of Africa Ltd.
10	CFC Stanbic Bank Kenya Ltd

A target of 20 people were chosen from each of the 10 banks chosen.The total sample stratification can thus be as shown below.

Table 2:Stratification of the Sample.

STRATA	**TOTAL POPULATION**	**PERCENTAGE**	**SAMPLE SIZE**
Banking sector	200	20	40%
Totals	200	20	40%

3.4 Data Collection tools and methods

The data was gathered via both Primary and secondary methods. The primary data was collected through interviews using self administered questionnaires (by 'drop and pick' method upon completion). To ensure reasonable response, each respondent was given a questionnaire, requested to fill it in and then collect it immediately or after a few hours as agreed upon. In this study, emphasis was given to primary data. The primary data was collected using questionnaires. The questionnaires were semi-structured with both open as well as closed questions. This facilitated the collection of both qualitative and quantitative data. The secondary data was collected from the Banks websites, mobile phone service Providers' websites and the website of the banks regulator (Central Bank of Kenya) and the mobile phone company's regulator (Communications Commissions of Kenya), financial reports and various market surveys.

3.5 Data Analysis

Data was analyzed using descriptive statistics especially the percentages for qualitative variables. The results are then presented using tables and charts. The Statistical Package for Social Sciences (SPSS) aided in the analysis.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This chapter presents the data analysis and interpretation. The study had targeted 200 employees from 10 commercial banks. During the data collection, 120 employees from the 10 banks participated in the study. This indicates that the response rate was 60%.

4.2 General Information

4.2.1 Gender

The respondents' gender was analysed in order to understand their representation in terms of their gender. Men generally tend to take more risks with new technology, however women are known to be better influencers with respect to adoption of innovation(Mugenda and Mugenda, 2003). From the study, it shows that more Male than female respondents returned the questionnaires.

Table 3: Gender

	Frequency	Percentage
Male	80	67
Female	40	33
Total	**120**	**100**

The results show that 67% were male while 33% were female. These results reveal that most of the respondents were male. This can also reflect the general representation of female employees in the banks in Kenya.

4.2.2 Level of education

Table 4 below show the levels of education of the respondents from the respective banks. Technology adoption and level of education is a key relationship for banks. Given the results that a higher percentage of the respondents had a t least a first degree is an indication that these banks will have ready staff to support the direction and decision of the bank with respect to the innovation.

Table 4: Level of Education

	Frequency	Percentage
Less than high school	0	0
High school	0	0
First Degree	85	71
Diploma	15	12
Postgraduate	20	17
Total	**120**	**100**

The study found that 71% had bachelors degree**,** 12% had diplomas while 17% had postgraduate degrees. The results indicate that majority of the respondents had bachelors' degrees. This closely reflects the kind of employees mostly employed by the banks.

4.2.3 Age

The respondents' ages were also analysed and the results are shown in Table 5 below.

Table 5: Age

	Frequency	Percentage
Less than 20 years	0	0
20-30 years	38	32
31-40 years	42	35
41-50 years	31	26
More than 50 years	9	7
Total	**120**	**100**

The study found that 32% were aged 20-30 years, 35% were aged 31-40 years, 26% were aged 41-50 years while 7% were aged more than 20 years. These results indicate that most of the respondents were aged between 31 and 40 years. Thus, they were still very youthful and far much reflects the age of most of the workforce in commercial banks.

4.2.4 Mobile Phone Services Offered

The respondents were asked to state what mobile phone services their banks provided. The results are shown in Table 6 as below.

Table 6: Mobile phone services offered

	Frequency	Percentage
Mobile cash transfer	30	11
Cheque book order	10	4
Mobile bank	60	22
Funds transfer	0	2
Account statement	60	20
Change the phone secret number	50	19
Inquiries and complaints	60	22

The study found that 11% of the banks do mobile cash transfers, 4% use the phones for cheque book orders, 22% use them as mobile banks, 2% use it for funds transfer, 20% use it for account statements, 19% use it to change the phone secret numbers while 22% use it for enquiries and complaints. The results show that banks mostly provide mobile banking, account statements and inquiries through their mobile phone services.

