EFFECTS OF DIGITAL INNOVATIONS ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

This research project is my own unique work and hasn't been presented for any other degree in any other institution of higher learning for examination.

Signed……..…… Date……...

Peter Mwau Manyenze

D63/87789/2016

This research paper has been presented for examination with my endorsement as the University Supervisor.

Signed ……Date ……

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DEDICATION

This project is devoted to my spouse Purity Kaari Kanji for her adoration, backing and support during the whole term of this course. Further commitment is to my parents Cyril Manyenze Muvunga and Elizabeth Nzisa Manyenze for their sacrifice in teaching me and for showing me the importance of being diligent when I least knew the world. Lastly I devote this work to my kids Ethan Mutua Mwau and Mwau Manyenze (Jnr.) and it's my prayer that this will be an acrid inspiration for hard work when they become of age.

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LIST OF ABBREVIATIONS

ATM	Automatic Teller
CBK	Central Bank of Kenya
EFT	Electronic Teller Machine
IT	Information Technology
KPIs	Key Performance Indicators
MFI's	Micro-Finance Institutions
NI	Net Income
PBT	Profit Before Tax
POS	Point Of Sale
ROA	Return On Assets
ROE	Return On Equity
SACCO's	Savings and Cooperative Societies
SAP	Structural Adjustment Programs
TAM	Technology Acceptance Theory

ABSTRACT

In the current world of cutthroat Competition, it is essential that business decisions lead to a better competitive advantage rather than just a transformation from the traditional way of doing things. Commercial banks in particular and especially in Kenya are operating in a competitive advantage which has been compromised by the current capping of interest rates limiting banks' freedom of pricing and thus levelling their playing ground. The levelling of the playing ground has led banks to a situation of less freedom and increase in competition but it has been argued by the policy makers that it is for the good of the economy in general. Considering that banks are investments for individuals and also that they hold peoples wealth in form of deposits and the many services they offer to the economy, banks' financial performance plays a centre role in the economy. As part of their endeavours to be competitive, banks have advanced in technological use through technology driven operations. Some of these include the use of ATM machines, use of credit and debit cards, operation of POS systems, adoption of mobile banking, and use of mobile lending among other innovations. These innovations have been argued as advantageous in some ways like saving on costs but this study has evaluated their relevance as far as financial performance is concerned. The study evaluated the use of credit card through the number of transactions, POS transactions, number of agents and also the number of mobile payment transactions. The study has found a positive impact on financial performance by the number of credit card transactions and the number of mobile payment transactions. This suggests that banks can advance on their performance by emphasising on those two technological innovations. The study also found that number of POS transactions and the number of agents affect financial performance as measured by profits made negatively though insignificant. The study suggests that the banks be more cautious when using the two innovations to avoid affecting the financial performance of their enterprises negatively.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

For commercial banks, innovation has been viewed as the show of creation and development of different budgetary instruments, establishments and advancements of markets creation of better ways to access trade and information. (Solans,2003) argues that innovations not just important for firms in the banking field but have impact on various associations and other business players by allowing them to boost the aggregates capital base at a relatively lower cost as compared with other markets and which can save a lot in a strangling economy. As argued by Nofie (2011), Advancement(s) is the arrival of another or better thing just as a strategy that cuts down the cost in conveying/accessing the existing product in the financial industry.

This study was based on three theories; that included; Innovation Diffusion Theory, Resource Dependency Theory and Technology Acceptance Model. Based on the theory of innovation diffusion, the kind of basic leadership set up for execution of innovations is a key framework to uncover as discretionary and/or aggregate and unexpected improvement options. Roger's proposition doesn't uncover how the conditions of associations are required to be in a typical working condition all together for the proposition to work well, (Lundblad & Jennifer, 2003).

Technology Acceptance Theory is concerned with aligning the innovation section of any organization being a referral of a combination of a number of factors but overlooks different dimensions of clients like their social condition. In practice, imperatives like insufficiency of capacity, lack of time, ecological and/or the hierarchical organization of confinement and insensible practices may constrain an

opportunity to take chance. A study conducted to determine the acceptance of the internet banking by clients found out that trust positively influences a client's willingness to participate in any online exchange of money and personal information (Wang et al. 2003).

Resource dependence hypothesis rides on the notion that every market has inadequate opportunities and institutions rely on these resources for their survival. Since institutions do not have control over the inadequate resources, there is alot of uncertainty in operations of such firms. Firms are therefore required to develop plans for proper use of such resources to ensure their survival and that of other firms.

In view of the review, it is clear that the field of bank innovations has been performed however not in a wide extension. From research, we can unmistakably observe scientists focused on a couple of factors of developments notwithstanding the way that the investigation covers numerous significant factors that were forgotten in past research, for example; electronic finance movement platforms.

From study of important writing, thinks about explicit to Kenya in the line of money related developments and execution of commercial banks are not many and they neglected to catch directing factors. This research consequently made an exploration hole.

1.1.1 Digital Innovation

Innovation involves organizations planning new things or new creation methods to improve their exercises, these the new things could be establishment of new methodology (Lawrence, 2010). For financial business, innovation has been defined as the show of creation and development of different budgetary instruments, establishments and advancements of markets creation of better ways to access trade and information.

(Solans,2003) argues that innovation is not just important for firms in the banking field but have impact on various associations and other business players by allowing them to boost the aggregates capital base at a relatively lower cost as compared with other markets and which can save a lot in a strangling economy.

As argued by Nofie (2011), Advancement(s) is the arrival of another or better thing just as a strategy that cuts down the cost in conveying/accessing the existing product in the financial industry. Akamavi (2005) further observes that innovation in banks has provoked continuous fundamental changes including; de-regulation, increased competition, more prominent costs associated with development of new things and rapid mechanical improvement. Another principal perspective during the time spent giving budgetary administrations has been the growth in data innovation and correspondence (Heikkinen & Korhonen, 2006). According to Hamilton, Nigel and Adrian (2007) the capacity to receive information and work them out has propelled professionals to think of more advanced money related things which separates and repackage different types of monetary hazards.

These latest events can be orchestrated near the requests and threat inclined to investors and borrowers and henceforth helps in the status of money related markets. The procedure of advancement has been encouraged by the electronic access to data on monetary and money related improvements and on market trend. Gorton and Metrick (2010) wholes up the outcomes for the advancement of current budgetary development as; decline in liquidation costs, decline in good risk, charge favourable circumstances and straightforwardness.

