THE EFFECT OF INNOVATION ON COMPETITIVE ADVANTAGE OF TELECOMMUNICATION COMPANIES IN KENYA

BY

JUSTUS MATHENGE

REG NO: D61/72459/2011

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION OF THE UNIVERSITY OF NAIROBI

OCTOBER 2013
DECLARATION

This research project is my original work and has not been submitted to any other university for examination.

Signature: JUSTUS MATHENGE
REG NO: D61/72459/2011

This research project has been submitted for presentation with my approval as the University Supervisor.

Signature: HERICK ONDIGO

Lecturer,

Department of Finance and Accounting,

School of Business,

University of Nairobi
DEDICATION

I dedicate this research project to my family members for their love, support, patience, encouragement and understanding. They gave me the will and determination to complete my masters.
I’m grateful to God the almighty for giving me good health and strength to go through this very demanding study. Much gratitude also goes to my supervisor Mr Herick Ondigo for their tireless effort in guidance, advice, support and constructive criticism throughout the research project writing.
ABSTRACT

The purpose of the study was to investigate the effects of financial innovation on competitive advantages of telecommunication companies in Kenya. The study used survey co-relational research design. The target population for the study was comprised of 250 respondents. The study used both secondary data and primary data collected using questionnaires both structured and unstructured. Data reliability and validity was tested subsequent to the data collection. Quantitative data was analysed using descriptive statistics while qualitative data was analyzed using content analysis. The data collected was coded and analysed using the statistical package for social sciences (SPSS). The responses from the unstructured questions was organized into themes due to their qualitative nature and then coded appropriately for analysis.

The study findings made the following conclusions and recommended on the same: telecommunications companies indicated growth through financial innovations that gave them a competitive advantage in the ICT (Information, Communication and Technology) field; financial innovation affects positively the performance of telecommunications companies to a great extent hence they are considered often important for developing services in the telecommunication companies giving them the competitive advantage in the telecommunications field; telecommunication companies have different aims of financial innovations that provide the companies with the competitive advantage.

From the study the major objective of financial innovation is process evaluation and the dimensions of financial innovations were identified as product, service innovation and process innovation. From the study, product innovation was rated to a great extent having the greatest positive financial performance according to the organisation’s objectives.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMs</td>
<td>Automated Teller Machines</td>
</tr>
<tr>
<td>CCK</td>
<td>Communications Commission of Kenya</td>
</tr>
<tr>
<td>EAMS</td>
<td>East Africa Marine Systems</td>
</tr>
<tr>
<td>EASSy</td>
<td>East Africa Submarine Cable System</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
</tr>
<tr>
<td>OT</td>
<td>Organization theory</td>
</tr>
<tr>
<td>SBCS</td>
<td>Small Business Credit Scoring</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Packages for Social Scientists</td>
</tr>
<tr>
<td>WSJI</td>
<td>Wall Street Journal Index</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECLARATION</td>
<td>i</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF ACRONYMS</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>x</td>
</tr>
<tr>
<td>CHAPTER ONE: INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Background of the Study</td>
<td>1</td>
</tr>
<tr>
<td>1.1.1 Financial Innovation</td>
<td>2</td>
</tr>
<tr>
<td>1.1.2 Competitive Advantage</td>
<td>6</td>
</tr>
<tr>
<td>1.1.3 Effect of Financial Innovation on Competitive Advantage</td>
<td>7</td>
</tr>
<tr>
<td>1.1.4 Telecommunication Companies in Kenya</td>
<td>8</td>
</tr>
<tr>
<td>1.2 Research Problem</td>
<td>10</td>
</tr>
<tr>
<td>1.3 Objective of the Study</td>
<td>11</td>
</tr>
<tr>
<td>1.4 Value of the study</td>
<td>11</td>
</tr>
<tr>
<td>CHAPTER TWO: LITERATURE REVIEW</td>
<td>12</td>
</tr>
<tr>
<td>2.1 Introduction</td>
<td>12</td>
</tr>
<tr>
<td>2.2 Theoretical Review</td>
<td>12</td>
</tr>
<tr>
<td>2.2.1 Demand-side Theory</td>
<td>12</td>
</tr>
<tr>
<td>2.2.2 Theory of Constraint</td>
<td>13</td>
</tr>
<tr>
<td>2.2.3 Theory of the Innovator's</td>
<td>13</td>
</tr>
<tr>
<td>2.2.4 Price Theory</td>
<td>14</td>
</tr>
<tr>
<td>2.3 Determinants of Competitive Advantage</td>
<td>14</td>
</tr>
<tr>
<td>2.4 Empirical Studies</td>
<td>15</td>
</tr>
</tbody>
</table>
CHAPTER THREE: METHODOLOGY ................................................................. 19
  3.1 Introduction .................................................................................. 19
  3.2 Research Design .............................................................................. 19
  3.3 Population ..................................................................................... 19
  3.4 Data Collection ............................................................................... 19
  3.4.1 Data Reliability and Validity ....................................................... 20
  3.5 Data Analysis ............................................................................... 20
    3.5.1 Analytical Model ................................................................... 21

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION .................. 23
  4.1 Introduction .................................................................................. 23
    4.1.1 Response Rate ........................................................................ 23
  4.2 Demographic Information ............................................................... 23
  4.3 Effects of financial innovation on competitive advantage ............ 24
    4.3.1 Financial innovations ............................................................. 24
    4.3.2 Financial innovation and performance of company ............. 25
    4.3.3 Importance of financial innovation ....................................... 26
    4.3.4 Aims of financial innovation ................................................. 27
    4.3.5 Dimensions of financial innovations ................................... 28
  4.4 Product Innovation .......................................................................... 29
    4.4.1 Adoption of product innovation ............................................ 29
    4.4.2 Extent of Product Innovation on financial innovation .......... 30
    4.4.3 Company competitiveness on product innovation ............. 30
  4.5 Service Innovation .......................................................................... 31
    4.5.1 Adoption of service innovation ............................................ 31
    4.5.2 Extent of Service Innovation on financial innovation .......... 32
    4.5.3 Company competitiveness on Service innovation ................ 33
4.6.2 Extent of Process Innovation on financial innovation ........................................... 35
4.6.3 Company competitiveness on Process innovation .................................................. 36
4.7 Regression Analysis .................................................................................................. 36

CHAPTER FIVE ................................................................................................................ 41

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS .................. 41
5.1 Introduction ................................................................................................................ 41
5.2 Summary of Findings ............................................................................................... 41
5.3 Conclusion ................................................................................................................ 42
5.4 Recommendations for Policy .................................................................................. 43
5.6 Limitations of the study ........................................................................................... 43
5.7 Recommendation for Further Research ................................................................... 44

REFERENCE .................................................................................................................. 45

APPENDIXES .................................................................................................................. 50

APPENDIX 1: QUESTIONNAIRE .................................................................................. 50

APPENDIX 2: LIST OF CCK REGISTERD TELECOMMUNICATION COMPANIES..56
APPENDIX 3: DAT COLLECTION FORM ...................................................................... 56
## LIST OF TABLES

Table 4.1 Competitiveness on product innovation .................................................................30
Table 4.2: Model's Goodness of Fit Statistics .........................................................................37
Table 4.3: Analysis of Variance (ANOVA) ........................................................................37
Table 4.4: Regression Coefficients .......................................................................................38
LIST OF FIGURES

Figure 4.1: Years of operation ........................................................................................................23
Figure 4.2: Presence of Company in different countries ...............................................................24
Figure 4.3: Undertaking Financial Innovation ...............................................................................24
Figure 4.4: Financial innovation affects performance of company ...............................................25
Figure 4.5: Extent which financial innovation affects performance ...............................................26
Figure 4.6: Importance of financial innovation .............................................................................26
Figure 4.7: Aims of financial innovation .........................................................................................27
Figure 4.8: Dimensions of financial innovations ...........................................................................28
Figure 4.9: Adoption of product innovation ....................................................................................29
Figure 4.10: Extent of Product Innovation on financial innovation ...............................................30
Figure 4.11: Adoption of service innovation ....................................................................................31
Figure 4.12: Extent of Service Innovation on financial innovation ...............................................32
Figure 4.13: Company competitiveness on Service innovation .....................................................33
Figure 4.14: Adoption of Process Innovation ..................................................................................34
Figure 4.15: Extent of Process Innovation on financial innovation ...............................................35
Figure 4.16: Company competitiveness on Process innovation .....................................................36
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The term “innovation” as such was used for the first time by Schumpeter at the beginning of the 20th century. His ideas and research have been developed by a number of other authors. Schumpeter defined innovations as product, process and organizational changes that do not necessarily originate from new scientific discoveries (Zizlavsky, 2011), but may arise from a combination of already existing technologies and their application in a new context (Zizlavsky, 2011). Innovation also originates from public research (Bernard, 2001). It is therefore possible to summarize that according to these definitions innovations do not cover only technical and technological changes and improvements, but in particular practical application and particularly originates from research. Human capital and creative research work are according to Zemplinerova (2010) considered the most important determinants of innovation.