4.3 Factors Influencing Mobile Phone Banking in Kenya

The respondents were asked to state their support mobile phone money transfer. The responses are summarised and shown in Table 5.

Table 7: Support for mobile phone money transfer

	Frequency	Percentage
Yes	100	83
No	20	17
Total	**120**	**100**

The study found that 83% agreed while 17% disagreed. Those who did not support the mobile phone money transfer cited that the major issue was the fear of technology taking over their jobs hence rendering them redundant. The results show that most of the respondents supported mobile phone money transfers. This shows that the innovation is becong acceptable to the staff of the banks and hence they are making use of it too. Hence its adoption can be very smooth.

The respondents were asked to state the extent to which some factors influenced the successful growth of mobile phone money transfer. The results are shown in Table 6.

Table 8: Factors influencing mobile phone money transfer

	Least	Moderate	Great	Greater
Technology	0%	8%	42%	50%
Cost of service	8%	8%	33%	50%
Product range	17%	25%	13%	46%
Service delivery	8%	17%	33%	42%
Customer care convenience	13%	29%	38%	21%
Business location	25%	38%	29%	8%

The influence of technology was said to have a moderate influence by 8%, 42% said it was great while 50% said it was greater. This therefore reveals that technology was a major factor that influenced mobile phone money transfer service in the banks in Kenya. This is so because technology has enabled the introduction of software and applications that enable the mobile phone money transfer platform to run on. As such, phones with advanced capabilities have come up as well as computer applications that are used to integrate the bank and phone services. This means technology plays a bigger role in determining individuals ability to utilise more technology based money transfer services.

The study also revealed that 25% said the influence of business location was least, 38% said it was moderate, 29% said it was great while 8% said it was greater. Thus, it can be noted that the influence of business location was very minimal. This finding is not shocking as the mobile phone money transfers do not have to depend on the location so long as the mobile phones are within a certain network. Thus, it would have been shocking if the results were otherwise.

The influence of service delivery was said to be least by 8%, moderate by 17%, great by 33% and greater by 42%. This shows that service delivery was one of the major factors that influenced mobile phone money transfers in Kenya. This can be attributed to the fact that the use of mobile phone money transfers was intended to increase the efficiency of services offered. Thus, the service has to do the exact thing it intended to do if it is to remain relevant. Since it is performing as it should, service delivery has been a major factor.

The study found that 13% said that the influence of customer care convenience was least, 29% said it was moderate, 38% said it was great while 21% said it was greater. These results show that customer care convenience also affected mobile phone money transfer service. This is so because the money transfer service usually has specific customer care numbers that the users can reach the customer care with at any time in case there are problems with the transfers. As such, the service has brought about more convenience.

Further, 8% said the influence of cost of service was least, 8% said it was moderate, 33% said it was great and 50% said it was greater. The results show that cost of service was a major factor that influenced mobile phone money transfer service. This can be attributed to the time reductions and generally lower costs related to the use of the service. The customers do not have to queue in banks waiting to be served by the attendants and this reduces the costs on the part of the bank and reduces the inconvenience of having to wait to be served.

Lastly, the influence of product range was cited as least by 17%, moderate by 25%, great by 13% and greater by 46%. The results reveal that product range influenced mobile phone money transfer service but it was not a very major factor. This can be attributed to the fact that normally there are no wide product ranges provided by the service. The services are limited and specific from the banking point of view as most of the banks have not fully utilised the phone as a means to provide banking services. As at now, one can only withdraw and deposit money in their bank accounts and not all banks are providing this service. Some banks allow for checking for bank balances and bank statements. There is only one bank that allows extension of loans through the mobile phones and the maximum loans given through the phone are also capped very low.

4.4 Challenges Facing Mobile Phone Banking in Kenya

The respondents were asked to cite some challenges as facing mobile banking in Kenya. The results are shown in Table 7.