The region additionally makes a simple method for developing and broadening business hazard by beginning to think of numerous imaginative undertakings which

are fundamental in business (Corrocher, 2006). Anbalagan (2011) established that issues related to money transaction innovations are driven by upgrades in computer hardware and the media of transmission as well as the contents that for the bigger majority the production of the ATMs was arguably the most prominent monetary advancement than resource upheld securitization. Money related advancements have come about to a bending in the process through which the financial business and exchanges are completed as found by Zhengzheng (2010) who uncovered in an exhibit, the proof that most commercial banks in China connected to move from the conventional business activity mode; which incorporated the discount of credits to the retail mode because of mechanical developments.

In India, it was found out by Pooja and Singh (2009) that practice of internet banking gave extra benefits in commercial banks and other miniaturized scale banking ventures. Utilization of Information Technology [IT] in Kenya has come about to sufficient use of work force resources, improved incomes henceforth making it simple access money related administrations by countless individuals (Mwania & Muganda, 2011). As indicated by Ndung'u (2011) four mobile administrators have accomplished more than 15 million administrators which has come about to lower cost of exchange to money related administration industry. These developments has presented various challenges to the regulator and even the banks themselves. The barrier to supply of money related products and the enormous amount of hazard concentration, moving within and across borders has exceeded the interconnections in the worldwide monetary space (Nigel, Penalver & Nicholas, 2008).

The same has led to an increase in the framework's multi-layered nature related to progress of monetary space. This presents challenges in budgetary foundations and experts have been accused for holding up money related stability (Penalver, Nigel &

Nicholas 2008). This instrument of organized fund grow so fast that even the market foundation and framework is found unprepared when such instruments are under pressure (Mark, 2010).

1.1.2 Financial Performance

This can be considered as the act of calculating results of an organization's policies as well as its operations on monetary standings. It is a gauge of organization's aggregate financial strength in a given time frame (Ng'ang'a, 2017). These can be used as comparison too with related firms within the same industry or across sectors. Firms' interested groups like managers, owners, suppliers and the government seek to answer vital questions such as what is the financial status of a firm at a given time, Or Comparison of comprehensive income level of the specific organization for a certain period of time.

These matters can be dealt with by doing a good analysis of firms' financial statements over a given period of time. It may show a position of a period of time as in the case of a statement of financial position, or may reveal a series of activities over a given period of time, as in the case of an income statement. The statement of financial position on its part shows financial soundness (condition) of a firm at a moment in time (Musila, 2015). The profit and loss statement reflect the performance of the firm over a period (business incomes and expenses in a specified time period, summarized by either net profit or loss of a period). The financial statements may not show clearly all-important information associated with financial operations of an entity. Nevertheless, it can provide some useful data, which brings out some key factors like the level of profitability and the financial viability of a business.

Financial analysis involves analysing of financial reports with the aim of doing full analysis to determine financial viability and profitability of a business concern. A financial analyst undertakes to analyse a firm's performance in terms of its profitability, liquidity, working capital, fund flow, fixed assets and social performance. In doing such analysis, interests of various stake holder groups is usually taken into consideration (Abshir & Nagib 2016). Different stakeholders are interested in specific ratios for example shareholders may be interested in the business cash flow, capital structure ratios and future profitability projections.

According to Walson *et al.* (2001), Management on their part are usually interested in internal control, favourable financial situation and better performance in the bottom line as well as handsome pay (Agency theory). Trade creditors are curious of the liquidity of a firm and any investor(s) will critic and make investments decisions based inter current and projected future benefits together with earnings growth.

1.1.3 Digital Developments and Company Financial Performance

This study intended to expound and show how the independent and dependent the two variables are intertwined and the level of which the current wave of innovations are heavily driving the performance of commercial banks and generally how technological changes were driving the markets and subsequently the world in general. Digital innovations strategies are developed by use of a few basic methods such as increasing or reducing risk, consolidating risk, rotating income avenues, dividing income streams and restructuring long-term obligations into short-term ones. Mostly research on innovation focuses on new ideas but what's important is its adoption and spread of innovations and their adoptions across the industry. Without a doubt, quicker dissemination implies a higher social profit for the fundamental interests in the advancement (Walson *et al.,* 2001).

Development methodology is a determinant of bank money related execution and gives extra knowledge into the circuitous commitment of the individual elements of advancement methodologies to banks execution. A commercial bank financial performance is generally estimated using financial ratios, analysis, and benchmarking, estimating execution against spending plans or a mixture of these systems. The normal presumption which supports a significant part of the financial study and argument is that expanding financial profitability will prompt improved capacities and exercises of the institution. It is believed that a bank financial performance depends on three key principles which are an institution's size, its asset management and the operational efficiency (Bijker *et al.*, 2007).

Largely, financial innovations influence the nature and composition of money related aggregates through new monetary inclusions or changes in old instruments just as the terms and conditions of debt or credit plans. However, financial innovation comes with risks such as systematic risk. Industries always produce a variety of new services with the hope of earning higher profits and they may overlook the risks involved. Innovations of new products starts with a few players then very fast its spreads across the industry. It’s important for the regulator to prepare for system-wide outcomes resulting from the new innovations. This therefore means that for banks to meet their objectives they have to innovate frequently or else they would have to shut down due to tough competition (Mudibo, 2005).

1.1.4 Kenya Banking Sector

Commercial Bank can be defined as an institution that provides fundamental stock products like a savings account, current account, etc to a person and a corporate. Together with that, it avails an array of financial services to the general public such as deposit taking, lending of money and financial advisories to its clients.

In Kenya the monetary division advancement can be divided in three stages Njoroge, Misati, Ouma and Kamau (2010). Stage one was during the 1970s to 1980s. As of now, the money related industry was incredibly commanded by the financial area, which was included by suppression in fund. The administration played out a noteworthy undertaking in offering credit to ventures by applying direct things of fiscal strategy, for example, conversion standard control (Misati *et al.*, 2010). Stage two started on Structural Adjustment Programs (SAP) and the progression of strategies late 1980's and mid 1990's. During this period, unwinding of financing costs, swapping scale and capital records controls were seen. The banking sector in the Kenyan economy was controlled by CBK Act and also Companies Act, (Pwc 2008) and the Banking Act. The financial business has dependably been a key column to the accomplishment of vision 2030.