Adair, (2004) states that any innovative organization should have a bucketful of ideas. According to Kosturiak & Chaľ (2008), Skarzynski & Gibson (2008), Tidd, Bessant & Pavitt (2007) an innovative process can be divided into two essential parts. One part is inventive—associated with the generation of the original idea, thought or concept and the second innovative, during which the invention is implemented and marketed. Pitra, (2006) states that innovation is the result of employees’ creativity in an organisation and must be always targeted at customers and bring added value. It is therefore necessary to realize that the inventive part is based on people’s knowledge, skills and experience (Molina-Morales, Garcia-Villaverde & Parra-Requena, 2011).

If an organization is not capable of introducing innovations on an ongoing basis, it risks that it will lag behind and the initiative will be taken over by other entities. (Tidd et al., 2006) asserts that entrepreneurs attempt to use technological innovation a new product or service or perhaps a new process in the course of their production provided they thus gain a strategic competitive advantage. This creates competition that does not attack market innovation s or the outputs of existing organizations, but their essence and their existence as such. With respect to the above said it is important within the frame of innovations that are a necessity in today’s knowledge, information and innovative society to follow large organizations that engage in innovation and
The present concept of innovations is that they go beyond the threshold of an organisation and thus exploits not only inspections and changes in the internal environment, but also changes in the external environment.

Rogers, (1990) argues that first movers are those aiming for invention they clearly break new ground. Inventions, because no other firm has yet introduced them, seem different and new. Second movers are still aiming for relatively early introduction, and tend to be closer to the first mover than the late mover end of the continuum. Late movers, who introduce an innovation because many competitors already have it and who will lose sales unless they introduce one too, are obviously toward the late end of the continuum. Furthermore, the degree of technological imitation or invention is sometimes very different from the effects of an innovation.

Financial innovations can sometimes have truly inventive effects; conversely, innovations that require highly inventive technology can sometimes bring about very little perceived change. The technology required to design and mass-produce each new generation of computer chips is complex and very expensive. To the average user, the new chip makes computers operate a little faster, but if the user limits his or her work to word processing and relatively simple spreadsheets, the difference may not even be noticed (Tushman & Anderson, 1986).

1.1.1 Financial Innovation

The significance of financial innovation is widely recognised. Many leading scholars, including Anderloni and Bongini (2009), have highlighted the importance of new products and services in the financial arena. Empirically, Wang et al., (2004) showed that of all public offerings in 1987, 18% (on a dollar-weighted basis) consisted of securities that had not been in existence in 1974. These innovations are not just critical for commercial banks in the financial services industry, but also impact other companies: for instance, enabling them to raise capital in large amounts and at a lower cost than they could otherwise.

Profit-seeking enterprises and individuals are constantly seeking new and improved products, processes and organisational structures that will reduce their cost of production, better satisfy customer demands and yield greater profits. Sometimes this search occurs through formal
research and development; sometimes it occurs through more informal “tinkering” or trial-and-error efforts. When successful, the result is an innovation (Soliman, 2011). The centrality of finance in an economy and its importance for economic growth Ross Levine (1997) naturally raises the importance of financial innovation. Since finance is a facilitator of virtually all production activity and much consumption activity, improvements in the financial sector will have direct positive ramifications throughout an economy.

Financial innovation, like other economic behaviours, generally arises in anticipation of material gains following a cost-benefit analysis. The innovation makes possible either a reduction in costs or an increase in revenues or both. On the cost-reducing side, in particular, exogenous technological change provides room for cost reduction that induces innovation. For example, advances in information technology have significantly lowered the cost of accounting-intensive products such as mutual funds. Other product innovations relying on speedy calculation and action, such as portfolio insurance and index arbitrage transaction, have similarly been made feasible by upgrade in computer speed.

In a broader sense, financial innovation can be defined as the emergence of new financial product or service, new organisational form. Or new processes for a more developed and complete financial markets that reduce costs and risks, or provide an improved service that meets particular needs of financial system participants. Generally, innovation has generated a wide interest as a research subject in social sciences with a particular focus on the relationship between innovation and competitive advantage. In a highly turbulent environment, a successful innovation creating a unique competitive position can give the company a competitive advantage and lead to a superior performance (Leonidou et al., 2003). Generally speaking, all profit seeking enterprises including banks are constantly seeking new and improved products, processes and organisational structures that can meet their precise, individual needs. Technology boom in the past decades have helped banks to respond to this challenge.

1.1.1.1 Dimensions of Financial innovation

The foregoing literature review highlights the relationship of financial innovation strategies on financial performance in these challenging times of changing external environments. It's therefore important that firms adopt the relevant strategies for competitive advantage that will
It's true that effectiveness of monetary transmission mechanism hinges on changing forms and character of financial diversity and depth of financial markets. In this context, the author contends that with an increasing role of the capital market, investors have greater options to diversify their financing, (Pantalone & Welch, 1987).

Product innovation is a primary means to adapt to changing markets, technologies, and competition. Innovative organizations are more profitable, grow faster, create more jobs, and are more productive than their non-innovative competitors, even in mature industries (Cavusgil & Zou 1994; Bodie & Merton 2000; Czekaj et al., 2001). The ability to generate streams of new products or services over time is therefore vital to many organizations. Organizational design plays a significant role in this ability, so understanding how to organize for innovation is a central problem in innovation management (Gubler 2010; Tarczyński & Zwolankowski 1999; Dębski 2005). The most recent Product Development Management Association survey finds that organizing is the “last frontier” in innovativeness (Al-Kaber, 2010).

Previous PDMA surveys found that innovative companies used more “best practices” (1990), especially strategic systems (1995). The 2003 survey found that the most innovative organizations used practices selectively, molded the ones they did use to fit particular situations, and implemented them more effectively. Moreover, innovative organizations managed the entire organization to support innovation by ensuring that resources flowed smoothly to innovation teams, that structures, processes, and other organizational mechanisms supported innovation, and that long-term investments in supporting technologies were made.

The service blueprint of application development describes a very classical approach to developing new systems. Based on the service blueprint explain what the problems are with this approach. Suggest a better approach and draw a service blueprint to illustrate your approach, (Hirsch & Levin 1999). One of the most dangerous assumptions that can be made by an IT Service department is that internal customers are well aware of their future needs, and that just asking the users will elicit this information. Customers can only be expected to know about what IT is presently on the market, (Hirsch, 2000).
Innovation researchers have always pointed out that product innovation involves true tensions (Pelz and Andrews 1966; Lawrence and Lorsch 1967; Jelinek and Schoonhoven 1990; Weick and Westley 1996). While other tensions are also involved, research suggests that these four relate to innovation success (Kohler, 2003). As argued in Dougherty (1996), thinking of the organizing challenges of innovation as inherent tensions emphasizes the dialectical nature of ongoing innovation, where the organization and new products mutually constitute each other.

Rothwell, (1992) talks of his eight characteristics for successful process innovation as project execution or tactical variables. He distinguishes these from higher level strategic variables such as a corporate strategy which places innovation as a key priority. Although there could be well-organised innovation projects in firms that lacked a corporate strategy for innovation, it is better to have both. Ideally an innovation strategy should involve a long-term commitment to major projects that address company development.

