INFLUENCE OF TELECOMMUNICATION INDUSTRY LIBERALIZATION ON TECHNOLOGICAL INNOVATION STRATEGY OF SAFARICOM, KENYA

BY

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DECLARATION

This Research Project is my original work and has never been presented for an award in any other university.

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This Research Project has been presented for examination with my approval as the University Supervisor.

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DEDICATION

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TABLE OF CONTENT

TITLE **PAGE**

DECLARATION ..... **i**

ACKNOWLEDGEMENT ..... **ii**

DEDICATION ..... **iii**

TABLE OF CONTENT ..... **iv**

LIST OF TABLES ..... **vii**

LIST OF FIGURES ..... **viii**

ABBREVIATIONS AND ACRONYMS ..... **ix**

ABSTRACT ..... **xi**

CHAPTER ONE **1**

INTRODUCTION **1**

1.1 Background of the Study 1

1.2 Statement of the Problem 4

1.3 Purpose of the Study 7

1.4 Objectives of the Study 7

1.5 Research Questions 7

1.6 Significance of the Study 8

1.7 Limitations of the Study 8

1.8 Delimitations of the Study 9

1.9 Basic Assumptions of the Study 9

1.10 Definitions of Significant Terms used 10

1.11 Organization of the Study 11

CHAPTER TWO **13**

LITERATURE REVIEW **13**

2.1 Introduction 13

2.2 Liberalization in Telecoms Industry 13

2.2.1 Responding to Liberalization in the Telecoms Sector 15

2.2.2 Telecommunication liberalization in Africa 18

2.2.3 Policy Regulatory Framework in Kenya 22

2.2.4 Liberalization and Innovation in the Telecommunications Industry 26
2.3 Theoretical Framework 29
2.4 Conceptual Framework 33
2.5 Summary of Reviewed Literature 35
CHAPTER THREE 36
RESEARCH METHODOLOGY 36
3.1 Introduction 36
3.2 Research Design 36
3.3 Target Population 36
3.4 Sample Size and Sample Selection 37
3.5 Research Instruments 37
3.5.1 Pilot Testing 38
3.5.2 Validity of the Instruments 39
3.5.3 Reliability of the Instruments 39
3.6 Data Collection Procedure 41
3.7 Data Analysis Techniques 41
3.8 Ethical Considerations 42
CHAPTER FOUR 43
DATA ANALYSIS AND PRESENTATION, INTERPRETATION AND DISCUSSIONS 43
4.1 Introduction 43
4.2 Response Return Rate 43
4.3 Demographic Information 43
4.3.3 Years of Service in the Company 45
4.3.4 Designation of Respondents 46
4.4 Effect of Government Policies 47
4.5 Effect of Cutthroat Competition 50
4.6 Employee Compensation and Its Effect on Innovation Strategy 54
4.7 Innovation Strategies employed by Safaricom 56
CHAPTER FIVE 62
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 62
5.1 Introduction 62
5.2 Summary of Findings 62
5.3 Conclusions 67

5.4 Recommendations 69
5.5 Suggestions for Further Research 70
REFERENCES **71**
APPENDICES **79**
Appendix I: Letter of Transmittal 79
Appendix II: Questionnaire for Safaricom Employees 80

LIST OF TABLES

Table 4.1: Gender of the Respondents 44

Table 4.2: Age of Respondents 45

Table 4.3: Years of Service in the Company 46

Table 4.4: Designation of Respondents 47

Table 4.5: Effect of Government Policies 48

Table 4.6: Effect of Cutthroat Competition 51

Table 4.7: Innovative Responses by Safaricom 57

LIST OF FIGURES

Figure 2.1: Conceptual Framework 34

ABBREVIATIONS AND ACRONYMS

ARNT	Agence Nationale de Reglementation des Télécommunications
AT&T	American Telephone & Telegraph
CAP	Competitive Access Providers
CCK	Communications Commission of Kenya
CTROS	Commercial Trunk Radio Operators
ECA	Economic Commission for Africa
FCC	Federal Communications Commission
GATS	General Agreement on Trade and Services
GSM	Global System for Mobile
ICT	Information Communication Technology
IMT	International Mobile Telecommunications
ISP	Internet Service Provider
ITU	International Telecommunications Union
KCA	Kenya Communications Act
KP&TC	Kenya Posts and Telecommunications Corporation
MCI	Microwave Communications Inc
MHz	Megahertz
NEPAD	New Partnership for African Development
NCS	National Commission Secretariat
OFTEL	Office of Telecommunications
OFTA	Office of the Telecommunications Authority
PTT	Postal Telephone & Telegraph

RA	Radio communications Agency
RBOC	Regional Bell Operating Companies
RTOS	Rural Telecommunications Operators
UNCATD	United Nation Conference on Trade and Development
UMTS	Universal Mobile Telecommunications System
USO	Universal Service Obligation
WSIS	World Summit on the Information Society
WTO	World Trade Organization

ABSTRACT

The purpose of this study was to investigate the effect of telecom industry liberalization on Safaricom's technological innovation strategy. The World Trade Organization (WTO) has prescribed liberalization of the telecom markets in the world to facilitate growth and competition in the industries which would enhance economic and social advancement. Many countries, including Kenya, have endorsed the WTO's liberalization guidelines and opened their telecom market to many players leading to open and competitive market environment. This study therefore examined how telecommunication operators are capitalizing on technology innovation as a response to consumer demands and market changes. The study employed a descriptive survey research design. A self administered questionnaire was used as the primary data collection instrument. The population of the study was all employees of the M-Pesa division, Safaricom Ltd. A sample of 50 respondents was selected using stratified random sampling technique. Data was analyzed with the aid of Statistical package for social scientists (SPSS) which generated results in form of percentages, frequency distributions and means scores. Presentation of the findings was in form of tables, charts and graphs. Study findings indicate that liberalization has brought with itself challenges which have threatened many telecom industries. However Safaricom has responded swiftly to these challenges and incorporated an innovative culture which has been touted as the driver of its growth. M-Pesa represents the most successful innovation strategy in Safaricom's localization process. Study findings also indicate that there are a host of challenges brought by liberalization of the telecom industry which included cutthroat competition, increase in operating and other selling expenses, biasness of regulations which seem to