By 30 June 2018, the banking industry in Kenya had 42 fully fledged commercial banks, One mortgage company, 13 MFIs, 3 CRBs, 9 representative offices together with 74 FX bureaus (CBK, 2018). Business in Kenya has experienced different shifts over the most recent years. Njoroge, Misati, Ouma and Kamau (2010) for example, points out that exercises and authoritative procedures are rising well, hence balancing out financial conditions which rises as an enormous change in banking industry on account (CBK, 2018). The number of banks diminished from 1,541 in 2016 to 1,518 in 2017, which meant a lessening of 23 branches. Nairobi County enlisted the most noteworthy diminishing in the number of branches, by 14 branches, revealing an aggregate of 13 out of 47 counties enrolled an abatement in the number of banks. The decline in physical banks development is mostly ascribed to the selection of elective conveyance channels, for example, mobile banking, web banking and organization banking. ATMs diminished by 216 to 2,617 by April 2019.

Client deposits were the principle wellspring of subsidizing for the financial part, representing 74.1 percent of all out liabilities as at end of June 2018, which was higher than the 72.3 percent recorded as at end of June 2017. The deposit base expanded by 10.5 percent from KSh2.86 trillion in June 2017 to KSh 3.16 trillion in June 2018.

Client deposit development inside the period was upheld by: -Use of mechanical developments for deposit assembly - The quantity of commercial banks deposit accounts expanded by 4.5 million (10.1 percent) from 44.4 million in June 2017 to 48.9 million in June 2018. The new records were opened through the cell phones.

Agency banking model - The quantity of exchanges through bank operators expanded by 103 million exchanges from KES 517.4 billion in the period ended June 2017 to KES 620.6 billion in the year finished June 2018. Aggressive deposit assembly methodologies by a few banks to expand their store levels.

1.2 Research Problem

No matter the incredible utilization of budgetary development in expanding the banking industry, the aftereffect of advancement of execution, it remains a bad dream with regards to comprehension for net worthy reason(s), for instance there is a small understanding of the motivators of development and also consequences of advancement on banking execution stays unexplainable (Mabrouk & Mamoghli, 2010). Franscesa and Claeys (2010), and another study by Mwania and Muganda (2011) created different outcomes relating to the consequence of budgetary advancements in bank execution.

Pooja and Singh (2009) found that innovations in finance had little impact on bank execution. These findings were later echoed by Franscesa and Claeys (2010) but were

in contradiction to an earlier study done by Batiz-Lazo and Woldesenbet (2006) and a later one conducted by Mwania and Muganda (2011) reasoned that monetary development had noteworthy commitment to bank execution. This contradiction in past studies has led to a necessity for an investigation in Kenyan setting to unearth the exact relationships of the variables under consideration. In Kenya, commercial banks have continuously expressed interests in innovative disruption and have even prepared their labour to deal with such innovations.

In view of the review, it was clear that the field of bank innovations has been performed however not in a wide extension. From research, we can unmistakably observe scientists focused on a couple of factors of developments notwithstanding the way that the investigation covers numerous significant factors that were forgotten in past research, e.g. electronic finance movement platforms. From study of important writing, thinks about explicit to Kenya in the line of money related developments and execution of commercial banks are not many and they neglected to catch directing factors. This research consequently makes an exploration hole.

The goal of this study was to come up with a concrete answer of; Do bank innovations lead to positive effect on total revenues of commercial banks in Kenya?

1.3 Research Objectives.

This study intended to determine if financial innovations have any effect on financial performance of commercial banks in Kenya.

1.4 Value of the Study.

Commercial banks in many parts or entire Africa gets to know of this study and venture on the technology that they can multiply in their banking industry in order to add value on their developments by informing them on the innovation with

better financial line. This research help the government of Kenya as it looks to venture in innovation to develop the bank industry while enabling easy reach of funds and financial inclusion. Following the exploitation of the research, the Kenya government can easily understand the areas of technology are fit in sustenance of the financial sector through advancement of both monetary and fiscal incentives.

This study was carried out on all the Kenyan banks. Some of the innovations currently under use included debit cards, credit cards, ATM machines, POS terminals, internet and mobile banking as well as EFT. Due to magnamity of regulation, this study was only restricted to innovations in core banking sector and hence did not have a chance to study other financial sectors which includes Insurance firms, MFI's, SACCO's, Pension/retirement schemes among other crucial banking parameters. Another hindrance factor was the inability of some respondents to respond appropriately.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A theory is a collection of statements, upheld by proof intended to uncover a phenomenon. Theories uncover an assortment of elaboration to a case. A researcher ought to comprehend theories in his/her studies (Smyth, 2004; Kombo & Tromp, 2009). This type literature review helps in; assessing the measures intended to be taken on certain factors (Trochim, 2006; Aguilar, 2009; Tormo 2006). Along these lines, the hypothetical writing empowers the researcher see the factors of the project.

2.2 Theoretical Review

Theories are employed at this stage to enable a researcher to come up with a clear-cut study based on the research problem. At this area I looked at the Technology Acceptance Theory (TAM), Innovation diffusion hypothesis and the Resource Dependency Theory

2.2.1 Innovation Diffusion Theory.

According to Rogers (1983; 2003), relative similarity, preliminary capacity and discernibleness is a portion of the central point affecting diffusion of innovation. These components are not fundamentally unrelated hence not ready to tell the degree or the rate of development dissemination. The three development highlights; alternatives, similarity, and trial ability, which are obtained from Rogers (1983). The fourth component which is, usability, is a close substitute to Rogers' multi-layered nature. It is imperative to comprehend both comparative a spot of flexibility and appropriate as abstract highlights. This is because they can be considered distinctively depending on a person's perspective.

This theory helps us understand the kind of basic leadership set up for execution of innovations is a key framework to uncover as discretionary and/or aggregate and unexpected improvement options. Roger's proposition doesn't uncover how the conditions of associations are required to be in a typical working condition all together for the proposition to work well, (Lundblad & Jennifer, 2003).

In particular, this hypothesis begin by expounding the development choice procedure inside an associations, however neglects to disclose to the furthest end the tendency of how the highlights of an progression sets to impact its reception in associations. According to Lundblad and Jennifer (2003), these provide a trail of tracking the significant holes in this theory.

2.2.2 Technology Acceptance Theory

In this model, grasping and utilization of new innovations are enormous as it may be evidenced on the concentration on mechanical issues as per the advancement by (Davis, 1989) progresses the Technology Acceptance Theory (TAM). The model takes a gander at the people's social goals and use of information communication technology. It has been recommended however, that genuine character of any person can be estimated by his deliberate conduct to utilize, which is thus impacted by his/her frame of mind toward and anticipated convenience of the innovation. Anyway, frame of mind and expected convenience are both dictated by usability. Embracing this model needs a comprehension based on the consumers' prerequisites in relation to the level of convenience for their use and how it is easy to use them end-client's prerequisites with respect to convenience and ease of use (Pedersen *et el*, 2002). In this model, utilization together with the kind disposition of any application influences clients' frames of mind towards any usage. It was recommended by Davis (1993), that

it is very important that we examine client prerequisites dependent on expected value occasioned by how it is easy to use the innovation as opposed to the target measure.