The final premise is that the underlying principles of organization design helps to put the ṭīṭō and the ṭōṭō back into OT (organization theory). Organization design was the ṭīṭō meat and potatoes of organization theory at the outset of this field (Tushman 2004; Nystrom and Starbuck 1981). While still central for managers, organization design but has fallen off the OT table for two reasons. First, organization design has been given over to consultants in part because ṭīṭō design is understood in a-theoretical terms, as the use of tools and techniques that are based more on fads than on scholarship (e.g., process re-engineering, total quality, and stage-gate). Bringing the ṭīṭō back into organization design will build in a theoretical foundation for when, why, and how to use these tools. Second, OT has shifted to inter organizational issues such as the causes and effects of institutional pressures, industry emergence and evolution, or networks. Inter-organizational issues are important, since value creation and even specific innovations are conceived, developed, and launched by a community of organizations, not simply by ṭīṭō the firm. But the ṭōṭō of OT is either a black box, or a series of poorly defined ṭīṭō umbrella concepts such as routines, dynamic capabilities, organizational capacities, cognitions, culture, slack, effectiveness, and identity (Hirsch and Levin 1999).
These ideas are used so broadly that each often encompasses the others. Rethinking the essence of other constructs of the burden of explaining work roles and relationships, and pushes for more thoughtful conceptualization of them.

1.1.2 Competitive Advantage

Competition has also emerged between traditional commercial banks and other financial institutions. The development and globalization of financial markets have intensified the need for modifying the current structure and condition of the financial system. Financial regulations have been modified, usually towards reducing or eliminating constraints on financial activity, such as interest rate liberalization. This type of financial deregulation, as it may be called, triggers off the incentive for innovation. The concept of competitive advantage which is a set of unique features of a company and its products that are perceived by the target market as significant and superior to the competition has to be put in place. It’s an advantage or a superiority gained by an organization when it can provide the same value as its competitors but at a lower price, or can charge higher prices by providing greater value through differentiation. Competitive advantage results from matching core competencies to the opportunities.

Porter, (1980) stated that competitive advantage, sustainable or not, exists when a company makes economic rents, that is, their earnings exceed their costs. Competitive advantage is the extent to which an organization is able to create a defensible position over its competitors (Tracey et al., 1999). In the same vein, Ma (1999) defines the competitive advantage as the asymmetry or differential in any firm attribute or factor that allows one firm to better serve the customers than others and hence create better customer value and achieve superior performance. Competitive advantage allows a firm to create superior value for its customers and profits for itself. A firm positions itself in the industry through its choice of low cost or differentiation. This decision is a central component of the firm’s competitive strategy.

Porter, (1980) identified two basic types of competitive advantage that is cost advantage and differentiation advantage. He indicated that by applying these positions in either a broad or narrow scope, three types of competitive advantage strategies result that is, cost leadership, differentiation and focus. He firstly identified cost leadership strategy as a type of competitive advantage strategy which calls for being a low cost producer in an industry for a given level of quality. Cost competitive advantage is when a company is able to utilize its skilled workforce,
They may include the pursuit of economies of scale, proprietary technology, improving process efficiencies, gaining unique access to a large source of lower cost materials, making optimal outsourcing, high levels of productivity, high capacity utilization, use of bargaining power to negotiate the lowest prices for production inputs, lean production methods (e.g. JIT), access to the most effective distribution channels and other factors. This is also supported by Treacy and Wiersema (1995) who put forward another framework for gaining competitive advantage. In their framework, a firm will choose to emphasize one of three value disciplines namely operational excellence, product leadership and customer intimacy. Operational excellence focuses on optimizing the production and delivery of products and services. This results in products and services that are reliable as well as competitively priced and delivered with minimal difficulty or inconvenience.

1.1.3 Effect of Financial Innovation on Competitive Advantage

Empirical studies have establishing a close link between financial innovations on Competitive Advantage. Advantage as it may be more probable in the banking industry than in other industries due to the importance of bank-client relationship (Berger & Dick, 2006). Theories concerning first mover advantages have typically evolved out of the Schumpeterian argument that new products and processes developed by a firm are protected from imitation for a certain period. A successful innovation thus generates a proprietary competitive position that bestows on the firm a competitive advantage and superior performance.

The imitation that occurs during the Schumpeterian process of creative destruction then generates the need for enterprises to produce still more innovations in order to maintain a competitive advantage. Price theory regards price as a mechanism that delivers first mover advantages. On the one hand, establishing high prices prior to the entry of imitators allows innovators to recover the cost of investing in innovations. On the other hand, these monopoly rents are temporary and are eroded once imitation appears. This is the classic monopoly argument upon which Van Horne (1985) relied to explain the performance of financial innovators. Berger, (2003) argues that the relevant aspects of technological change include
The collection, storage, processing, and transmission of information, as well as the means by which customers access bank services. Humphrey et al. (2006) cite ATMs (automated teller machines), telephone banking, internet banking, and e-money as being among the significant innovations affecting the banking distribution system that influence banking performance significantly.

Goddard et al. (2007) add that client relation management systems, bank management technologies, and various other technologies are among the major changes in internal banking systems that also have exercised a positive influence on banking performance and profitability. The first institutions to adopt successful new technologies earn extraordinary profits because of the high prices they impose or the increased market shares they acquire. Other banks follow their lead in order to avoid losing market share. If the process of innovation continues and new technologies are introduced over time, innovative banks can continue to earn high profits on the various new or improved products. However, extraordinary profits will dwindle as innovations are adopted widely.

Berger and Mester, (2003), Consistent with the results of other studies that support the hypothesis that the first mover advantage offers the enterprise better performance, the examination by Dos Santos and Peffers (1995) of the introduction of ATMs (Automatic Teller Machines) by American banks demonstrated that the competitive advantage and performance that is associated with it were not realized by those who subsequently adopted the technology.

1.1.4 Telecommunication Companies in Kenya

Since the beginning of the liberalization of the telecommunications sector in 1999, Kenya has seen fast internet growth and even faster mobile phone growth. Encouraged by this development, the government has plans to turn Kenya into East Africa's leader in Information and Communications Technology (ICT). Since 1999, Kenya has experienced radical changes as the liberalization process of the telecommunications sector began. Of vital importance to the process was the establishment of the Communications Commission of Kenya (CCK) in February of that same year through the Kenya Communications Act, 1978. CCK's role is to license and regulate telecommunications, radio communication and postal services in Kenya. Since then a visible boost has gripped the industry.
In 2000, some 180,000 Kenyans had access to a mobile phone. By the end of 2006 that figure had grown to 7.3 million people—an increase of more than 4,000 percent. According to the Communications Commission of Kenya (CCK) 4th Quarter Sector Statistical Report, Kenya had a total of 25.27 million subscribers by 30th June, 2011 representing 64.2% of the total population. The number of mobile subscribers in Kenya dropped from 30.7 million to 29.8 million between January and March 2013. According to the Communications Commission of Kenya (CCK) quarterly Sector Statistics Report for January to March 2013, the decline was mainly attributed to the de-activation of 2.4 million unregistered SIM cards during the quarter. The fast-growing mobile sector is characterized by competition between four operators: Safaricom Ltd which is the leading mobile network operator in Kenya formed in 1997 as a fully owned subsidiary of Telkom Kenya. In May 2000, Vodafone group Plc of the United Kingdom acquired a 40% stake and management responsibility for the company; Airtel, a subsidiary of Africa’s third-ranked phone company (Bharti Airtel Limited) offering GSM network; Telkom Kenya (Orange) a 30% Government owned company and 70% owned by France Telecom; and YU mobile owned by an Indian based company Essar. These companies have made considerable growth and profits since their inception but still there is enormous potential remaining in the mobile phone sector.

The government is now supporting several projects aimed at boosting the country’s broadband infrastructure with the most high-profile projects being the East Africa Marine Systems (EAMS) and the East Africa Submarine Cable System (EACS), initiatives that will connect the countries of eastern Africa via a high bandwidth fibre optic cable system with the rest of the world. TEAMS, a multi-million dollar fibre optic cable link from Mombasa to Fujairah in the United Arab Emirates, is expected to link East Africa to the rest of the world. According to the Communications Commission of Kenya (CCK) quarterly Sector Statistics Report for January to March 2013, the internet/data grew to reach 9.6 million subscriptions with Broadband subscriptions grew by 17.5% to reach 1.17 million while international internet bandwidth available in the country increased to 921,319 Mbps with Telkom Orange having the largest bandwidth on the submarine cables with redundancy in TEAMS, SEACOM and LION 2.
The rapid rate of innovation in the financial sector as well as the rising importance of the sector in modern economics has generated a research interest in financial innovation and its effect on financial performance Telecommunication Companies in Kenya. Indeed a broad descriptive literature that discusses recent financial innovations and that advances various hypotheses about them has arisen (Kwach, 2004).