favour some players, a company being forced to continuously improve its products to thrive in the industry and unwelcome government regulation. Findings indicate that Safaricom has over the years adopted innovative policies which are touted as its vehicles to growth and advancement. Safaricom has used creativity and innovativeness to create the best products and services and it has managed to partner with other service providers. The M-Pesa product has brought many customers into the network and helped Safaricom to gain a competitive edge over its rivals. Safaricom also continuously upgrades its network and supports and rewards creative thinking. This innovation at Safaricom is backed by a full department, Value Added Service. From the findings, the following recommendations are made: Companies in the telecom industry need to continually reinvigorate themselves to remain relevant in the telecom industry which over the years has proved to be dynamic, complex and turbulent. To ensure survival, the companies need to respond effectively to the various challenges brought about by liberalization among them cutthroat competition; The government needs to come up with effective and workable policies and regulations which when implemented will spur growth in the telecom industry and; Telecom companies need to give their clientele new and innovative products that fit their purpose and are economical. This calls for investment in incorporating a culture of creativity in employees and rewarding innovative ideas.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The telecommunications industry, also called the telecom industry, is an industry sector which is characterized by the provision of products and services that help individuals and businesses exchange information electronically over long distances. The telecommunications industry has made its mark in history over the last decade. It has experienced a series of dramatic changes since its inception in the 1880s (Bennett, Bijl and Canoy, 2001). After a flourishing start, wide-ranging in form and structure, the telecommunications industry developed gradually into a public-owned industry without competition. Moreover, during the first half of the 20th century, the telecommunications industry became a relative stable industry worldwide. Nonetheless, in the 1950s, thoughts of liberalizing the telecommunications industry started to develop gradually. The United States of America (USA) was the first country to liberalize the telecommunications market after which other countries also started to deregulate theirs'. In the past three decades, due to the latest liberalization and privatization wave in the world, the telecommunications industry has turned into a dynamic environment and is rapidly growing (Graack, 1996).

For nearly a century, telecommunication was a sleepy, provincial business. Each country had its own Postal Telephone & Telegraph (PTT) administration controlling everything related to communications, from the phone on the desk to the phone line overseas (Cave, 1997). Also, local equipment makers carved out cozy relationships with

their PTTs. That world is fast coming apart. Technology is changing so rapidly that equipment formerly enjoying a 30-year lifecycle is becoming obsolete almost as soon as it is installed. As quickly as new technology creates new products, customers everywhere want a wider choice of telecommunications services. Customers are demanding more of their communication systems, because, to be competitive, they have to automate more functions – Laffont. These powerful winds of change are forcing most governments to re-examine the regulations governing the PTTs. This has led to the convergence of previously distinct industries such as the telecommunications, information technology, entertainment, media, and consumer electronics into a new industry, the so-called multimedia information industry (Chan-Olmsted & Jamison, 2001).

In 1884, Alexander Graham Bell invented the first telephone. This innovation introduced a complete new way of communication. It made communication more efficient and faster. The innovation altered not only the types of communications services available, but also the industry's cost structure and the degree of substitutability and complementarities of services and products. Before the telephone could be put in use, however, an extensive infrastructure had to be constructed and the technology had to be made more robust to handle long-distance calls (Casson, 1971; Wallsten, 2001). These conditions required huge and risky investments and as a consequence, they were carried out by the government. The government of the USA was the first to adopt and implement the telephony technology next to the telegraph system. Because of privately owned telegraph system in the U.S., the government was less obligated to protect this industry (Wallsten, 2001). The policy of the U.S. was to stimulate fair market competition.

The competition in the USA increased when the Bell patents expired in 1894. Due to these developments the U.S. showed the highest telephone penetration at that time (Wallsten, 2001). However, other countries were reluctant to accept the new communications system. Their governments rather wished to remain with the telegraph services, since this was a state monopoly that provided power and high pay-offs. When telephone technology became legitimate, the governments, particularly in Europe, were also forced to incorporate the new communications technology within their system. Some governments introduced the technology in their own control and the use of the telephone under strict measures, while others let private companies take their chances. In Germany, for example, the public was not allowed to lend their telephone to the neighbors. If they did, they so, they risked a punishment of six months in jail (Casson, 1971). In other countries, such as those in Scandinavia, a more liberal approach was taken.

In general, liberalization refers to a relaxation of previous government restrictions, usually in areas of social or economic policy. In some contexts this process or concept is often, but not always, referred to as deregulation. Liberalization usually means the process of transferring monopolistic market to a free market environment, which will expand trade relation and also promote competition. Liberalization encourages the lifting of barrier to entry to accommodate many players in the market and hence transform a market into a free and open market. The World Trade Organization has prescribed liberalization of the telecom market. Many countries have endorsed the WTO's liberalization guideline and subsequently opened their telecom markets leading to

open and competitive market systems (Chaturvedi, 2003). Specifically, it has brought about an era of competition in the telecom sector.

A fully liberalized telecommunications market is characterized by: freedom of entry and exit for every supplier regardless of their nationality, with this right extending not only to the service level but also to the infrastructure level; users' revealed preferences alone determine the commercial viability of specific services and infrastructures and, as a result of these purchasing decisions, also the degree of transnationality of their providers (Gardner, 2004). This necessitates low switching costs which, amongst other things, may be secured by granting the consumers the right to full number portability; an independent regulatory body — either a sector-specific agency or the competition authority, or both — is responsible for creating and maintaining a 'level playing field', characterized by the strict separation of commercial and regulatory activities, by non-discrimination between competing public and private operators in key areas such as taxation, market access (including interconnection rules) and state aids, and by (the threat of) antitrust action to prevent and/or sanction restrictive business practices; universal service obligations, if deemed necessary by a government, are imposed in a competitively neutral manner only. Universal service should be auctioned off to the agent willing and able to supply this service in return for the lowest amount of state subsidies.

1.2 Statement of the Problem

Many countries are opening most or all segments of their telecommunications sector to competition. Once you learn the rules of liberalization in the US or UK, they

become largely applicable across an entire nation that represents a major world market. Overall impact costs are eased through national economies of scale. Developing countries, in contrast, are economically small and fragmented. Afrikanus (2007) in his study of Nigerian telecom industry found that liberalization concepts borrowed from the west did not perfectly fit the African telecom environment and therefore did not always bring the required results. The study seeks to find out whether the liberalization process employed in Kenya has been beneficial in stimulating innovation or whether it has presented bigger challenges, risks or inefficiencies. In spite of the fact that there is no universal reform model, there is now a significant base of experience around the world from which we can derive lessons that need to be learned. The goal should be a more efficient sector delivering quality service while fulfilling its social responsibilities. Experience reveals, however, that successfully introducing effective competition in telecommunications usually requires more than simply eliminating barriers to entry in the various segments of the market. Proper regulation also plays an important part in procuring effective competition to achieve ultimate liberalization. Effective management of policy issues requires the regulators with adequate powers, transparent decision-making, and clear and stable policies.