Analysis in TAM is concerned with aligning the innovation section of any organization being a referral of a combination of several factors but overlooks different dimensions of clients like their social condition. In practice, imperatives like insufficiency of capacity, lack of time, ecological and/or the hierarchical organization of confinement and insensible practices may constrain an opportunity to take chance. A study conducted to determine the acceptance of the internet banking by clients found out that trust positively influences a client's willingness to participate in any online exchange of money and personal information (Wang *et al.,* 2003)the normal convenience as well as the expected helpfulness developed the acceptance as a major in acknowledging and utilizing ICT.

This acceptance may however not clarify one's behaviour towards recently developed ICT platform e.g. web banking. When using the model as a hypothetical structure as advanced by, Wang *et al.* (2003) presents "anticipated credibility" significantly important factors which may reflect how the clients are protected and secure in relation to web banking. The impacts associated with PC especially in respect of self-convenience as opposed to the objectives established in respect of web banking as per the views of (Wang *et al.,* 2003). The outcomes unequivocally aid all-encompassing such models in forecasting the expectations of consumers when embrace web banking while still showing the critical importance of PC self-competence on social expectation by anticipated convenience, anticipated helpfulness, as well as anticipated level of validity.

2.2.3 Resource Dependency Theory

Viability of this theory is discussed as follows: "The viability of an institution is its capacity to make adequate results and activities" (Pfeffer & Salancik, 1978). Resource dependency theory shows mostly through outside resources of an organization mostly depending on the size of the organizational base of assets and how focused they are using these assets, firms exploit their existing resources especially during the hardship times in the market to support their market growth, for instance in Pakistan, the emergency of intensive few firms which ended up making their own capacity to maintain a strategic distance from any power lack, so firms consistently tries to exploit their assets so as to gain competitive edge and hold to their continuous market viability.

Resource dependency hypothesis operates on the assumption that each market has constrained chances and organizations depend on these assets for their survival. An absence of command over these assets makes vulnerability for firms working in that condition. So, establishment ought to have a few intends to utilize these assets appropriately, which are likewise being required by different firms, so as to ensure their very own market share retention. According to Scott (1998) contends that, there is edging management of such resources may debilitate administrative conclusion, meddle with the accomplishment of institutional objectives, and at last undermine the presence of the central organization. In Pfeffer and Salancik (1978), study shows that the fundamental attributes of situations can be concentrated, the degree to such capability and specialist in nature are generally spread, the plenitude of significant assets as well as the exact number, for example the linkages, or associations, existing between different organizations. In a similar manner, resource dependency theory possesses a suggestion that firms' choices mostly rely upon the externally controlled

phenomenon determined by the surroundings which may be controlled by the nature since firms are subject to nature for assets they ought to have a type of techniques that can enable them to secure these assets. After experiencing the writing that is exceptionally tremendous for resource dependency presumption, it makes sense that there exist a number of factors that can impact the degree of reliance on the organizations on outer assets which are generally in scarcity in the organizations individual condition. These factors may include significance of the asset to the firm which can be considered significant when deciding on the asset reliance of the firm. The other factor which may be considered is lack of the asset which may have other associated costs. The scarcer the resource is exposing the organization to higher level of dependence which means exposure to other factors in the market and more so the challenge of being in a position to control the asset in the future. Together each the elements can impact the degree of reliance that an organization shall be experiencing on getting access of asset and enhanced techniques on every one of these elements which can generally enhance association's proficiency and execution in general.

2.3 Determinants of Performance of Commercial banks

Determinants of performance which includes; mobile banking transactions, automatic teller machines usage, Internet banking and Agency banking presents an array of income channels, commercial banks are employing to maximize income. This is presently uncontrolled over the general population and private segment of different industrialized nations (Williams, 2003). The responsible players connected in this strategy, key performance indicators (KPIs), have been examined to give out knowledge as favourable information on all types of organization's exhibition (Williams, 2003). Specialists have uncovered that execution estimation framework have a huge representative worth (Meklin, 2006)

Hincu and Cicea (2009) expressed that commercial banks are delegated centres of credit in any developing economy. Gainfulness gives data on the capacity of the bank to hazard and extend its action. Real markers connected on the financial productivity incorporate: Return on Assets, Return on Equity and the pointer of money related influence.

2.4 Empirical Studies

This review is an inquiry of distributed errands, periodicals and books, Zikmund *et al.*(2010), which explains hypothesis and brings into reality the observational information which are obvious to the current point. In accordance with their literature review therefore is a wide study of existing researches done.

In banking industry, the point of a bank is a guarantee that it assembles assets from the customers at the least expensive cost; that is, purchasing the assets, make something out of the cash purchased with a point of creating benefit (Dew, 2007). Monetary innovation upgrades associations from different enterprises to make cash in enormous sums and requiring little to no effort than they could somewhere else (Lerner, 2006). The other fundamental bit of leeway from e-banking innovation is charge of base pay (Dew, 2007). For instance, a bank can charge a fee on non-customer clients who utilize the services of their ATMs or even through outsiders who collaborate with the bank. This results to an increase in expense-based fees obtained as the bank deals more with outsiders. This forces banks to advance in their E-banking services by use of mobile based technology. As a consequence, joining a specific ATM system will likewise make client familiarity with that bank and impact the piece of the overall industry (Iftekhar, Schmiedel & Song, 2009).

Schmiedel, Hasanand and Song (2010) plainly uncovered an exhibition of multi-channel financial institution versus conventional institutions in Italy. Advancement seems to influence banks positive execution (cost decrease), saw as far as ROA and ROE. This costs reduction lifts the activity of banks within one-year preceding appropriation in ROA, the following three years regarding ROE. DeYoung (2005), this examination is evidence that the mobile and internet had been used more as a convenient substitute of the brick and mortar outlets, recommending the predominance of multi-channel banking system.

Impact of cell phones has been emotional especially in Africa, as evidenced by the phones becoming the primary current communications and broadcasting platform. Mobile technology has significantly reduced communication costs, while helping people and firms to exchange data faster and with reduced cost. Previous researches have shown that decrease in operating expense brought about by mobile technology have led to significant advantages like financial gains, improved farming, increase in advertisement effectiveness and better customer satisfaction.