Furst (2000) studied on video conferencing in the 3rd quarter of 1999 to find out the characteristics of Telecommunication Companies that offer video conferencing in Europe using the Logit models and found out that the adoption of video conferencing is dictated by urban area locations, affiliation to a holding company, higher fixed expenses and higher non interest income. Additionally, the study concluded that, a great number of their service offerings were positively correlated to the size of the firm and the length of period of offering video conferencing related services. Sullivan (2000) compared firms in the 10th Federal Reserve district (that is Telecommunication firms in Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, and Wyoming) that used Internet web-sites for transactional services to firms that did not offer the service in the first quarter of 2000; using survey data of the 1st quarter of 2000. The study established that internet based transactional services were larger in areas with an educated populace with a higher proportion of the population being in the 18-64 age brackets. The firms that were offering transactional Internet web-sites also had higher income and little expenses.

Locally, Koril&Ndeche (1995) examines the introduction of Pay with M-pesa on service offered in selected Telecommunication services in Kenya, and demonstrated that the competitive advantage and increased financial performance was associated with the those Telecommunication companies that initially adopted these quick advancing technology. Moreover, some local research studies conducted on financial innovations; Kamotho, (2009) carried out a study on Mobile Phone Banking usage experiences in Kenya and observed that competition triggers innovation and creativity. Continuous innovation not only yield new products but rather promotes efficiency in the performance of activities. Hence lowering the transaction cost. This finding is also confirmed by Tufano, (1989). Mwangi, (2007) carried out a study on Factors Influencing Financial Innovation of 48 Companies listed at Nairobi Stock
Kenyan laws protecting investors was the major factor influencing financial innovation, the finding concluded that. This result is similar to the finding by Frame & White, (2002). Mwangi, (2007) argued that global financial competition and integration had an influence on financial innovation with increased financial competition amongst financial institutions influencing financial innovation the most.

Since most local studies above have only concentrated on financial industries, this study seek to fill in the study gap by providing answers to the question, what are the effects of financial innovation on competitive advantages of telecommunication companies in Kenya?

1.3 Objective of the Study

To investigate the effect of innovation on competitive advantage of telecommunication companies in Kenya.

1.4 Value of the study

The Telecommunication companies (telecommunication companies) will be able to know how financial innovation affects their competitive advantage. This will act as a basis upon which improvement through financial innovation will lead to an increasing profitability. The telecommunication companies in Kenya will recognize the importance of selecting appropriate financial innovation, ensuring sustainability and new product development which will assist gain competitive advantage.

Scholars and researchers can use the study as a means of reference for future studies or academic investigations into the financial innovations of companies.
2.1 Introduction

This chapter is concerned with the review of pertinent literature. It covers both theoretical and empirical literature. Theoretical literature focuses on the effects of financial innovation on competitive advantages and the capacity to adapt to the rapid changes in the environment on time. On the other hand, empirical literature lays emphasis on findings of empirical studies on the performance of entities.

2.2 Theoretical Review

As the term “financial innovation” is clearly defined, one should focus on the factors influencing the evolution of the new financial developments. We can distinguish two situations in which the financial innovations are created and implemented. Firstly the financial innovations are applied when the traditional financial solutions are no longer available. And secondly when the costs connected with the introduction of the financial developments are lower than the costs connected with the usage of the old, traditional solutions (Pantalone and Welch, 1987, p. 33-35).

2.2.1 Demand-side Theory

The demand-side theory of the financial innovations indicates that the main reasons for the new developments are the imperfections of the financial market, mainly the asymmetric information, agency costs and transaction costs (Fabozzi and Modigliani, 2003, p. 28). These imperfections create demand for the solutions that enable the market participants to reduce their negative consequences. As an example of the responsive financial innovations, the new solutions in the payments systems and instruments can be given, aiming at the reduction of the transaction costs. Another example which can be presented is the one in which the new developments in financing instruments were introduced to increase the availability of the sources of funds and to give more flexibility in designing cash flows. Yet another reason for creating and implementing financial innovations is connected with the unfavourable tax regulations, forcing the market participants to search for the solutions enabling them to avoid paying too high taxes for example by using defensive innovations (e.g. new investment instruments in a form of structured products) one can
The increased volatility of the market parameters also new solution enabling them to reduce the level of risk.

New regulations may also force the market participants to use the new developments in financial management, accountancy or financial reporting e.g. adaptive innovations in the form of new systems of financial reporting. Summarizing, the financial innovations should be created as a response to the market participants’ needs aiming at meeting their individual goals (the demand-driven financial innovations). Simultaneously, since the beginning of 1980s the intense activity of the financial institutions creating new financial developments has been observed, being the subject of the analysis of the supply-side theory of financial innovations. These new developments are created by the financial institutions in order to increase their competitive advantage.

2.2.2 Theory of Constraint

Silber (1975, 1983) presented the theory of constraint which is one of the most influential theories of financial innovation. This theory considers product innovation as response of organization to the constraints placed up on it. Innovations have many causes. Firms may need to stop the loss of deposits, enter new geographic or product markets and deliver services with cheaper and better technology.

2.2.3 Theory of the Innovator's

Christensen and Raynor's theory of the innovator's solution is a brilliant analysis of why companies fail to innovate. It explains convincingly why corporate managements don't learn about good ideas, and why managers succumb to inherent pressures to run away from the challenge of disruptive competition rather than stand and fight. The decisions made as a result of these pressures make sense in the short run to the individuals involved, but in due course they send the organization into an inexorable death spiral (Anthony, 2008).

But while their analysis of the causes of failure to undertake disruptive innovation is effective, their project for solving the dilemma of disruptive innovation is less helpful. The central premise of their thesis the innovator's solution is to accept the grim reality that big companies are inherently and constitutionally disinclined to tackle disruptive innovation. A modern
ideas, because they represent a threat to management, to old ways of things, to client bases, to brands, to corporate culture. The authors’ solution is to protect genuine innovators and their disruptive change ideas from these hostile forces. According to Christensen and Raynor, corporate leaders should put up a wall between the innovation and the existing hierarchy. Leadership should create an independent business unit, which will provide a safe and protected environment for innovation. There the innovation can flourish without having to fight off the interferences and intrusions and anti-innovation attitudes of the hierarchy, Christensen (2008).

2.2.4 Price Theory

Price theory regards price as a mechanism that delivers first mover advantages. On the one hand, establishing high prices prior to the entry of imitators allows innovators to recover the cost of investing in innovations. On the other hand, these monopoly rents are temporary and are eroded once imitation appears. This is the classic monopoly argument upon which Van Horne (1985) relied to explain the performance of financial innovators. Berger (2003) argues that the relevant aspects of technological change include innovations that reduce costs related to the collection, storage, processing, and transmission of information, as well as innovations that transform the means by which customers access bank services.

2.3 Determinants of Competitive Advantage

Recent studies have established that the successful use of information technology (IT) can improve a company’s performance and competitive position Bharadwaj (2000). Competitors will attempt to neutralize the competitive advantage of the successful users by copying and possibly improving the IT used (Kettinger et al., 1994; Mata et al., 1995). In some cases, a competitor’s response may be immediate or rather take some time.

Competitive advantage in telecommunication industries is mainly through companies financial performance, the company’s market share and introduction of new products and services that their customers need so as to increase their sales revenues from customers loyalty and thus remain competitive.
Empirical Studies

Ben-Horim and Silber (1977) carried out a study to determine whether regulatory restraints encourage financial innovation using Federal Reserve data from 1952-1972. They constructed a linear programming model to estimate the opportunity costs (shadow prices) of deposits, debentures, and capital (net worth) for large banks from 1952-1972. They found out that the increasing shadow prices, as they approached regulatory constraints (such as Regulation Q), were associated with some of the major innovations of the 1960s, such as the negotiable CD.

Tufano (1989) did a research on Financial Innovation and first mover advantages. The objective of the study was to determine whether financial products innovators enjoy first mover advantages. The data was collected from 1,944 publicly traded securities, where he specifically, used a sample of 58 innovation to test whether investment banks that create new securities benefits by charging higher prices (underwriting charges) than imitators or by capturing large quantities. The study was conducted over the period 1974-1986.