Infrastructure industries have traditionally been monopolies, owned and operated by the public sector. For much of the 20th century, infrastructure services in most countries were provided by state-owned utilities that were vertically integrated. Although this model initially produced some desirable results, it ultimately led to serious problems for the public interest, especially in developing countries (World Bank, 2004). Before the

liberalization, the telecommunications sector was characterized by monopoly control, excess debt, corporate fraud, overcapacity, high costs and low quality of services, limited access to technology and telecommunications infrastructure and shortage of trained personnel. Liberalizing the telecommunications markets therefore was necessary in order to redeem the industry. This opened up incumbent operators to stiff competition from world renowned telecommunication operators, which necessitated telecommunications operators to strategize themselves in order to flourish in the liberalized market. Those that do not adjust their business model will miss tremendous opportunities, or even worse, lose their position in the market. Liberalization may lead to the establishment of a few big private players and phase out the small operators. Also, if local players are too small, they might prove too fragile to resist global competition in a liberalized market. Operators have used strategies such as: Merging of two or more operators in order to boost their capital base, restructuring and employee lay-offs that were characterized by the state owned monopolies, and privatization.

Musila (2005) studied the impact of Liberalizing of trade within COMESA to local companies' export and import, Mulwa, Emrouznejad and Murithi (2009) studied the effect of liberalization in the sugar industry, Michael and Mlambo (2009) studied the effect of economic and political liberalization on financial development in African countries. No Known local study has been carried out in the telecommunications industry to assess whether the liberalization that has been taking place from the late 1990s has spurred benefits to the stakeholders. This study therefore sought to fill this gap.

1.3 Purpose of the Study

The purpose of the study was to investigate influence of telecom industry's liberalization on Safaricom's technological innovation strategy.

1.4 Objectives of the Study

The study was guided by the following objectives:-

1. To establish the extent to which government policies on liberalization of telecom industry have influenced Safaricom's technological innovation strategy
2. To determine the extent to which cutthroat competition as a result of telecom industry's liberalization has influenced Safaricom's technological innovation strategy
3. To assess the extent to which employee compensation as a result of telecom industry's liberalization has influenced Safaricom's technological innovation strategy
4. To explore the strategies used by Safaricom Limited as a response to telecom industry's liberalization to improve technological innovation in Kenya.

1.5 Research Questions

The study sought to answer the following research questions;

1. What are the government policies on liberalization of telecom industry sector that have influenced Safaricom's technological innovation?
2. How has cutthroat competition as a result of telecom industry's liberalization has influenced Safaricom's technological innovation strategy?

3. How has employee compensation as a result of telecom industry's liberalization influenced Safaricom's technological innovation strategy?
4. In which ways have strategies used by Safaricom Limited as a response to telecom industry's liberalization improved technological innovation in Kenya?

1.6 Significance of the Study

It is hoped that the study and the associated recommendations will be of benefit to the government and telecommunication stakeholders in formulating strategies necessary to streamline the sector. As the telecommunication industry is backbone of other industries in the country as well as key to the economical growth, the findings of the research to be carried out will help the Kenyan government in enticing and encouraging technological innovation, which is key to the growth of the mobile telephone industry. The investment required for this market is huge, and the capital equipments are also industry specific. So the government will use this study and its recommendations to play a leading role in providing a conducive environment in terms of effective development and implementation of sound regulatory policies, which will promote the country's economic growth.

1.7 Limitations of the Study

The study was a case study of Safaricom Limited, and as such, the lessons learnt from the study may not apply to a mobile telecommunications operator outside Kenya because market conditions are different from country to country depending on the level of liberalization. Also, respondents in the target population were reluctant to divulge some of the required information due to their company's information policy. However,

this limitation was mitigated by assuring the respondents that the information provided was for academic purposes only and was to be held in strict confidence.

1.8 Delimitations of the Study

The study considered only telecommunication operators and specifically focused on the M-Pesa product by Safaricom Ltd. The study focused on M-Pesa product by Safaricom since the product was the first of its kind in the world and has evolved a lot since its inception. This therefore was expected to provide the information which was relevant to this study. Having survived the past decade of telecommunication liberalization, the company had also proven to be innovative enough to stand the telecommunications wave in the market. In order to gain a wide picture of how the telecommunications sector had evolved over the years, the investigator started with a global view, and gradually narrowed down to Africa, Kenya and Safaricom Limited in particular.

1.9 Basic Assumptions of the Study

The main assumptions of this study were that the sample/respondents selected for the study fairly represented the whole population, the instruments used (self-administered questionnaires) were valid, and measured the desired constructs and that all the respondents answered the study questions honestly and truthfully.

1.10 Definitions of Significant Terms used

Deregulation - The removal or simplification of government rules and regulations that constrain the operation of market forces.

Divestiture - The partial or full disposal of an investment or asset through sale, exchange, closure or bankruptcy.

Foreign Direct Investment - Long term participation by country A into country B. It usually involves participation in management, joint-venture, transfer of technology and expertise

Globalization - A process by which regional economies, societies, and cultures have become integrated through a globe-spanning network of communication and trade.

Innovation - Is the process by which an idea or invention is translated into a good or service for which people will pay.

Liberal – The art of making less strict.

Microwave Technology – The transmission of electromagnetic waves through air (the medium) using frequencies ranging between 300MHz and 300GHz.

Monopoly - A situation in which a single company owns all or nearly all of the market for a given type of product or service.

Policy Framework - Set of principles and long-term goals that form the basis of making rules and guidelines, and to give overall direction to planning and development of the organization

Restructuring - The corporate management term for the act of reorganizing the legal, ownership, operational, or other structures of a company for the purpose of making it more profitable, or better organized for its present needs

Revolution - A drastic and far-reaching change in ways of thinking and behaving.

Service level Agreement - is a part of a service contract where the level of service is formally defined.

Telecommunications - The sharing of information over a distance.

Traffic - The amount of data that is either sent to or from the server on which a website is hosted.

Universal Service Obligation - The universal service obligation (USO) is the obligation placed on universal service providers to ensure that standard telephone services, payphones and prescribed carriage services are reasonably accessible to all people on an equitable basis, wherever they reside or carry on business.

Wireless Technology - Is the transfer of information over a distance without the use of enhanced electrical conductors or "wires".