According to Jensen (2007) mobile technology in Africa advanced to administration conveyance stages. Similar conclusions were also reached by (Aker, 2008; Aker, 2010; Klonner & Nolen, 2008). This has pushed the upgrading of cell phones from one that essentially reduces the communication and coordination of expenses to one that changes to creative applications and administrations. As indicated by Aker & Mbiti (2010), cell phone inclusion, administration, cost of administration and entity execution are related in many ways. In business sectors with constrained challenge, benefit boosting firms to offer increasingly restricted administrations at more expensive rates.

Islam, Mahjabin Rayhan and Sohel, (2012) in their investigation about portable banking as per the case of Bangladesh which presumed mobile technology banking does offer the possibility to broaden minimal effort virtual financial balances to countless as of now people not enrolled in the banking system. Mobile technology upgrades the capacity of electronic financial answers to clients which is considered an improvement in area of administrations effortlessly. Portable banking is constant on-line banking, which is accessible whenever and wherever through the entire nation, it is advantageous, reasonable and secure and thusly it is substantially more compelling in creating reserve funds propensities and subsequently prompting increment in bank stores. Cell phone likewise made banking easy and propelled instalment exchanges at reasonable expense. The gains of cell phones are that portable systems can achieve remote zones requiring little to no effort both to the buyer and the bank.

2.5 Conceptual Framework.

The set of expansive philosophies and ideologies borrowed from related areas of interrogation and applied to formulate a reasonable appearance (Kombo & Tromp, 2009). This is then an investigation instrument which aimed at helping a researcher develop acceptance and awareness of any situation under examination. A conceptual framework can also be very important in creating a meaning to successive results and thus becomes a very important to any researcher. According to Smyth (2004) a conceptual framework helps in identifying and formulating relationship among variables under study. In this study, a conceptual framework helped in illustrating the connection between innovations and commercial banks financial performance. The relationship is as shown in the diagram below.

The diagram shows that bank innovations impact on profitability, return on assets and net incomes of commercial banks which are indicators of a business financial performance.

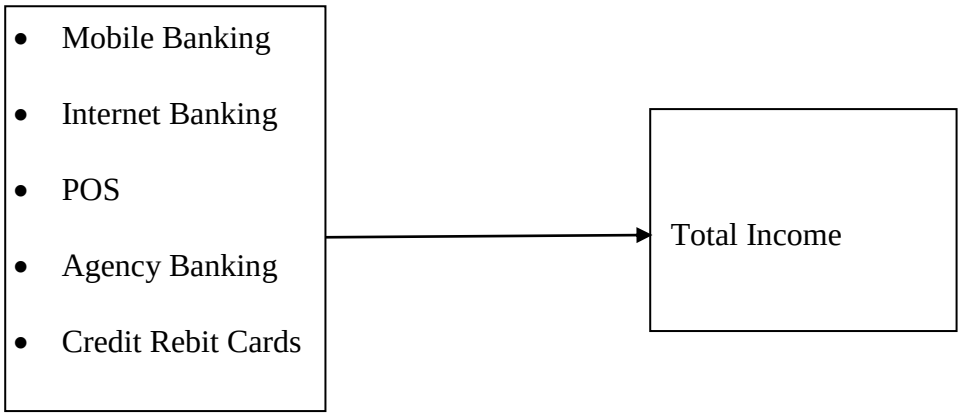

Figure 2.1: Conceptual Framework

2.6 Summary of Literature Review

Conclusions of par studies done by scholars have had diverging statements on the exact relationship between innovations and profitability and thus financial strength and performance of any entity. A study by Schmiedel and Song (2009) found a positive relationship between the two critical studies. The same findings were supported by those of Nadia, Anthony and Scholnick (2003) and also those of (Nofie, 2011; Malhotra & Singh, 2009). Their findings were however contradicted by later findings by Akram and Allam (2010) and Nader (2011) who discovered a negative effect on the bank's financial performance indicators by the innovations. The mixture of results and options from diverse countries and from authors is mostly occasioned by lack of conclusive analysis of several improvements and performance indicators. This paper sought to adopt a different angle from previous studies and fit in several revolutions and their outcome on numerous bank performance pointers. There is also biased of innovation-performance studied on net incomes and mostly in developed and

growing economies leading to scantiness of innovation performance literature for Kenya to be precise. The researcher intended to answer these questions conclusively by carrying out this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives a brief overview of the Data collection methods, instruments and procedures applied in the study to analyse data on population target and study sample with a view to arriving at concrete conclusions. Research methodology is described as a part that must elaborate technical methods in a way necessary for the audience as revealed by Zikmund, Babin, Carr and Griffin (2010).

3.2 Research Design

A research design was described by Kombo and Tromp (2009) as a survey from a general research point, the literature and plan of strategies. Lavrakas (2008) denoted that determination of a suitable research arrangement depends on; the factors, idea of the investigation questions and assumptions, the example, settings, the information accumulation techniques and the information examination approaches. Therefore, a research design should be taken as an elaborate structure which highlights the techniques for research from the kind of research questions and speculations to the findings of the research discoveries. In concocting any examination, the researcher has to grasp the fundamental steps in the research process which then secures the different types of the research layouts. Lavrakas (2008) illustrates an illustrative study of research structure as an orderly research method of obtaining information from a representative sample of a population by utilizing tools made from closed or potentially open-ended questionnaires, observations, and interviews.

3.3 Population

As argued by Kothari (2004), a population should conform to all things in any field of study and can otherwise be called the 'universe'. The same view is held by (Zikmund *et*

al., 2010). The objective of population study was at two dimensions which are the data collection as well as data analysis. The scope of the population covered all commercial banks incorporated in Kenya. Good examples of the same are the Kenya commercial bank, Equity bank, Cooperative bank of Kenya, Barclays bank of Kenya (Absa) and Standard Chartered bank.

3.4 Data Collection

Information was obtained from reports submitted to the CBK, KNBS and the Banking review manuals. Auxiliary research information includes the information gathered utilizing data from information that different specialists have made of a subject Dawson (2009).

3.5 Data Analysis

The data gathered by the different data collection methods is somehow wide and research questions and theories can't be replied with straightforward examination of numeric data and consequently information should be restructured and manipulated well for it to be possible to make constructive conclusions on the same.

Quantitative data is generally breaking down through factual strategies. Measurable investigation spread a wide scope of styles, from basic methodology that we normally utilize like figuring a normal to more profound and advanced techniques. Although few techniques are computationally imposed, the mode of measurable tests is moderately simple to handle, and PCs have disposed of the need to get impeded with itemized scientific tasks (Polit & Beck, 2003).