Table 9: Challenges facing mobile phone banking

	Frequency	Percentage
Security	100	83
Reliability	40	33
Application distribution	20	17
Service design	10	8

The study found that 83% cited security, 33% reliability, 17% application distribution and 8% service design. The other challenges were cited as security provisions and customers, interoperability, scalability and reliability, network related issues, lack of common standards and regulations and customer authenticity and the general security of the service. Hence from the results, one major challenge facing mobile phone banking in Kenya was security. This can be attributed to the absence of tight regulations to regulate the service hence fraudulent transactions can still be carried out. This can explain why most banks have not fully rolled out mobile banking in Kenya. Even then, due to its operational and capacity advantages, the benefits outweighs this risk hence its continued growth.

4.5 Effects of Mobile Phone Banking in Kenya

Table 8 shows results on the effects of mobile phone banking on banks in Kenya. The results are shown in terms of mean scores and standard deviations. The mean scores of 3 or above show that the effect was significant while the converse is true.

Table 10: Effects of mobile phone banking

	Mean score	Std. Dev
Investment in phone banking security measures	4.256	0.415
Increase in number of technology delivery channels	4.311	0.324
Integration of bank with mobile phone services	3.684	0.912
Change of bank order winners and qualifiers	3.448	0.374
Reduction of banking staff	2.207	0.625
Less investment in physical facilities	2.152	0.247

The study found that mobile banking had led to increased number of technology delivery channels (mean score = 4.311). These are seen in terms of increased investment in automated teller machines, use of mobile phones to access bank accounts as well as increased Internet banking services. The study also found that mobile phone banking had led to integration of bank with mobile phone services

(mean score = 3.684). In this sense, the banks have allowed their customers to access their bank accounts by depositing, withdrawing, or checking their balances in their banks accounts.

The study found that mobile phone banking had led to investment in phone banking security measures within the commercial banks (mean = 4.256). This may be attributed to the fact that there is need to increase security of mobile phone banking.
The study also revealed that another effect of mobile banking is change of bank order winners and qualifiers (mean = 3.448), and had also led to change in operational design (mean = 3.452).

The study revealed that mobile phone banking had not led to less investment in physical facilities and buildings (mean = 2.152). In fact, most of the banks are expanding by increasing their branch networks. Thus, at the time of expansion of mobile phone banking, physical facilities and buildings have also increased.

The study found that mobile phone banking had not led to reduction in banking staff (mean = 2.207). Thus, with the introduction of mobile phone banking, the staff numbers had not fallen. In fact, most of the banks have been increasing their staff over the years as they recruit some staff to take care of the mobile banking especially the information technology graduates.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusion, recommendations for policy and practice, and suggestions for further research.

5.2 Summary of Findings

The study found that most of the respondents were male(67%) which mirrors the representation of employees in commercial banks according to gender, and also implies a risk appetite as males tend to take more risk.This is a strong Pointer towards banks adopting the innovative service as part of their offerings.

The results indicated that majority of the respondents had bachelors' degrees and this also mirrors the type of workforce in the banking industry(71% had bachelor degrees).This also implies a smooth implementation on the decision by the banks to adopt or resit the phone money transfer service.

These results indicated that most of the respondents were aged between 31 and 40 years(35%).Individuals at this age are the most technologically savvy and will easily fit into any useful innovation.

.It was also noted that banks mostly provide mobile banking, account statements and inquiries through their mobile phone services. (62%).Hence this implies that Mobile banking, of which phone money transfer services would be an intergral part would be advantaged as such as it would be a synergy to an existing service.

The study found that mobile phone banking had led to increased number of technology delivery channels (mean = 4.311), integration of bank with mobile phone services (mean score = 3.684), investment in phone banking security measures within the commercial banks (mean = 4.256), change of bank order winners and qualifiers (mean = 3.448), and change in operational design (mean = 3.452). This Implies that the banks are now moving on focusing on technology based delivery channels as per

the Hypothesis of the study. As this happens, the traditional physical based delivery channels will become underutilised over time.