1.11 Organization of the Study

This Research Project contains the preliminary pages and three chapters. The preliminary pages include the title page, the declaration page, acknowledgement, dedication, abstract, table of contents, list of tables, list of figures and the list of abbreviations. Chapter One entails an introduction of the research project. The chapter consists the background of the study, statement of the research problem, the purpose of the study, the objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, basic assumptions of the study, definition of terms used in the study and the organization of the project. Chapter two contains review of literature, conceptual framework and the summary of the whole chapter. Chapter three contains the research methodology which includes the research

design, the target population, sample selection and size, research instruments, reliability of the instruments, data collection procedure and data analysis and techniques. Chapter four entails data analysis and interpretation of the data for ease of understanding. Chapter five includes the summary of the major findings, conclusions from the study and recommendations made in the study after considering the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers literature review on liberalization of telecommunications, its challenges and its effect on the industry players. First, the broad concept of liberalization is presented on the basis of which the technological innovation strategies are introduced and their components reviewed in detail. An empirical overview of the relationships between liberalization and firm's technological innovation strategies is also presented.

2.2 Liberalization in Telecoms Industry

Telecommunications industry was traditionally a natural monopoly, where the telecom services and the collection of products were supplied by one Telecommunication Company. In a monopolistic market structure, the company and the industry are identical. The single company makes all the output and price decisions, it has complete control over the market (Gerber & Braun 1998). Traditionally, the telecom service providers, or operators have been government-owned monopolies.

One major problem with telecom monopoly is that monopolist may exploit its market position by charging excessive prices and compromise quality of service. With the reforms in the telecom industry, came a series of restructuring of the telecom industry. Today most developed countries are or have introduced competition in the telecom market that was once monopolistic in nature. Driven by technological developments, competition has come to dominate a market that was once a monopoly.

For instance, in 1976 in the U.S, the traditional monopoly service provider was faced with competition in the long-distance market from use of microwave technology (Gerber & Braun, 1998). The development of wireless technology has brought in competition in the telephony market, with fixed line subscribers migrating to cellular markets where there are competitive services. In Africa, most fixed line operators are still monopoly in nature, however there is competition in the cellular market.

The 1990s witnessed a major revolution in telecommunications policy in North America and Europe (Wallsten, 2001). Although telecommunications liberalization had begun in the United States in the 1970s and in the United Kingdom in the mid-1980s, there was no consensus on the need to substitute competition for private or public monopoly on either side of the Atlantic until recently. The United States had a clear first-mover advantage in some markets, but the EU and Canada strived mightily to catch up. Most of the world's telecommunications systems were government owned at the time, and as a result, most countries did not have a need for regulatory authorities to check the monopoly power of private telephone companies, with the major exceptions being found in the United States and Canada.

The American Telephone and Telegraph Company dominated the U.S. telecommunications sector until 1984, when it was broken up into a long-distance and manufacturing company, AT&T, and seven regional Bell operating companies that offered local service, limited-range long-distance service, and directory services (Wellenius et al, 1989). Long-distance service had been opened to competition in the

1970s, and this competition became much more intense after the 1984 divestiture. In the United States, all interstate services were regulated by the Federal Communications Commission (FCC), but intrastate (including local) services were regulated by state commissions. In the case of Europe, European telecommunications companies were government-owned monopolies as late as 1990. The United Kingdom had privatized its national carrier in 1984 and allowed limited entry in 1985. A few countries followed suit, but the other EU countries had not begun to privatize their national monopolies in 1990, much less to admit competition.

2.2.1 Responding to Liberalization in the Telecoms Sector

A prominent characteristic of the telecommunications sector is the extent to which it is influenced by government policy and regulation (Ndukwe, 2000). The forces these exert on the sector are inextricably tied to technological and market forces. Because of the pervasive nature of information and communication technologies and the services that derive from them, coupled with the large prizes to be won, the telecommunications sector is subjected to a lot of attention from policymakers. Particularly over the past 20 years or so, telecommunications policy and regulation have been prominent on the agendas of governments around the world. This reflects the global trend toward liberalization, including, in many countries, privatization of the former monopoly telecoms. However, interest from policymakers in telecommunications goes much deeper than this. A great deal of this interest stems from the extended reach and wide impact that information and communication technologies have. Given this background of the pervasive impact that

information and communication technologies have, it is hardly surprising they get heavy policy attention.

Many national regulatory authorities today are separate from central government, and they are, nevertheless, built on foundations of government policy. Indeed, the very act of creating an independent regulatory body is a key policy decision. Historically, before telecommunications privatization and liberalization came to the fore, regulation was often carried out within central government, which also controlled the state-run telecoms (Afrikanus, 2007). That has changed in recent years in almost all countries. Given their policy foundation, and the fact that government policies vary from country to country and from time to time, it is not surprising that regulatory environments evolve and differ from country to country. These evolutions and international variations sometimes pose planning problems for the industry, and these problems can lead to frustrations and tensions between companies and regulatory agencies. They can also lead to disagreements between countries (for example, over trade issues).

Moves to encourage international harmonization of regulatory regimes (for example, by the ITU and by the European Commission) have been partially successful, differences remain in the ways in which countries interpret laws and recommendations. Moreover, given that regulations need to reflect changing market conditions and changing technological capabilities, it is inevitable that over time regulatory environments will change, too (Afeikhena, 2004). Therefore regulation is best viewed as another of the variables, such as technological change, that the telecommunications

industry needs to take into account. At the national level, several parts of central government are generally involved, and there can sometimes be more than one regulatory body for a nation. Some of these organizations are major players; others play less prominent, but nevertheless influential, roles. In the U.S., for example, the Federal Communications Commission (FCC) is the national regulatory body, and Public Utility Commissions regulate at the state level (Chan-Olmsted and Jamison, 2001). The U.S. State Department coordinates policy regarding international bodies such as the ITU. In addition, industry associations, policy "think tanks," regulatory affairs departments within companies, telecommunications lawyers, and lobbyists all contribute to policy debates and influence the shape of the regulatory environment.

In the early years of liberalization, much time would typically be spent in licensing new entrants and in putting in place regulations designed to keep a former monopoly telco from abusing its position by, for example, stifling its new competitors or by charging inappropriately high prices to its customers (Crandall and Jerry, 2000). Here the regulator is acting as a proxy for market forces. As effective competition takes root, the role of the regulator changes somewhat. Much of the work then typically involves ensuring that all licensed operators or service providers meet their license obligations and taking steps to encourage the development of the market such that consumers benefit.