The analysis utilizes different methods to test the worthiness of the various factors (mechanized teller machines, charge cards, Mastercards, P.O.S, portable banking, web banking and electronic finances move) on the reliant factors (NI, PBT, ROA and

Deposits mobilization). Faraway (2002) has stated that various direct breakdowns are useful in situations where the quantities of free factors are multiple. As per International Business Machines (2010), the presumptions of straight breakdown must be accomplished by the data to be interrogated though the coefficients should be direct in nature, and the reaction mistakes ought to pursue an ordinary curve and the mistakes ought to have a usual curve.

Regression is a tool for examining the relationships of variables in a given set data. On this research several regression equations would be used for testing of the significance hypotheses of this study.

To establish if innovations in banks affect total income, and thus its performance in financial terms of listed commercial banks in Kenya. Multiple linear regression equation is used to confirm if bank innovations can affect the total income of commercial banks.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_{5+} \varepsilon$

Where;

Y= Total income

β_0 =constant or intercept

β_1

β_2

β_3 corresponding coefficients

β_4

β_5

X_1= Mobile banking transactions

X_2=Number of Automated Teller Machines transactions

X_3= Agency banking transactions

X_4= Frequency of POS's transactions

X_5=Level of Internet Banking

ε = Error term. This term represents the residual or values not captured within the regression model but which was found to affects the financial performance of the banks under study.

The interpretation used in interpretation of the X, β and ε remained the same across the different equations for the testing of the subsequent equations used for evaluating the other study objectives. Interpretations were stated above.

3.5.1 Diagnostic Tests

According to Polit and Beck (2003), the purpose of any pilot test should be more leaning to testing of the procedures as opposed to testing of the research hypothesis. They also noted that data collection apparatuses together with sample collection strategies and other aspects of a study in preparation for a wider study should also be tested. The study used questionnaires which were authenticated by interrogating them with other senior managers selected at random from each of the banks. Their views were weighed and integrated to enhance content and to construct validity of the questions answered. Dependability was on its part tested by use of secondary data which was tested with randomly selected banks which was not included in the final study sample. This was done with the intent of avoid a bias in the responses just in case they were to complete the very same questionnaire two times.

According to Cooper and Schilder (2011), 5 to 10% of the target sample should form part of the pilot test.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter introduces the research findings for the effect of digital innovations on the financial performance of commercial banks in Kenya. This research was conducted for a period of 11 years and utilized quarterly secondary data from the financial statements of listed banks in Kenya. Data was first summarized using Microsoft excel to obtain the descriptive statistics and then data validity and regression was done using Stata software version 14.2. The quarterly data was collected for the period between the fourth quarter of 2008 and the second quarter of 2019. The chapter brings to light the response rate, data validity, summary of descriptive statistics and regression analysis results.

4.2 Response Rate

Data was collected from 11 listed firms and the data was readily available from the central bank of Kenya reports and the individual companies' reports to the shareholders. Data collected varied in terms of the availability as the quarterly reports are not a statutory requirement. Response rate for financial performance was 69.48%, 93.02% for both the average number of credit card transactions and the average number of POS transactions. Response rate for both the number of mobile banking transactions and the number of agents was 100%. With the lowest response rate for the variables being at 69.48%, the researcher considered the data as adequate and enough for regression and use of its regression results for making of conclusions.

4.3 Data Validity

Before regression, data was tested for linearity by plotting graphs and a line of best fit generated a curve for all the variables. As a result, the researcher used natural logs of the values which showed a linear relationship. The data was also tested and found to be free from heteroscedasticity using the Breush-Pagan test. Multicollinearity was also tested using the variance inflation factor. While the credit card transactions and the number of point of sale transactions showed low levels of multicollinearity, the number of mobile payment transactions and the number of agents showed high levels of multicollinearity at 92.09 and 51.92 respectively. The existence of this multicollinearity was corrected by eliminating the number of mobile payments from the regression analysis.

The data collected was also tested for autocorrelation using the Breush-Godfrey test. The data was found to be free from autocorrelation with a Chi^2 of 0.0000.

Table 4.1: TBreush-Godfrey LM test for autocorrelation

Lags(p)	**Chi^2**	**df**	**Prob>chi^2**
1	0.000	1	1.0000

H0: no serial correlation

Another test done with the aim of looking at data validity was the test for stationarity. This was tested using the Augmented Dickey Fuller and was found to be free from it. Test for omitted variables using the Ramsey Reset Test was done and the data was found not to have some omitted variables.

Ramsey RESET test using powers of the fitted values of FPlog

Ho: model has no omitted variables

F(3, 32) = 0.62

Prob> F = 0.6080

4.4 Descriptive Statistics

In the quarters under consideration, the average quarterly profit if 4.08 billion with a standard deviation of 2.18 billion and a minimum and maximum profit of 802 million and 7.18 billion per quarter. Number of credit card transactions have a minimum and maximum value of 7,199 and 18,890 transactions respectively. The mean number of credit card transactions is 12,107 per quarter with a standard deviation of 3,763. Average number of POS transactions is 1,577 with a standard deviation of 622. The minimum and maximum number of POS transactions is 317 and 3,012 transactions respectively.

The other variables under the study were the number of mobile banking transactions and number of agents. The mean number of mobile banking transactions were 5,081,529 with a standard deviation of 3,058,900 and a minimum and maximum number of 601,679 and 10,300,000 transactions respectively. Average number of agents was 2,416 with a minimum and maximum number being 135 and 5,043 respectively. The standard deviation for the number of agents is 1,463.

Table 4.2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
Average profit (000,000)	43	4,080	2,180	802	7,180
Average number of credit card transactions	40	12107.04	3762.659	7198.978	18890.42
Average number of POS transactions	40	1576.856	622.1399	317.0889	3012.422
Average number of mobile banking transactions	43	5081529	3058900	601679.1	10300000
Average number of agents	43	2416.341	1463.362	135.64	5043.49

4.5 Correlation Analysis

Analysis of the variables under study shows existence of correlations between them and more specifically between the independent and the dependent variables. The most correlated to the financial performance is the number of mobile banking transactions followed by the number of agents, number of credit card transactions and the last is the number of POS transactions in that order. The correlation for the mobile banking transactions, , number of agents, number of credit card transactions and the number of POS transactions is 59.54%, 57.13%, 54.81% and 31.59% respectively.