Tufano concluded that investment banks that created new financial products did not charge higher prices in the period before imitative products appear and in the long run charges lower than rivals. However these innovators did underwrote more public offerings that they innovated, than did the imitating rivals. Overall, Tufano’s results was not consistent with monopoly pricing of new securities issues by innovators, but rather with the presence of cost advantages that allow these institutions to capture market shares.

Sullivan (2000) compared banks in the 10th Federal Reserve district (that is banks in Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, and Wyoming) that used Internet websites for transactional services to banks that did not offer the service in the first quarter of 2000; using survey data of the 1st quarter of 2000. The study established that internet based transactional services were larger in areas with an educated populace with a higher proportion of the population being in the 18-64 age brackets. The banks that were offering transactional Internet web-sites also had higher non-interest income and noninterest expenses.

While studying the attributes of large banks that adopted the SBCS (small business credit scoring) and its effect on the their commercial loan portfolio under $100,000 for 1997 Frame, Srinivasan, & Woosley (2001) found out that the likelihood of adopting the SBCS was
negatively correlated to the number of subsidiaries but positively correlated to bank branch number. Therefore, suggesting a relationship between the organizational chart and certain technology adoption.

Furst, Lang, and Nolle (2002) analyzed survey data on internet banking in the 3rd quarter of 1999 to find out the characteristics of banks that offer internet banking using the Logit models and found out that the adoption of internet banking is dictated by urban area locations, affiliation to a holding company, higher fixed expenses and higher non-interest income. Additionally, the study concluded that for the banks which offered internet banking, a great number of their service offerings were positively correlated to the size of the bank and the length of period of offering internet banking related services.

Lerner (2006) investigated the origins of innovation in US financial Service firms between 1990 and 2002; He identified two sources -Wall Street Journal Index (WSJI) from Wall Street articles as an innovation indicator and Factiva Database. Of the total 20916 observations or entries in the journal only 651 new stories meets the required criteria for innovations. The distribution was further reclassified into various panels and industry of innovators. The analysis focuses on the nature of the financial institutions that undertake the innovations. He estimates both pool and random effects panel data models under different specifications (e.g. negative binomial, poisson). He finds that smaller firms account for a disproportionate share of the innovations, as do less profitable firms though their profitability increases significantly in subsequent years. Older, less leveraged firms and those located in regions with more financial innovation are more innovative.

Locally, Mwangi, (2007) carried out a study on Factors Influencing Financial Innovation of 48 Companies listed at Nairobi Stock Exchange. The objective of the study was to explain the macro-environmental and micro-environmental factors influencing financial innovation in Kenya’s securities market. The population used in this study was 48 companies listed on the Nairobi Stock Exchange in 2005. An exploratory survey was conducted between September 2005 and March 2006, of which 31 respondents was obtained. The data was analyzed using descriptive statistics. Semi-structured questionnaire, drop and pick method was employed. Data in this study was summarized and presented in forms of tables, percentages, frequencies, mean scores and standard deviations.
Based on regulatory factor, the finding concluded that Kenyan laws protecting investors was the major factor influencing financial innovation. This result is similar to the finding by Frame & White (2002). Further, the research finding showed that unstable Forex rates were the most important factor influencing financial innovation among market volatility factors. Mwangi also observed that the absence of automated trading systems as a technological factor was found to influence financial innovations regularly. Finally he argued that global financial competition and integration had an influence on financial innovation with increased financial competition amongst financial institutions influencing financial innovation the most.

Kamotho, (2009) carried out a study on Mobile Phone Banking usage experiences in Kenya The study cover the two main dominant mobile banking service providers; Safaricom and Zain during the three year period 2006-2008, from inception with total outlets of 8000 agents. This number tripled compared to 876 branches and 1424 ATM for commercial banks (CBK, 2008) The study is informed by a quantitative survey on M-Banking services and demand. Data on usage and exploitation patterns was gathered through reliable cluster sampling techniques using comprehensive questionnaire. Kamotho; observed that competition triggers innovation and creativity. Continuous innovation not only yield new products but rather promotes efficiently in the performance of activities. Hence lowering the transaction cost. This finding is also confirmed by Tufano (1989). Contrary to popular wisdom that mobile phone money services are meant for funds transfer and remittances, his findings concluded that 96% of the respondents used the M-banking service as form of funds storage.

2.4 Summary of Literature Review

The study has surveyed the nine empirical studies of financial innovation that we were able to uncover, using quite broad criteria. It is worth noting, however, that only two separate phenomena are covered, since some financial innovations are examined by more than one study. Some summary characteristics are in order that only two studies precede the 1990s and seven have appeared since 2000 and only two studies address the environmental conditions that encourage financial innovations. Thus, the hypotheses advanced by the broad descriptive literature on innovation remain largely untested. Five studies address the characteristics of the customers for and users of financial innovations. Six studies address the diffusion of financial
innovations. The remaining studies examine consequences and (explicitly or implicitly) welfare
3.1 Introduction

This chapter explains the research design, target population, sampling techniques, preparation of data collection instruments and the procedures that were used. This chapter details how the study was carried out. It covers the design that was adopted to conduct the study, how data was collected and eventual analysis of the data in order to generate research findings for reporting.

3.2 Research Design

The research design used was survey co-relational. This entailed collection of data over a period of time. Co-relation between the variables were monitored and observed over a period of time. This design was selected since it allowed for space to check the change in trends over an accepted period of time and give room to other effects of financial innovation that may have affected the results or outcome of the study i.e. the learning curve, competence in use of financial innovation, change in technology and Economic effects. The current research design was chosen because the study was not confined to collection and description of data but sought to determine the existence of certain relationship among the research variables.

3.3 Population

According to Curvery et al (2003) a population refers to an entire group of persons or elements that have at least one thing in common. A population is a group of individuals, objects or items from which samples are taken for measurement. The target population for the study will include four telecommunication companies in Kenya that are registered with the Communication Commission of Kenya (CCK). These are Safaricom limited, Airtel Company, YU Company and Orange Tel. Company. The target population will be 250 respondents.

3.4 Data Collection

The study used primary data collected using questionnaires both structured and unstructured. Questionnaires were designed with snares to check for validity and reliability. They were designed in a way that they ensured that short and precise answers were given; questions were short and concise, where necessary options or multiple choices were used to restrict the answers
were divided into different sections to cater for all the

3.4.1 Data Reliability and Validity

The research instrument was pre-tested on 10 employees of the insurance industry since they form a sample outside our target respondents to establish its validity and reliability. To establish the validity of the research instrument the research sought opinions of experts in the field of study. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity. Cronbach Alpha was used to test the reliability of the research instrument. The value gotten was compared with Alpha value of 0.7. After the pilot study the main survey followed. This pre testing was done immediately after the project approval.

3.5 Data Analysis

The completed questionnaires were edited for completeness and consistency. Quantitative data was analysed using descriptive statistics while qualitative data was analyzed using content analysis. Quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 17.0).

Analysis was then based on descriptive statistics. Descriptive statistics involves the use of absolute and relative (percentages) frequencies, measures of central tendency and dispersion (mean and standard deviation respectively). The study also used multiple regression analysis to establish the relationship between the variables highlighted in the background of this study in chapter one.

The data coded and analysed using the statistical package for social sciences (SPSS). The responses from the unstructured questions was organized into themes due to their qualitative nature and then coded appropriately for analysis. The descriptive analytical techniques such as frequency both (absolute frequency and relative percentage) were used to describe the findings.

The findings were organized, summarized and presented using tables, pie charts, bar graphs and charts for clarity and comparison reasons. Inferential analysis was done using inferential statistics. This included Pearson correlation analysis to determine the linear relationship between effects. ANOVA, the model's significance was tested using analysis of variance (ANOVA) test
conducted at 95% confidence level (\( \alpha \leq 0.05 \)). T-test significance would further, test the significance of the variables included on the model. Since the study dealt with samples, it cannot say we are 100% certain that the difference between the sample and the population is significant.