The focus of most regulatory bodies is, or should be, primarily on looking after the interests of the various end users of telecommunications (Gardner, 2004). However, most regulators would recognize that this can be achieved only if there is a healthy and

vibrant industry to deliver the products and services. So while there are often natural tensions between a regulator and the companies being regulated, it is at the same time important for cooperation between the regulator and the industry to take place. In Ireland, for example, the role of the regulator is encapsulated by the following mission statement: "The purpose of the Office of the Director of Telecommunications Regulation is to regulate with integrity, impartiality, and expertise to facilitate rapid development of a competitive leading-edge telecommunications sector that provides the best in price, choice, and quality to the end user, attracts business investment, and supports ongoing social and economic growth."

From the regulators' high-level objectives are a range of activities such as licensing, price control, service-level agreements, interconnection, radio spectrum management, and access to infrastructure (Laffont and Tirole, 2000). Often, regulatory bodies consult formally with the industry, consumers, and other interested parties on major issues before introducing regulatory changes.

2.2.2 Telecommunication liberalization in Africa

In the past telecommunications was considered a luxury by many governments and development planners, especially in developing countries (Yousaf, 2003). The belief was that extending telecommunication networks to rural and remote areas, where most of the developing countries' population lives, was too expensive. Today, innovations in satellite and wireless telephony, coupled with solid state components for digital switching and end user equipment, have spectacularly lowered the costs of providing

telecommunications facilities to any location, from the buzzing city centres to rural villages.

It is a well known fact that Africa remains the region with the least developed telecommunications infrastructure in the world today. According to ITU, Africa has the fastest growing telecommunication industry having grown by 49.3% between 2002 and 2007 as opposed to Asia which recorded a 27.4 percent growth. The telecommunications revolution is the Africa's one great example of private-sector dynamism. In a sector previously dominated by dormant state monopolies, it is the area of infrastructure that has shown the greatest advance and made the greatest impact (Daily Nation, 2006). But the telecommunications revolution has only just begun. Long queues for public telephones have almost disappeared and been replaced by the ubiquitous mobile phone. Telecom revolution, coupled with the technological trends, the revolution in the telecom sector has been driven by the dynamism in the telecommunications market globally. The liberalization of the sector, the extension of services by multinational conglomerates across nations and the active competition currently in place in the sector have all contributed to the telecom revolution.

As stated by Amoako, ECA's Executive secretary during the African preparatory conference on the second phase of the World Summit on the Information Society (WSIS), in 1993, there was no country with a competitive market environment for telecommunication (Musila, 2005). However, by 2004, 41 countries had competitive markets, allowing mobile telephony to flourish. Since 2001 when Uganda became one of

the first African countries to have more mobile phones than fixed-lines, many other nations have followed suit, Kenya included.

In many African countries, it is clear that the regulatory environment remains a challenge and is key in consolidating the policy frameworks (Nellis, 2003). The rationale for the introduction of deregulatory measures in African telecommunication sectors was based on, among other things, the economic principle of competition that could increase access and lead to the expansion of the physical infrastructure (networks). The measures were also geared towards stimulating incumbent national telecommunication entities to provide services in a more efficient and effective manner. The impact of liberalization and deregulation has offered a mixed bag of blessings in Africa.

Even though there are established regulators in the continent, the visible benefits have been limited to a slight decrease in fixed lines and the unprecedented growth in mobile telephony in most countries (UNCTAD, 2006). The roll out of rural telephony, the implementation of universal access goals, creation of a level playing field for the emerging private sector, access barriers such as high costs, affordability and geography/location still remain major challenges. In addition, the need for sound regulatory policies and frameworks has been heightened with the advent of the New Partnership for African Development (NEPAD), where telecommunication infrastructure development is one of the key goals under the ICT framework. Consequently, a sound policy environment would be critical in attracting investment into the sector and advancing the NEPAD objectives.

After a decade of infrastructure privatization and liberalization in Africa, there is increasing recognition of the importance of regulatory framework. Under pressure from multilateral institutions, many of these countries hastily adopted regulatory templates from developed countries. Many of them have had little or no precedence to guide the design of regulatory mechanisms. These models were rarely adapted to the political and institutional features prevalent in these economies including lack of checks and balances, limited technical expertise, weak auditing, accounting and tax systems, and widespread corruption and regulatory capture (Laffont, 2000). As a result, such efforts have had limited successes or failed woefully. Most of these regulators are members of African Forum for Utility Regulators, an informal arrangement established in September 2000 with the backing of the World Bank to facilitate the exchange of information and lessons of experience among African regulators, and to support capacity building efforts in the region.

There are a number of problems associated with regulation in Africa. These include: developing and applying the expertise required to address challenging issues in highly complex and increasing dynamic industries. While understanding the technical features of the regulatory industry is clearly essential, the regulator will need to draw expertise in economics, finance , law and engineering to understand the art and science of regulatory decisions; Resisting undue pressure or influences from political authorities (political capture), who are often interested in short term gains. Many government entities especially sector ministers have resisted giving up their regulatory functions and limiting

their roles to policy oversight; assessing industry development and adjusting policies accordingly (World Bank, 2004). The often cited example is Morocco Telecommunications where the very successful erstwhile Director of ARNT, M. Terrab had to resign over disagreement with the Secretary of State for Information Technology, Nasr Hejji. A similar trajectory was played out in South African Telecommunications where the country slipped in international benchmark comparisons from the best in Africa to fifth as a result of regulatory problems (Jerome 2004); Resisting undue pressure from regulated firms (regulatory capture) to ensure that the balance between consumer and producers interest is struck in their favour; Obtaining information from regulated firms. Well informed decisions also require inputs from a diffuse range of consumers, who individually have limited incentives to provide full or accurate information and; Exercising their responsibilities in a way that builds public support for their role and decisions, and thus help to sustain reform.

2.2.3 Policy Regulatory Framework in Kenya

Liberalization in the Kenyan Telecommunications sub sector began earnestly in 1997 when the government embarked on progressive liberalization and privatization within the sub-sector. Before liberalization of the sub-sector, services were delivered within a monopolistic public sector structure - the Kenya Posts and Telecommunications Corporation (KP&TC), which combined regulatory and operational responsibilities (UNCATD, 2005). The sector was at the time plagued by inefficiencies poor coverage and low network coverage.

According to Waema (2004), the deregulation of the communications sector in Kenya was initiated by the 1998 Kenya Communications Act (KCA). The KCA repealed the Kenya Posts and Telecommunications Act and provides the current framework for regulating the communications sector in Kenya. The Act unbundled Kenya Post and Telecommunications into five separate entities, including Telkom (the fixed line operator to invest in network infrastructure), the Postal Corporation of Kenya (Posta, dealing with postal services), the regulator (the Communications Commission of Kenya - CCK) and the National Communications Secretariat (NCS). It also created an Appeals Tribunal for the purposes of arbitration in cases where disputes arise between parties under the KCA. Further reforms in the sub sector were as a result of Kenya fulfilling its obligations under the WTO framework. These have led to the development of the ICT policy, which entails reviewing of the policy framework for investment, competition and growth including obligation of investors to universal access as stipulated in the WTO reference paper on Basic Telecommunications.