Table 4.3: Correlation Analysis

	FPlog	CCTlog	POSTlog	MBTlog	NOAGNT~g
FPlog	1.0000				
CCTlog	0.5481	1.0000			
POSTlog	0.3159	0.7053	1.0000		
MBTlog	0.5954	0.9558	0.7919	1.0000	
NOAGNT~g	0.5713	0.9363	0.7580	0.9892	1.0000

4.6 Regression Analysis and Hypotheses Testing

The results of the ANOVA in the table below show that the model if fit to predict the relationship between the variables as predicted by the P value (0.0047) which is less than 0.1 and thus significant. Also as shown by the adjusted R-squared, only 26.59% of the changes in the financial performance of commercial banks can be explained by the number of credit card transactions, POS transactions, mobile payment transactions and the number of agents.

Table 4.4: Hypothesis Testing

Source	SS	df	MS	Number of obs = 40
				F(4,35) = 4.53
Model	5.11269327	4	1.27817332	Prob>F = 0.0047
Residual	9.87278929	35	.282079694	R-squared = 0.3412
				Adj R-squared = 0.2659
Total	14.9854826	39	.384243142	Root MSE = .53111

The regression results tabulated below shows that both the number of credit card transactions and the number of mobile payment transactions impact positively but insignificantly on the financial performance of commercial banks. The results also show that the number of POS transactions and the number of agents impact negatively but insignificantly on the financial performance of commercial banks as shown by the coefficients and the P values of the regression results.

Table 4.5: Regression Analysis

FPlog	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
CCTlog	.1193983	.9645913	0.12	0.902	-1.838826	2.077623
POSTlog	-.5156167	.3756675	-1.37	0.179	-1.278262	.2470289
MBTlog	1.384451	1.269362	1.09	0.283	-1.192491	3.961393
NOAGNTSlog	-.611074	.8761736	-0.70	0.490	-2.389801	1.167653
_cons	8.114465	7.727109	1.05	0.301	-7.5724	23.80133

4.7 Discussion of Research Findings

Study findings show that the number of credit card transactions impact on the financial performance of commercial banks positively though insignificantly. This may be explained by the charges and the efficiency which comes use of credit facilities offered. Since the service is also available to credit worth customers, there is more success in it generating revenue and thus impact positively on the financial performance of commercial banks.

The study results also show that the number of mobile payment transactions impacts on financial performance positively but insignificantly. This can be explained in terms of the fees charged which boosts on the financial performance of commercial banks while at the same time relieving banks time and resources due to the self-service of the customers using the platform. Savings and the efficiency of transacting even beyond the bank opening hours increases revenue and also encourage savings and uptake of credit facilities to the advantage of banks.

The other study variables like number of POS transactions and the number of agents has been found to impact on the financial performance of commercial banks negatively. Unless use of agents comes with reduction in staff levels to cause a saving, the benefits of continuous banking outside bank opening hours is watered down by the commissions payable to the agents and as a result the bank performance is affected negatively.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter entails the conclusion of the study with brief discussion of the summary of the finding explaining the relationship existing between each variable of the study and the dependent variable. Data was analyzed using the analytical model as per chapter three for which the conclusion sums up the entire study and concludes with recommendations giving the researchers opinion based on his findings for any future study to be conducted.

5.2 Summary of Findings

On the matter of digital innovation, the researcher had a number of determinants of the digital innovation among which included the number of mobile transactions, number of point of sale transactions, credit card transactions and the number of agents for the quarterly periods for 10 years. The results of the findings can be summarized as follows. The finding from the regression analysis on the mobile banking and the firm's value showed a coefficient of 1.384451 and the test for significance stood at 0.283. On the point of sales transactions, the researcher observed that the coefficient was at -0.5156167 while the test for significance was observed at 0.179.

The researcher also did observe the trend on the credit card transactions which showed a coefficient of +0.1193983 with its test for significance being at 0.902 while the last variable of observation which was the number of the agents relative to performance had a coefficient of -0.611074 with its significance test maintained at 0.490. Lastly the constant was observed to have a coefficient of 8.114465 and the value for the test of significance was observed to be 0.301 as obtained based on the

regression analysis of the logs of the study independent variables in respect of how they tent to influence dependent variable.

5.3 Conclusion

According to the summary of the findings above, it was clear that some of the study variables are observed to have positive correlation while others have a negative correlation but giving different ranges of significance for the variable impact towards the dependent variable. For instance, credit card transactions have been found to have a weak positive correlation of approximately 0.1 which means with the increased credit transactions, there is a positive response of around 11% while its significance level of 0.902 which compared to the scale can be viewed insignificant. On the summary for point of sale transactions showed there is a negative correlation between the POS and the performance of financial institutions with significance of between 0.179 which is considerably significant for the firms. This might have been attributed to the withdrawal impact of the POS of the money in circulation leading to reduction in performance of the banking industry.

In respect to the mobile banking transaction, it was found out to have a strong positive correlation with the performance of the banking industry with a considerably significant influence of approximately around 0.283. This has been attributed to the ability of mobile banking to meet the requirement of convenience of customers hence encouraging more banking transactions and more so deposit which increase the circulation of finance in the flow of the banking industry. It terms of the number of agents, they are found to have contributed negatively on the performance of the banking industry with a negative coefficient even the not quit significant. This has been seen to result from the cost of transaction which might be increased due to the intermediary of the agent as well as the loss direct relations with the firms. Also it is

assumed that most of the agents' transactions have been associated with withdrawal of money in circulation reducing possibility of transactions to add value.

5.4 Recommendations

The banking industry has been one of the critical industries in the support of the general economic growth and therefore the performance and growth of the industry means general growth of the economy. According to the research conclusion, it is clear that the most important variable of the study which has been found to be significant has been mobile banking transaction with a positive correlation. The research will recommend that the banking industry should embark on finding the means of achieving financial growth in general through integration of the mobile banking activities and investing on the research to determine how they can improve mobile technology in conjunction with banking systems.

The other variables of the study even though found to have a correlation with the performance of the banks; the significance test has shown that the level of significance is considerably quite low and therefore may not be influential to the performance of the banking systems. According to Kamau, (2013) it is worth for the financial institutions to emprise the right technology in whichever innovation they are taking as they can be used as a dumping site for the outdated technologies resulting to exposure to cybercrime and reduced performance.

5.5 Limitations of the Study

The major limitation of the study has been considerably the usage of secondary data. The researcher relied upon secondary data which the usage of the quarterly financial performance report was a major challenge as the authenticity of the same data may at times be questionable as they are not audited to provide assurance of their reliability.