3.5.1 Analytical Model

The Researcher chooses Regression analysis as it is a statistical technique for analysing the relationship between innovation and competitive advantage. Multiple regressions is a flexible method of data analysis that may be appropriate whenever quantitative variables (the dependent) is to be examined in relationship to any other factors (expressed as independent or predictor variable). Relationships may be non-linear, independent variables may be quantitative or qualitative and one can examine the effects of a single variable or multiple variables with or without the effects of other variables taken into account, (Cohen, West and Aiken, 2003).

The regression model will be:

\[
Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \hat{\epsilon}
\]

Where:

- \( Y \) = Competitive advantage
- \( \beta_0 \) = Regression Constant
- \( \beta_1 \) to \( \beta_3 \) = Coefficient of the factors
- \( X_1 \) = product/service innovation (new innovation products introduced)
- \( X_2 \) = market innovation (different market segment targeted with the innovations dimension)
- \( X_3 \) = Process innovation (Mode/system of products delivery)
- \( \hat{\epsilon} \) = Error term

Whereby: \( \beta_0 \) is regression constant; \( \hat{\epsilon} \) is error term from regression model significance; \( \beta_1 \) to \( \beta_3 \) are regression coefficient;

\( Y \) is the competitive advantage score calculated as the index of items in innovation scale and was the average of the individual scores of the 150 employees sampled.

\( X_1 \) is the product/service innovation (new innovation products introduced);
X_3\) is = Process innovation (Mode/system of products delivery).

Where-as correlational analyses was useful to examine the relationship between scores on two or more variables. Measures that were used include the Pearson R, coefficients of determination and regression analyses. A content analysis scheme was used to enable logical and systematic coding of open ended questions.

The study variables were measured using The Pearson correlation. Pearson R correlation was used to indicate the magnitude and direction of the association between two variables that were on an interval or ratio scale. Coefficients of determination were used to determine how well the regression equations truly represent the set of data.
4.1 Introduction

This chapter presents the data analysis and interpretation. The main objective of the study was to investigate the effects of financial innovation on competitive advantages of telecommunication companies in Kenya. The reliability of the data collected for the study was determined through ascertaining the reliability of the questionnaires used in data collection. The target population of the study was 250.

4.1.1 Response Rate

Sample size was 150 respondents from telecommunications companies in Kenya registered with CCK. Out of 150 questionnaires issued, 112 were filled and returned making a response rate of 75%. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent, so from Mugenda (1999), the response was excellent.

4.2 Demographic Information

Figure 4.1: Years of operation

Source: Research Findings, 2013

The researcher determined the years of operation of the companies. According to the study findings the numbers of years of operations of the four selected telecommunication companies were shown on the figure above. The findings evidently show that all companies have operated for more than five years.
Moreover, the study sought to find out the presence of company in different countries. According to the study findings, telecommunications companies had their presence in different countries majority representing 50% had over ten connections to different countries. 25% of the companies had between five to ten connections to different countries while the 25% of the companies had one presence of the company in different countries.

Figure 4.2: Presence of Company in different countries

Source: Research Findings, 2013

4.3 Effects of financial innovation on competitive advantage

4.3.1 Financial innovations

Figure 4.3: Undertaking Financial Innovation
The respondents were asked to indicate whether their telecommunication company had any financial innovation undertakings. According to the study findings most respondents indicated that their companies had innovations that they were undertaking who accounted for 70% while 30% of the respondents represented those who were not undertaking any financial innovations in their companies. The study deduce that the majority of telecommunications companies have financial innovations that are undergoing indicating growth in the ICT (Information, Communication and Technology) line with more of up-coming innovations on competitive advantages of telecommunications companies in Kenya.

4.3.2 Financial innovation and performance of company

Figure 4.4: Financial innovation affects performance of company

Source: Research Findings, 2013

Figure 4.4 presents the findings of financial innovation affecting performance of the telecommunications companies. According to the study findings 85% of the respondents indicated that financial innovation affected performance of the company while 15% of the respondents indicated that financial innovation did not affect the performance of company. The study deduced that the financial innovations affected performance of the company to a great extent representing 45.5% of the respondents as shown in the figure 4.5 below, 19% rated financial innovation affects performance of the company to a very great extent, 13.4% rated
11.6% rated financial innovation affects performance of the company to a moderate extent, 11.6% rated financial innovation affects performance of the company to less extent while 10.5% rated that financial innovation does not affect performance of the company at all.

Figure 4.5: Extent which financial innovation affects performance

![Financial innovation affects performance of company](image)

Source: Research Findings, 2013

4.3.3 Importance of financial innovation

Figure 4.6 Importance of financial innovation

![Importance of financial innovation](image)

Source: Research Findings, 2013

The respondents were asked to rate the importance of financial innovation for developing services. The results of the findings in figure 4.6 reveal that most respondents 42% representing...
often important of financial innovation, followed by 31.2% representing vital importance of financial innovation while 20.5% representing sometimes important of financial innovation while 6.3% represent little important of financial innovation. The study deduced that the majority of the respondents considered financial innovation as often important, hence financial innovation is important.

4.3.4 Aims of financial innovation

The study sought to find out the aims of financial innovation in the company.

Figure 4.7 Aims of financial innovation

Source: Research Findings, 2013

The respondents were asked to indicate the aims of financial innovation. According to the study findings the aims of financial innovation were rated as 37.5% representing process evaluation, 29.5% representing product evaluation, 20.5% representing product service engineering and 12.5% representing no innovation management installed. The study deduced that the majority of the respondents selected process evaluation as an aim of financial innovation in the company.
The study sought to find out the extent to which positive financial performance is rated by the organisation. According to the study findings the majority respondents rated the dimensions of financial innovations. 95% indicated that product innovation was to a moderate extent positive dimension of financial innovation, 85% indicated that service innovation was to a great extent a positive dimension of financial innovation while 75% indicated that process innovation was to a great extent a positive dimension of financial innovation. The study found that there was no dimension of financial innovation that was rated to little or no extent.

Source: Research Findings, 2013
The study further determined whether the adoption of product innovation encouraged financial performance on the organization’s objectives. According to the study findings the majority of the respondents 65% indicated yes that the adoption of product innovation encouraged financial innovation on the organization’s objectives while 35% indicated no that the adoption of product innovation encouraged financial innovation on the organization’s objectives.
4.2 Extent of Product Innovation on financial innovation

Figure 4.10 Extent of Product Innovation on financial innovation

Source: Research Findings, 2013

The study also found it of importance to determine the extent to which product innovation has encouraged financial performance on the organisations objectives. According to the study findings the majority 40.2% rated the extent of product innovation encouraging financial performance on the organisations objectives to a great extent. 28.5% of the respondents rated the extent to which product innovation has encouraged financial performance on the organisations objectives as moderate. 17.9% of the respondents indicated that product innovation has encouraged financial performance on the organisations objectives to a very great extent. 8.5% of the respondents indicated that product innovation has encouraged financial performance on the organisations objectives to a less extent while 4.5% of the indicated that product innovation did not at all encourage financial performance on the organisations objectives.

4.4.3 Company competitiveness on product innovation

Table 4.1 Competitiveness on product innovation

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>31</td>
<td>27.7%</td>
</tr>
<tr>
<td>Medium</td>
<td>55</td>
<td>49.1%</td>
</tr>
<tr>
<td>Low</td>
<td>26</td>
<td>23.2%</td>
</tr>
<tr>
<td>Total</td>
<td>112</td>
<td>100%</td>
</tr>
</tbody>
</table>
The study sought to find out the company’s competitiveness since the introduction of product innovation. According to the study findings the competitiveness of the company since the introduction of product innovation was rated medium by the majority respondents representing 49.1%, those who rated the competitiveness of the company since the introduction of product innovation as high was representing 27.7% while those that rated the competitiveness of the company since the introduction of product innovation as low was 23.2%.