The Kenya Communications Act (No. 2 of 1998) provides the framework for regulating the communications sector in Kenya. Enacted by Parliament in 1998, the Act was a deliberate attempt by parliament to give legislative teeth to the Postal and Telecommunications Sector Policy Statement, which had been issued by the then Ministry of Transport and Communications in January 1997 and updated in 1999 and 2001. The said Act is clarified and expounded in the Kenya Communications Regulations 2001.

As part of the post-exclusivity regulatory strategy, CCK issued a statement in September 2004 containing a new licensing framework. The general goal of this framework was "to ensure that the regulatory environment in the sector is friendly to investment and conducive to the provision of modern communication services (Waema, 2004). The specific objectives of the new licensing framework were to ensure that Kenya has a more dynamic and competitive ICT environment, improved access to ICT infrastructure and services and choice in the provision of communication services to meet socio-economic needs of the society. One notable aspect of the new licensing framework is that the CCK was abandoning licensing based on a bidding process in favour of open, market-based licensing. The CCK argued that licensing through a bidding process, especially in a liberalized market, was "not only unnecessary but undesirable and inconsistent with market dynamics". The problems of using the bidding process were evident in the licensing of rural telecommunications operators (RTOs), commercial trunked radio operators (CTROs) and the third GSM operator, which were generally a failure. In effect, CCK abolished the "beauty contest" in preference to simple issuance of a license if a potential operator met the requirements, on a first come first served basis. With the enactment of KCA 1998, the country had created a highly centralized process of policy formulation.

In 2007, ten years on, the Communications Commission of Kenya (CCK) counts the gains. It has been more than a decade since Kenya liberalized the telecommunications sector. The CCK has specialized teams that provide the government with economic analysis that helps in policy review and ensuring the government is aware of the global

trends in leveraging technology for economic development. For instance, the government has reduced equity shareholding to 20 percent from 40 percent for foreign investors, making Kenya an attractive destination for investors. Previously, investors had to give 40 percent shareholding to locals before getting the requisite licenses. The market has been opened up; CCK has licensed more ISPs, Value Added Service operators and courier companies, with the licensing fee decreasing (Musila, 2005).

The Communications Commission of Kenya (CCK) is the independent regulatory authority for the communications industry in Kenya. Its role is to license and regulate Telecommunication, Radio communication and Postal/Courier services in Kenya. (Muriuki, 2004). This responsibility translates to the following functions: Licensing (telecoms and postal/courier) operators; Regulating tariffs for monopoly areas; Establishing interconnection principles; Type-approving communications equipment; Managing the radio frequency spectrum; Formulating telecommunication numbering schemes and assigning them to network operators; Implementing Universal Service Obligation for both postal and telecommunication services and; Assigning frequencies to all licensed telecommunications operators as well as broadcasters utilizing wireless technologies in the provision of their services.

The Communications Commission of Kenya (CCK) therefore plays a critical role in the liberalization of Kenya's postal and telecommunication sector. It is the gateway that encourages private investment in the sector and provides for the rights and obligations of both operators and consumers. CCK is guided by policy goal to ensure that by 2015,

telephone services are provided nationally under a Universal Service Obligation scheme (Kisero, 2005). This will result in service penetration improving from the present 0.16 lines to 1 line per 100 people in the rural areas, and from 4 lines to 20 lines per 100 people in the urban areas. The licensing of new players has given the consumer greater choice. As the link, CCK liaises with consumers, operators and service providers to ensure a level playing field in the sector. CCK is the Watchdog of the consumer; making sure that standards of quality are maintained in both service and equipment provided. It ensures public service obligations are carried out while, at the same time, guaranteeing the protection of both consumer and investor interest.

2.2.4 Liberalization and Innovation in the Telecommunications Industry

Innovation is the process by which an idea or invention is translated into a good or service for which people will pay. To be called an innovation, an idea must be replicable at an economical cost and must satisfy a specific need. Not all types of regulatory schemes are likely to promote innovation in a fast-growing telecommunications industry (Gardner, 2004). Innovation not only improves quality and variety, but also leads to price reductions by the invention of cost reducing new technologies.

The telecommunications industry is the most dynamic industry among those subject to sector specific regulation. Dynamic industries are characterized by a high speed of innovation. Two types of innovation, namely innovation for new services and innovation for alternative network infrastructures underlie competition in the

telecommunications industry (Ndukwe, 2000). While innovation for new services is provided mainly by telecommunications operators, equipment suppliers provide most of the innovation for new network technologies. A network innovation in the equipment sector is followed by an adoption process in the telecommunications sector. Operators have to decide whether and when to adopt the new technology.

Generally, regulation can affect these innovative activities via two different channels (Ndukwe, 2000). First, price regulations (or more specifically, the regulation of interconnection charges and retail prices) alter industry profits, hence the incentives to innovate. Secondly, both price or entry regulations change the terms of entry, and hence innovation decisions regarding new entry. Insofar as technological changes in the telecommunications industry have substantial externalities on overall economic productivity, there are additional costs associated with regulatory errors.

Regulation induces telecommunication operators to pursue a more aggressive strategy regarding innovation, in order to be competitive enough to survive in the market. With growing market competitiveness, technology is becoming a differentiation factor in the search for enterprise survival and to increase firm profitability. Technological advances with regards to telecommunications are continuously evolving and if the pace is such, companies need to implement certain technological innovation style(s) in order for effective market survival and competitiveness (Clark, 1999). In the telecommunications industry the question of who is more innovative in terms of technology (quantitative

aspect) and the other aspects concerning innovation (qualitative) is deemed as the most competitive.

Having reliable and creative sources of innovative ideas is but a first move in the actualization of quality products and services. A company should be unreserved when it comes to this aspect. More innovative ideas can be gathered and later developed into products and services if their sources are infinite. A company being the first to launch a product or a service in the market is believed to be more competitive compared to succeeding launchers of product or service of the same design (Gardner, 2004). The growing demands of users will continue to fuel the expansion of competition, as users seek new services and efficient, costumer-oriented service. The growing demands of users will also continue to impact service quality standards.