However, the fourth quarter of each financial period is mostly considered to have been audited and the research had a keen observation of the profits growth over the three quarter to be in support of the performance of the last quarter of the year. Also average values were taken for each quarter for all the financial banks and which reduced the probable error of a single entity from affecting the validity of the entire data for that period as it becomes immaterial when absorbed by the other banks.

5.6 Suggestions for Further Research

As the study has been currently limited to the commercial banks in the Kenyan economy, it is considered that there are some other players in the financial markets which have not been considered for this study. For any further research, the study should also incorporate the other financial institutions like the insurance industry as well as the capital markets. Also the study can incorporate other variables of innovations in the banking industry which have not been incorporated in the current study.

The study also did not take the rate of changes in the level of technology over the different periods which could also be an area of study which can be exploited by the future researches. This can be also benchmarked with the studies so far made on technological advancement in the banking industry especially for the developed countries.

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APPENDIX 1

LIST OF COMMERCIAL BANKS IN KENYA

1 African Banking Corporation Ltd.
2 Bank of Africa Kenya Ltd.
3 Bank of Baroda (K) Ltd.
4 Barclays Bank of Kenya Ltd.
5 Bank of India
6 CFC Stanbic Bank Ltd.
7 Charterhouse Bank Ltd
8 Chase Bank (K) Ltd.
9 Citibank N.A Kenya
10 Commercial Bank of Africa Ltd.
11 Consolidated Bank of Kenya Ltd.
12 Co-operative Bank of Kenya Ltd.
13 Credit Bank Ltd.
14 Development Bank of Kenya Ltd.
15 Diamond Trust Bank Kenya Ltd.
16 DIB Bank (Kenya) Limited
17 Ecobank Kenya Ltd
18 Equatorial Commercial Bank Ltd.
19 Equity Bank Ltd.
20 Family Bank Limited
21 Fidelity Commercial Bank Ltd
22 Fina Bank Ltd
23 First community Bank Limited
24 Giro Commercial Bank Ltd. 58
25 Guardian Bank Ltd
26 Gulf African Bank Limited
27 Habib Bank A.G Zurich
28 Habib Bank Ltd.
29 Imperial Bank Ltd
30 I & M Bank Ltd
31 Jamii Bora Bank Limited.
32 Kenya Commercial Bank Ltd
33 K-Rep Bank Ltd
34 Middle East Bank (K) Ltd
35 National Bank of Kenya Ltd
36 NIC Bank Ltd
37 Oriental Commercial Bank Ltd
38 Paramount Universal Bank Ltd
39 Prime Bank Ltd
40 Standard Chartered Bank Kenya Ltd
41 Trans-National Bank Ltd
42 UBA Kenya Bank Limited
43 Victoria Commercial Bank Ltd

Source: Central Bank of Kenya (2018)

APPENDIX II

DATA ANALYSIS SHEET

Year	Average Profit	Average Number of Credit card transactions	Average Number of POS transactions	Average Number of mobile banking transactions	Average Number of agents
12/31/2008	2258699100			601679.1111	135.64
3/31/2009	917831000			773866.6667	296.84
6/30/2009	2097228000			995844.4444	369.8
9/30/2009	3384473000	7241.311111	317.0888889	1161762.222	440.07
12/31/2009	2668734304	7207.888889	1070.022222	1368535.556	511.38
3/31/2010	802083000	7198.977778	1183.577778	1443582.222	613.82
6/30/2010	1914222500	7416.288889	1305.777778	1609455.556	708.93
9/30/2010	2246791333	7503.711111	1423.288889	1848533.333	786.07
12/31/2010	4439310876	7578.644444	1237.8	2010566.667	876.64
3/31/2011	1001632000	7568.111111	1190.444444	1988466.667	804.4
6/30/2011	2025090000	7813.577778	1118.2	2302073.333	952
9/30/2011	2956876000	7936.733333	1073.222222	2588655.556	1027.42
12/31/2011	4263334029	8070.777778	1085.466667	2742986.667	1121.58
3/31/2012	1149476250	8283.755556	1111.777778	2839608.889	1238.36
6/30/2012	3545458667	8672.2	1082.777778	3115373.333	1362.51
9/30/2012	4998997000	8951.044444	1163.466667	3288666.667	1495.58
12/31/2012	6320367546	9109.733333	1220.044444	3586888.889	1709.16
3/31/2013	1158899000	9286	1221.488889	3539333.333	2071.36
6/30/2013	3265787500	8742.088889	1257.244444	3919317.778	2292.56
9/30/2013	5955572400	9446.155556	1324.044444	4241111.111	2454.04
12/31/2013	6784428000	11474.11111	1380.622222	4580173.333	2514
3/31/2014	2062155625	10900.44444	1443.355556	4591711.111	2582.13
6/30/2014	4127845250	12312.88889	1156.666667	4903811.111	2684.02

9/30/2014	6274041000	13270.84444	1073.488889	5211968.889	2759.53
12/31/2014	7577455000	14514.84444	1136.733333	5544400	2748.96
3/31/2015	1750966222	13350.15556	1158.355556	5616480	2857.58
6/30/2015	4063606000	14438.28889	1228.8	5899480	2928.02
9/30/2015	5456475400	16856.82222	1343.133333	6320855.556	3069.58
12/31/2015	6448235000	16594.37778	1451.666667	6922666.667	3198.8
3/31/2016	2368262444	15346.73333	1570.688889	6763511.111	3355.27
6/30/2016	4094154444	15151.17778	1748.6	7103755.556	3610.33
9/30/2016	7150676889	15216.48889	1875.933333	7494577.778	3860.69
12/31/2016	7805656091	15541.24444	2004.711111	8216244.444	3686.84
3/31/2017	2126461700	14681.04444	1989.8	8285800	3507.89
6/30/2017	4920996600	15600.4	2232.955556	8605266.667	3669.09
9/30/2017	7449973889	15720.53333	2298.955556	8382377.778	3728.33
12/31/2017	6963453727	15727.26667	2350.533333	9019333.333	4054.93
3/31/2018	2517410600	15922.64444	2388.577778	9255000	4355.6
6/30/2018	4845823000	16124.44444	2555.555556	9342711.111	4384.13
9/30/2018	7042022500	16291.57778	2659.822222	9746488.889	4519.09
12/31/2018	7353852821	15886.04444	3012.422222	10312977.78	4572.11
3/31/2019	3215188000	16441.97778	2815.488889	10224733.33	5043.49
6/30/2019	5839334778	18890.42222	2811.644444	10195111.11	4944.09