4.5 Service Innovation

4.5.1 Adoption of service innovation

Figure 4.11 Adoption of service innovation

Source: Research Findings, 2013

The study sought to find out the adoption of service innovation encouraged financial innovation on the organisation’s objectives. According to the study findings the majority of the respondents 75% indicated that the adoption of service innovation encouraged financial innovation on the organisation’s objectives while 25% showed that the adoption of service innovation did not encourage financial innovation on the organisation’s objectives. The study deduced that the service innovation in the telecommunications companies encouraged financial innovation on the organisation’s objectives.
Figure 4.12 Extent of Service Innovation on financial innovation

The figure above presents the extent to which service innovation has encouraged financial innovation on the organisation objectives. According to the study findings the majority 40.2% rated the extent of service innovation encouraging financial performance on the organisations objectives to a very great extent. 28.5% of the respondents rated the extent to which product innovation has encouraged financial performance on the organisations objectives as to a great extent. 17.9% of the respondents indicated that product innovation has encouraged financial performance on the organisations objectives to a moderate extent. 13.4% of the respondents indicated that product innovation has encouraged financial performance on the organisations objectives to a less extent. The study deduced that to a very great extent did service innovation encourage financial innovation.
The study sought to find out the companies competitiveness since the introduction of service innovation. According to the study findings the competitiveness of the company since the introduction of service innovation was rated high by the majority respondents representing 45%, those who rated the competitiveness of the company since the introduction of service innovation as medium was representing 32% while those that rated the competitiveness of the company since the introduction of service innovation as low was 23%. The study deduced that company competitiveness since the introduction of service innovation was high.
Source: Research Findings, 2013

The study sought to find out the adoption of process innovation encouraged financial innovation on the organisation’s objectives. According to the study findings the majority of the respondents 55% indicated that the adoption of process innovation encouraged financial innovation on the organisation’s objectives while 45% showed that the adoption of process innovation did not encourage financial innovation on the organisation’s objectives. The study deduced that the process innovation in the telecommunications companies encouraged financial innovation on the organisation’s objectives.
The figure above presents the extent to which process innovation has encouraged financial innovation on the organisation objectives. According to the study findings the majority 30.4% rated the extent of process innovation encouraging financial performance on the organisations objectives to a great extent. 25% of the respondents rated the extent to which process innovation has encouraged financial performance on the organisations objectives as to a very great extent. 19.6% of the respondents indicated that process innovation has encouraged financial performance on the organisations objectives to a moderate extent. 14.3% of the respondents indicated that process innovation has encouraged financial performance on the organisations objectives to a less extent while 10.7% of the respondents indicate that process innovation did not at all encourage financial performance on the organisations objectives. The study deduced that to a very great extent did service innovation encourage financial innovation.
Company competitiveness on Process innovation

![Company competitiveness on Process innovation](image)

Source: Research Findings, 2013

The study sought to find out the companies competitiveness since the introduction of process innovation. According to the study findings the competitiveness of the company since the introduction of process innovation was rated medium by the majority respondents representing 50%, those who rated the competitiveness of the company since the introduction of process innovation as high was representing 36% while those that rated the competitiveness of the company since the introduction of product innovation as low was 26%. The study deduced that company competitiveness since the introduction of process innovation was medium in telecommunication companies.

4.7 Regression Analysis

Competitive advantage

\[ \hat{b}_0 = \text{Regression Constant} \]
\[ \hat{b}_1 \ldots \hat{b}_3 = \text{Coefficient of the factors} \]

\( X_1 = \text{product/service innovation (new innovation products introduced)} \)

\( X_2 = \text{market innovation (different market segment targeted with the innovations dimension)} \)

\( X_3 = \text{Process innovation (Mode/system of products delivery)} \)
The study sought to investigate the effects of financial innovation on competitive advantages of telecommunication companies in Kenya. The factors investigated were: product/service innovation, market innovation, Process innovation. The regression model was:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \]

Whereby \( Y \) represent the Competitive advantage, \( X_1 \) is product/service innovation, \( X_2 \) is market innovation, \( X_3 \) and is Process innovation. \( \beta_0 \) is the model's constant, and \( \beta_1, \beta_2, \beta_3 \) are the regression coefficients while \( \epsilon \) is the model's significance from f-significance results obtained from analysis of variance (ANOVA).

**Table 4.2: Model's Goodness of Fit Statistics**

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>.745(^a)</td>
<td>.555</td>
<td>.509</td>
<td>.19610</td>
<td>1.874</td>
</tr>
</tbody>
</table>

\(^a\) Predictors: (Constant), Product/service innovation, Market innovation and Process innovation

Table 4.2 shows that there is a good linear association between the dependent and independent variables used in the study. This is shown by a correlation (R) coefficient of 0.745. The determination coefficient as measured by the adjusted R-square presents a moderately strong relationship between dependent and independent variables given a value of 0.509. This depicts that the model accounts for 50.9% of the total observations while 49.1% remains unexplained by the regression model.

Durbin Watson test was used as one of the preliminary test for regression which to test whether there is any autocorrelation within the model's residuals. Given that the Durbin Watson value was close to 2 (1.874), there was no autocorrelation in the model's residuals.

**Table 4.3: Analysis of Variance (ANOVA)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1.389</td>
<td>4</td>
<td>.463</td>
<td>12.043</td>
<td>.043(^a)</td>
</tr>
<tr>
<td>Residual</td>
<td>1.115</td>
<td>159</td>
<td>.038</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
a. Predictors: (Constant), Product/service innovation, Market innovation and Process innovation

b. Dependent Variable: Competitive advantage

The ANOVA statistics presented in Table 4.9 was used to present the regression model significance. An F-significance value of $p = 0.043$ was established showing that there is a probability of 4.3% of the regression model presenting a false information. Thus, the model is significant.

**Table 4.4: Regression Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>3.606</td>
<td>.433</td>
</tr>
<tr>
<td>Product/service innovation</td>
<td>-.646</td>
<td>.126</td>
</tr>
<tr>
<td>Market innovation</td>
<td>.675</td>
<td>.378</td>
</tr>
<tr>
<td>Process innovation</td>
<td>.158</td>
<td>.078</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Competitive advantage

The following regression result was obtained:

$$Y = 3.606 - 0.646X_1 + 0.675X_2 + 0.158X_3 + 0.096X_4$$  \hspace{1cm} P=0.043

From the model, when other factors (product/service innovation, market innovation, Process innovation, Number of employees) are at zero, the Competitive advantage will be 3.606. Holding other factors constant, a unit increase in product/service innovation would lead to 0.646 ($p=.002$) decrease in Competitive advantage. Mas (2008) established that cost of operating an agent bank negatively influences Competitive advantage.

However, holding other factors constant, a unit increase in market innovation would lead to a 0.675 ($p=0.027$) increase in Competitive advantage. This concurs with Kathambi (2009) who established that security concerns to large extent affect the Competitive advantage.
Table 4.10 also shows that holding other factors constant, a unit increase in IT innovation would lead to a \[0.158\](p=0.03) increase in Competitive advantage. This is in line with Nsouli and Schaechter (2002) findings that Competitive advantage’s profitability is highly sensitive to service disruptions. These results show that when acting jointly, improvement in market innovation, and IT Process innovation would improve Competitive advantage. However, cost involved in setting up and Competitive advantages negate performance of the same.

4.8 Summary & Interpretation of the findings

The study objective was to investigate the effects of financial innovation on competitive advantages of telecommunication companies in Kenya. The study further determined whether the adoption of product innovation encouraged financial performance on the organization’s objectives. According to the study findings the majority of the respondents 65% indicated yes that the adoption of product innovation encouraged financial innovation on the organization’s objectives while 35% indicated no that the adoption of product innovation encouraged financial innovation on the organization’s objectives. These study findings are in line with Rothwell, (1992) who talks of his eight characteristics for successful process innovation as project execution or tactical variables. He distinguishes these from higher level strategic variables such as a corporate strategy which places innovation as a key priority. Although there could be well-organised innovation projects in firms that lacked a corporate strategy for innovation, it is better to have both. Ideally an innovation strategy should involve a long-term commitment to major projects that address company development

On seeking to establish the importance to determine the extent to which product innovation study also found it of importance to determine the extent to which product innovation has encouraged financial performance on the organisations objectives. According to the study findings the majority 40.2% rated the extent of product innovation encouraging financial performance on the organisations objectives to a great extent. 28.5% of the respondents rated the extent to which product innovation has encouraged financial performance on the organisations objectives as moderate. 17.9% of the respondents indicated that product innovation has encouraged financial performance on the organisations objectives to a very great extent. 8.5% of the respondents indicated that product innovation has encouraged financial performance on the organisations objectives to a less extent while 4.5% of the indicated that product innovation did not at all
This study was in line with Tufano's (1989) research on Financial Innovation and first mover advantages. The objective of the study was to determine whether financial products innovators enjoy first mover advantages. The data was collected from 1,944 publicly traded securities, where he specifically used a sample of 58 innovation to test whether investment banks that create new securities benefits by charging higher prices (underwriting charges) than imitators or by capturing large quantities. The study was conducted over the period 1974-1986 and who concluded that investment banks that created new financial products did not charge higher prices in the period before imitative products appear and in the long run charges lower than rivals. However, these innovators did underwrote more public offerings that they innovated, than did the imitating rivals. Overall, Tufano's results was not consistent with monopoly pricing of new securities issues by innovators, but rather with the presence of cost advantages that allow these institutions to capture market shares.
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter consists of the summary of findings, conclusion and recommendation of the study and there after the suggestions for further studies respectively.