The study found that most of the respondents supported mobile phone money transfers at 83%. It was noted that technology was a major factor that influenced mobile phone money transfer service in the banks in Kenya at 92%. It was also revealed that other factors were service delivery were customer care convenience with 75%, and cost of service at 59%. Product range had a moderate influence at 25%, while business location had the least influenced 25% of the respondents. The study found that other challenges were cited as security provisions and customers, interoperability, scalability and reliability, network related issues, lack of common standards and regulations and customer authenticity.

5.3 Conclusions

The study sought to establish the operational challenges facing mobile phone money transfer service. The study revealed that the major challenge was security. The other challenges were interoperability, scalability and reliability, network related issues, lack of common standards and regulations and customer authenticity. The study concludes that there are major challenges that the mobile phone money transfer services faces in Kenya and security is a major issue**.**

The study also sought to determine the extent to which mobile phone money transfer services had affected the operational capacity of banking institutions in Kenya. The study concludes that the effects of mobile banking on banks were increased number of technology delivery channels, integration of bank with mobile phone services, investment in phone banking security measures within the commercial banks, change of bank order winners and qualifiers, and change in operational design.

The results also showed that the most influential factors that influenced mobile phone money transfer were technology, cost of service and service delivery. The least influential factor was business location. The study concludes that indeed the major factors that have influenced the mobile phone money transfer service is the reduction in costs, convenience and technology evolvement.

5.3 Recommendations

The study recommends the need for proper regulations to manage the mobile banking industry in Kenya. Given the security issues, it is important that this industry be regulated as it deserves.

Since there is a pointer that banks are shunning physical based delivery channels in favour of technological based channels, it is imperative that staff are trained on how their current roles can be synergised to ensure full utilisation of the new innovation. No bank was able to demonstrate that this is planned to happen.The banks should also put in place a staggered plan to ensure that all these facilities are put into proper use if need be.

Changes in Operational design will require training to help banks fully take advantage of this innovation. This, coupled up with the fear that the banks staff could be reduced in favour of technology should be a driver for relevant training to ensure customers are well advised as order winners and order qualifiers change.

The study recommends that commercial banks offering mobile money transfer services also need to beef up their security for the mobile banking service by investing in modern technology, such as building system firewalls and allowing system access via system enabled devices with registered IP addresses.

The study recommends that the banks should also have trainings for the customers to equip them with the right skills to counter security concerns. This can be done by organising customer campaigns to equip them with basic skills to counter security issues.

5.4 Limitations of the study.

The respondents were in some cases not very free to provide information. Given the security concerns in the banking sector, most staff, who were mainly middle and lower level managers, were not willing to discuss security issues.

The response rate was very poor, moreso among the ladies. One of the noted limitations of the study was lack of seriousness in completing the questionnaire by some respondents as some questionnaires were partly completed.

Had resources not been a constraint, a larger sample of the population would have been studied to further bolster the findings of the research.

5.5 Suggestions for further research

There is need to perform more rigorous studies in these areas from the customer point of view to establish their satisfaction with the service and also to establish what factors influence them to adopt the mobile banking.

Arising from the research findings, it would be helpful to pursue further study into the factor identified as the most pertinent to consumers such as security and costs of transaction.. In particular a possible area of study would be to establish the effect of customers demand on the price charged by banks on banks account to be at par with the mobile phone money transfer services costs.

Additionally, carrying out the study in other urban areas and also in rural areas can be value adding in consolidating the findings of this research project.

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APPENDICES

APPENDIX A: LETTER TO THE RESPONDENTS

Dear Respondent,

REF: RESEARCH STUDY

I am a student studying for a masters in Business Administration at the University of Nairobi. In partial fulfilment to the award of the masters degree,I am required to do and write a research paper.The topic of my research is '**an investigation on the operational challenges facing local banks arising from the phone money transfer services'.**

I kindly request your assistace by availing time to respond to the questionnaires.

A copy of the final report will be made available to you at your request.

Your assistance will be highly appreciated.

Thank you in advance.

Yours faithfully

Siwa Joshua Otieno

APPENDIX B: STUDY QUESTIONNAIRE

An Investigation On The Operational Challenges Facing Local Banks Arising From The Phone Money Transfer Services.