According to a recent survey of telecommunications executives, innovation is one of the three most important factors for improving competitiveness (Afrikanus, 2007). "Innovation will be key for survival as competition heats up in today's rapidly converging marketplace," said Eckart Pech, CEO of Detecon, Inc. Service providers, as well as the technology vendors who supply them, will need a constant stream of innovative new offerings in order to win and retain customers. Wherever there is perfect competition, service providers offer their consumers the best of services to prevent them from losing market share and going out of business. The consumer is always the winner in a competitive market.

Innovation in the telecom industry is at its best (Afeikhena, 2004). Businesses are cashing in to offer efficient and stress-free services to the public. Banks are offering cash transfer services through mobile phones in order to avoid queues. Telecommunications liberalization has eventually driven companies to invest heavily in generation of new goods and services, which include but are not limited to the following. First, Telecommunications has allowed a virtual world to emerge—one in which time and distance no longer represent a barrier to doing business or communicating. One of the most significant evolutions occurring in computing and communications is the introduction of the human senses into electronic information streams.

2.3 Theoretical Framework

The study was guided by Schumpeterian growth theory which was advanced by Joseph Alois Schumpeter (1883 – 1950). In this theory Schumpeter stipulated that in an economy-wide liberalization, which lowers barriers to entry, can affect the investment decisions of firms and thereby their productivity and output (Schumpeter, 2004). Liberalization thus leads to a widening in the productivity and output distributions as the performance of firms and industries closer to pre-reform technological frontier and located in states or regions with competitive regulations and policies improves whilst the performance of their counterparts far from the frontier and located in non liberalized frontiers declines.

The theory is based on the principle that liberalization (as measured by an increase in the threat of entry) encourages innovation in industries that are close to the frontier and discourages innovation in industries that are far from it. The theory also

indicates that productivity, investment and output are higher in industries and firms that are initially more advanced. First, a liberalization reform introducing industry liberalization should give rise to larger increases in productivity, investment, rents and output in state-industries that are closer to the frontier. The growth-enhancing effect should be smaller, and possibly negative, in firms and sectors that are farther from frontier. The reason is that incumbent firms that are sufficiently close to the technological frontier can survive or deter entry by innovating. An increased entry threat, thus, results in higher innovation intensity aimed at escaping that threat. This provides a test of the prediction of the theory, namely that firms closer to the frontier respond more positively to the threat of entry introduced by liberalization.

The theory has some weaknesses in that it does not explain how the initial technological development brought about by liberalization differs across industries, and local institutions and how the affected firms mediate this relationship between liberalization and industrial performance (Schumpeter, 2004). The main prediction is that liberalization, modeled as an exogenous shock on the probability of product entry affects innovation, output and productivity growth differently, both, across industries with different initial levels of technology and across regions. Since this study is focussed on a single country and the firms in it, the theory was considered adequate as a base of this study.

Innovation in Telecom Sector is a necessity and not an option. Telecommunication in its wired form started with data communication as telegraph

services. Innovations evolved it into voice communication, where it remained stranded for a long time. Now it has reinvented it again to data dominant mode with convergence of voice video and data (Chaturvedi, 2003).

Today the overall economy depends on the creation of a dynamic, competitive, innovative, investment attracting, telecommunication infrastructure (Bennett, de Bijl, and Canoy, 2001). Globalization has affected the telecommunications sector. Major telecommunications Companies have their holdings in many nations; countries have strategic foreign investors, regional and multilateral agreements. For these innovations to be effective for the subscribers, there need to be a well placed regulatory authority which can create an environment of equal opportunity, open competition, level playing field and transparency till the system becomes mature enough for phasing out of regulation. The regulation has to be such as to provide necessary support for environment conducive of growth and innovation.

In a paper funded by the Dutch telecommunications regulator, OPTA, and written by The Netherlands Bureau for Economic Policy Analysis, Bennett *et al.* (2001) identify the lack of a direct correlation between competition and innovation as a complicating issue in the analysis. This contrasts with the Schumpeterian view where competition appears to be detrimental to innovation and technical progress (Schumpeter, 1942). Bennett *et al.* (2001) support the proposition that an inverted U-shaped relationship exists between the health/intensity of competition within a market and the incentives to innovate. This view has also been supported in a recent paper by the Institute for Fiscal

Studies (Aghion *et al.*, 2002). At low levels of competition intensity, the incentive for firms to innovate is low and incumbent firms have high levels of market power and high profits. Encouraging competitive intensity will have the effect of increasing incentives to innovate up to a point, after which competition becomes so intense that innovation is no longer worthwhile (as a result of lower rents accrued). Where competition is fierce and price intensive, firms are less confident that they will be able to generate the necessary returns to justify the investment costs required for innovation. Clearly the best situation in the medium to long term occurs when the level of competition within the market creates the greatest incentives to invest.

This competition brought about by telecommunications liberalization not only has positive impact, but negative ones as well. Intense competition drives out non-innovative firms out of the market, while the monopolies are privatized in order to compete effectively with multinationals. It is this gap that the investigator studied how firms can stay put in the market despite fierce competition from new entrants.

2.4 Conceptual Framework

The study had the below given conceptual framework which guided the study. The framework is depicted in figure 2.1