5.2 Summary of Findings

The summary of the findings were done according to the objectives of the study obtained in chapter four. From the study findings, respondents were from Safaricom, Airtel, YU and Orange telecommunications companies in Kenya. The respondents were asked to indicate the number of years their company has been operating and the response indicated that all companies have operated for more than five years. The study also determined the presence of the company in different countries where by majority respondents indicated that two of the selected companies had their presence in different countries.

The study found of paramount importance to investigate the effects of financial innovation on competitive advantage of telecommunication companies in Kenya. On the aspect of financial innovation, the respondents indicated that financial innovations are undergoing growth in the ICT (Information, Communication and Technology) line with more of up-coming innovations on competitive advantages of telecommunications companies in Kenya. The results of the findings revealed that most participants consider financial innovation affects performance of the telecommunications companies to a great extent.

The researcher further studied the importance of financial innovation in developing services. The results depicted that the importance of financial innovation in developing services is often important. The study also determined the aims of financial innovation in the company and the majority of the respondents selected process evaluation as an aim of financial innovation in the company. The study determined the extent to which positive financial performance is rated by the organisation and the majority respondents indicated that service innovation had positive financial performance in the organisation. The study further determined whether the adoption of
The study also found it of importance to determine the extent to which product innovation has encouraged financial performance on the organisations objectives and the respondents indicated that product innovation has encouraged financial performance on the organisations. The study sought to find out the companies competitiveness since the introduction of product innovation and the majority response rated product innovation as medium.

The study sought to find out the adoption of service innovation encouraged financial innovation on the organisation’s objectives and the majority respondents indicated service innovation in the telecommunications company encouraged financial innovation on the organisation objectives. The study deduced the extent to which service innovation has encouraged financial innovation on the organisation objectives to a very great extent. The study determined the companies competitiveness since the introduction of service innovation as high.

The study sought to find out the adoption of process innovation encouraged financial innovation on the organisation’s objectives and deduced that process innovation in the telecommunications companies encouraged financial innovation on the organisation objectives and to a great extent. The study also determined the companies competitiveness since the introduction of process innovation and deduced that since the introduction of service innovation, it was rated medium in telecommunication companies.

5.3 Conclusion

According to the objective of the study that was to investigate the effects of financial innovation on competitive advantages of telecommunication companies in Kenya, the study made conclusions based on the objective of the study.

Telecommunications companies indicate growth through financial innovations that gives them a competitive advantage in the ICT (Information, Communication and Technology) field.

Financial innovation affects positively the performance of telecommunications companies to a great extent hence they are considered often important for developing services in the
Telecommunication companies have different aims of financial innovations that provide the companies with the competitive advantage. From the study the major objective of financial innovation is process evaluation.

The dimensions of financial innovations were identified as product, service innovation and process innovation. From the study, product innovation was rated to a great extent having the greatest positive financial performance according to the organisation’s objectives.

5.4 Recommendations for Policy

The research findings recommend that telecommunications companies should have financial innovations on competitive advantage in Kenya with companies registered under CCK.

The study recommends that financial innovation should be recommended as it is important in service development in the telecommunications companies.

Telecommunication companies should provide for the aims of financial innovation that provide the companies with different dimensions that include product innovation, service innovation and process innovation.

5.6 Limitations of the study

The limiting factors of this study include: Due to the veil of confidentiality surrounding the many firms, most of the respondents may be reluctant to participate. However, the researcher assured the respondents that the findings would be used for academic purposes only. Due to their busy business schedules, customers might not be willing to participate. The respondents were given ample time to fill the questionnaires.

This study could also be limited by the sample of selected respondents at the four selected telecommunications companies i.e. Safaricom Company Limited, Airtel Kenya Limited, Telkom Kenya (Orange) and Yu mobile network.
Recommendation for Further Research

This study focused on the effects of financial innovation on competitive advantages of telecommunication companies in Kenya. The study recommends that further research can be carried out on factors affecting financial innovations in telecommunication companies in Kenya and the influence of competitive advantage on financial innovation in telecommunication companies so as to establish a greater understanding by widening the research field.
REFERENCE


APPENDIX 1: QUESTIONNAIRE

THIS IS A SAMPLE QUESTIONNAIRE ON THE EFFECT OF FINANCIAL INNOVATION ON COMPETITIVE ADVANTAGES OF TELECOMMUNICATION COMPANIES IN KENYA.

A: GENERAL INFORMATION

1. Name of the Company

2. How long has your company been in operation?

   Below 1 year ( )
   1-2 Years ( )
   2-4 years ( )
   5 years and above ( )

3. How many countries does your company have presence?

   (a) One ( )
   (b) 2-3 ( )
   (c) 4-6 ( )
   (d) Over 7 ( )

B. EFFECT OF FINANCIAL INNOVATION ON COMPETITIVE ADVANTAGES

1. Do you consider your Institution to be innovative with respect to any of the following categories?
   (a) A new financial product or service introduced. (Product/service innovation)

      Yes ( ) No ( )

   (b) A new market segment targeted with the innovation dimension.

      Yes ( ) No ( )
2. Does this financial innovation affect the performance of company?

Yes ( ) No ( )

If yes, to what extent does it affect the performance of company?

Very great extent ( )
Great extent ( )
Moderate extent ( )
Less extent ( )
Not at all ( )

3. How important is financial innovation for developing services?

Not important ( )
Little important ( )
Sometimes important ( )
Often important ( )
Vital important ( )

4. What are the aims of financial innovation in your company?

Process evaluation ( )
Product evaluation ( )
Product service engineering ( )
No innovation management installed ( )
dimensions of financial innovations. To what extent does financial performance result of your company?

<table>
<thead>
<tr>
<th></th>
<th>Very great extent</th>
<th>Great extent</th>
<th>Moderate extent</th>
<th>Little extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. Product Innovation

1. Has the adoption of Product Innovation encouraged financial innovation on the organization's objectives?
   - Yes ( )  No ( )

2. If yes, to what extent has Product Innovation encouraged financial innovation on the organization's objectives?
   - Very great extent ( )
   - Great extent ( )
   - Moderate extent ( )
   - Less extent ( )
   - Not at all ( )

3. How would you rate the company competitiveness since the introduction of Product Innovation?
   - High ( )
   - Medium ( )
   - Low ( )

52
Innovation encouraged financial performance on the organization's objectives?

Yes  ( )  No  ( )

2. If yes, to what extent has this service Innovation encouraged financial performance on the organization's objectives?

Very great extent  ( )
Great extent  ( )
Moderate extent  ( )
Less extent  ( )
Not at all  ( )

3. How would you rate the company competitiveness since the introduction of service Innovation?

High  ( )
Medium  ( )
Low  ( )

E. Process Innovation

1. Has the adoption of process Innovation encouraged financial performance on the organization's objectives?

Yes  ( )  No  ( )

2. If yes, to what extent has the adoption of process Innovation encouraged financial performance on the organization's objectives?

Very great extent  ( )
Great extent  ( )
Moderate extent  ( )
Less extent  ( )
Not at all  ( )
3. How would you rate the company competitiveness since the introduction of process innovation?

   High ( )
   Medium ( )
   Low ( )

4. Kindly suggest the appropriate finance management systems you can advocate and recommend the organization to invest in for the effectiveness of more financial performance.

(Thank You Very Much for Your time and attention)
LIST OF REGISTERED TELECOMMUNICATION COMPANIES IN KENYA

- Safaricom Company Limited
- Airtel Kenya Limited
- Telkom Kenya (Orange)
- Yu mobile network