Section 1: General information

1. Respondent's name……(optional)

2. Gender

   Male [ ]

   Female [ ]

3. What is your highest level of education?

Education level

Less than high school

High school

Bachelor

Diploma

Post graduate

5.What is your age?

Age group

Less	than	20		20 years
20	–	30		years
31	–	40		years
41	–	50		years

More than 50 years

4. Which mobile phone services do you mostly offer?

Mobile Cash transfer(M-pesa/Zap/Yucash)	[ ]
Cheque book order	[ ]
Mobile Bank(e.g. M-Kesho)	[ ]
Account inquiry	[ ]
Funds transfere between accounts	[ ]
Account statement order	[ ]
Change the phone secret number	[ ]
Inquiries and complaints	[ ]

Section 2: Factors influencing mobile phone banking

5. Do you support mobile phone money tranfer?

YES [ ]

No [ ]

If no explain why

……

……..……..**.....**

6. How has mobile phone money tranfer affected you?

……..……

……..……...

7. How has the following factors influenced the successful growth of mobile phone money transfer

	Least influence	**Great influence**	**Moderate infuence**	**More great influence**
Technology				
Business location				
Service delivery				
Customer care convinience				
Cost of service				
Product range				

Section 3: Effects of mobile phone money transfer on local banks.

8. Do you think that mobile phone money transfer has affected the capacity and operations of our local banks?

   Yes [ ]

   No [ ]

9. If yes ,explain how

……..……

……..……

…….....

10. To what extent do you think the following are the effects of mobile phone banking in Kenya?

    [1] Strongly disagree

[2] Disagree

[3] Neutral

[4] Agree

[5] Strongly agree

	1	2	3	4	5
Increase in number of technology delivery channels					
Less investment in physical facilities					
Reduction of banking staff					
Change in operational design					
Integration of bank with mobile phone services					
Change of bank order winners and qualifiers					

Section 4: Challenges of Mobile Phone Banking in Kenya

11. Do you think the following challenges may arise from the mobile banking?

	Yes	No
Security		
Reliability		
Application distribution		
Service design		

Others (specify)

……..……..……

…….....

APPENDIX C: LIST OF BANKS

1	Kenya Commercial Bank Ltd.
2	Barclays Bank of Kenya Limited.
3	Equity Bank Ltd.
4	Co-operative Bank of Kenya Ltd.
5	National Bank of Kenya Ltd.
6	Family Bank .
7	Standard Chartered Bank (K) Ltd.
8	K-Rep Bank.
9	Commercial Bank of Africa Ltd.
10	Diamond Trust Bank of Kenya.
11	CFC Stanbic Bank Kenya Ltd.
12	National Industrial Credit Bank.
13	Chase Bank (K) Limited.
14	Eco Bank Ltd.
15	Investments & Mort. Bank Ltd.
16	Trans-National Bank Ltd.
17	Consolidated Bank of Kenya Ltd.
18	Imperial Bank Limited .
19	First Community .
20	Prime Bank Limited .
21	Fina Bank Limited .
22	Housing Finance .
23	African Banking Corporation.
24	Southern Credit Banking Corp.
25	Gulf African Bank .
26	Bank of Baroda Kenya Limited .
27	Savings & Loan .
28	Bank of Africa Ltd .
29	Giro Commercial Bank .
30	Fidelity Commercial Bank Ltd.
31	Guardian Bank Limited .

32	Bank of India (K) Ltd.
33	Equatorial Commercial Bank Ltd.
34	Oriental commercial Bank Ltd .
35	Paramount-Universal Bank Limited .
36	Habib Bank A.G. Zurich .
37	Credit Bank Limited .
38	Citibank N.A.
39	Dubai Bank (K) Ltd .
40	Habib Bank Limited .
41	Middle East Bank Kenya Ltd.
42	City Finance Bank Ltd .
43	Development Bank of Kenya Ltd.
44	Victoria Commercial Bank .
45	Postbank