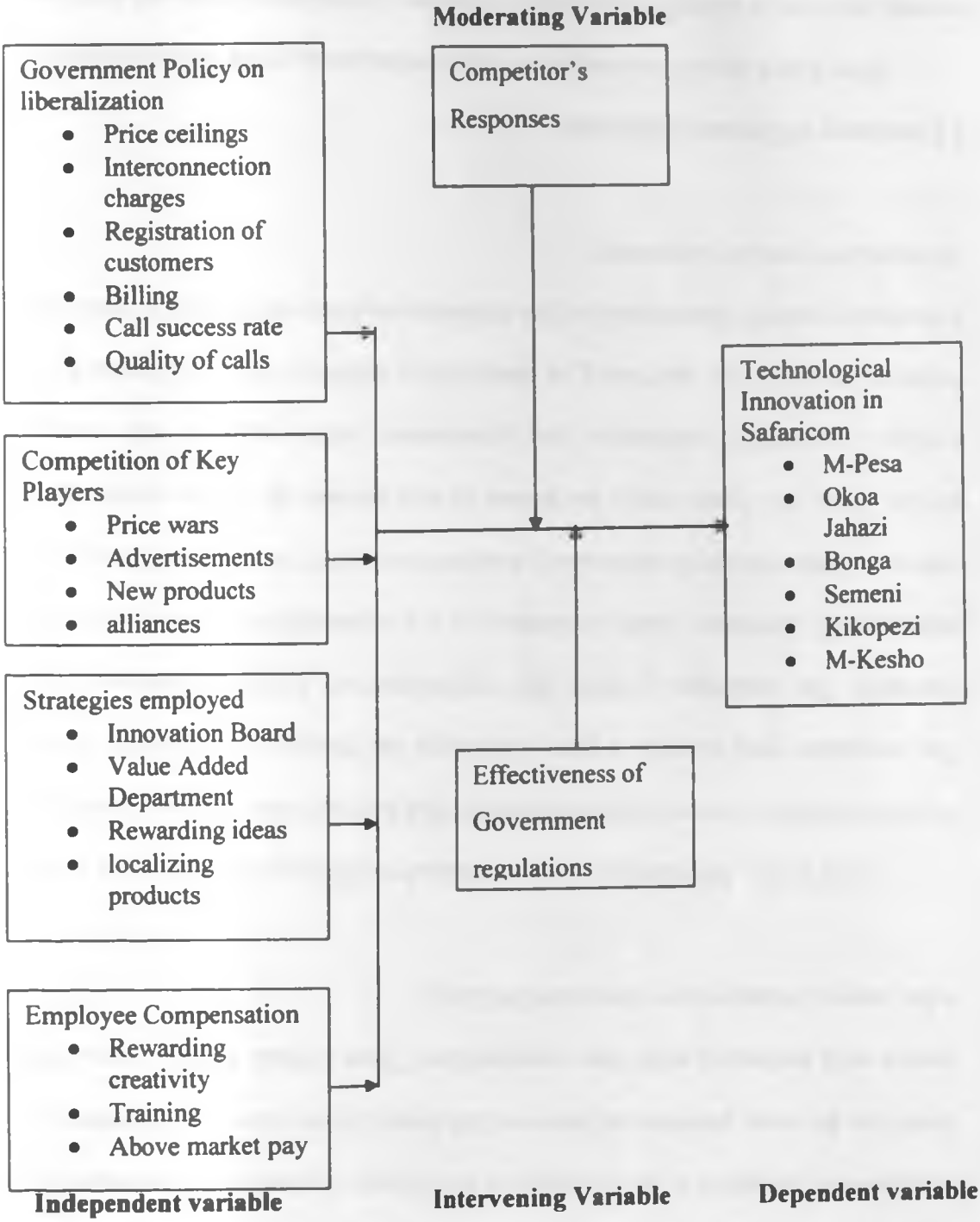

Figure 2.1: Conceptual Framework

Indicators of liberalization is opening up of telecom industry to many players, reducing government control in the sector, removing price controls and letting all telecom companies to compet9e in all the sector of the industry. Indicators of innovation in the model are the many products and services Safaricom Ltd has come up with either on its own or with partnering with other organizations. These include M-Pesa, Okoa Jahazi, skiza, semeni, bonga loyalty scheme and M-Kesho.

In the study, liberalization is conceptualized to affect government policy towards the telecom industry and to bring out challenges that emanate from the liberalized market. The companies then respond to these challenges and threats by formulating strategic responses. The challenges, policies and regulations and strategic responses lead to technological innovation. Today, innovation in the telecommunication sector is not an option, but firms have to be continuously innovative enough if they have to flourish in the market. From the figure above, the threats of new entrants as well as rivalry among existing competitors (challenges) and government policy together with strategic responses by firms are intervening or intermediary variables that are affected by the independent variable (liberalization of the telecommunication market) and in turn affects the dependent variable (innovation).

2.5 Summary of Reviewed Literature

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More than a decade has now passed since the beginning of the telecommunication reforms, and there is indeed a definite shift in telecommunication relations and quite huge improvement in terms of goods and services offered to the consumer, which proceed from technological innovation. Significant critical success factors have been noted, and several of the original objectives of the liberalization efforts have been realized. With growing market competitiveness in the telecommunications sector, technology is becoming a differentiation factor in the search for enterprise survival and to increase firm profitability. Even a technology in a stationary stage needs constant investment in innovation. Technological advances with regards to telecommunications are continuously evolving and if the pace is such, companies need to implement certain technological innovation style(s) in order for effective market survival and competitiveness. Competition, a prevailing theme among companies, will continue to play a major important role in the telecommunications industry. Experience shows that after competition is unleashed, it is difficult to contain. Also, the growing demands of users will continue to fuel the expansion of competition, as users seek new services and efficient, costumer-oriented service. The growing demands of users will also continue to impact service quality standards

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology that was used in the study. The chapter includes the research design, target population, sample selection and size, and research instruments. The chapter also presents how the validity and reliability of the instruments will be ensured. The chapter concludes with data collection procedures and data analysis techniques.

3.2 Research Design

The research problem was solved through the use of a descriptive survey design. This enabled an analysis of how liberalization has affected innovation at Safaricom Ltd. According to Doyle (2004), a survey research refers to a body of techniques for collecting data on human characteristics, attitudes, thoughts, and behavior by obtaining responses from individuals to a set of prepared questions. Descriptive survey technique with self administered questionnaire as the survey instrument was considered applicable in the study.

3.3 Target Population

The target population of study was 250 employees of Safaricom Ltd. Safaricom Limited was the first mobile telephone operator in the country and in fact in the world to roll-out a money transfer service (Wanjiku, 2009). Their money transfer service is dubbed M-Pesa. The study targeted a sample of fifty (50) respondents from Safaricom Ltd.

3.4 Sample Size and Sample Selection

The study involved 250 employees of Safaricom Limited. The selection of the sample size was based on Gay's (1996) guidelines. Random sampling was employed where a sample of 20% was selected which translated to 50 respondents. The study used the existing Safaricom departments as strata (technical and commercial). A list of employees from the two departments formed the sampling frame. Through random sampling, a sample was then selected from each stratum separately, producing a stratified sample. Since random sampling was used, it ensured that all respondents in each stratum had an equal opportunity for selection. The stratified sampling design was to ensure that all concerned departments within the population being studied were adequately represented in the sample.

3.5 Research Instruments

The study used semi-structured questionnaire for collecting primary data from the selected respondents. According to Kothari (2004), a questionnaire is the most effective survey instrument due to its many advantages including economy, ease of use and standardization of responses. It is also easier to analyze data from questionnaires. The researcher designed and personally distributed the questionnaires to the respondents at their places of work at Safaricom House. The questionnaire was divided into four parts. The first part contained 5 general questions concerning the respondent and the company. The part contained four closed questions on gender, age, number of years working in the company, level of education of the respondent and the respondent's level in the target division. The second part contained 4 questions. These four questions dwelt on the challenges emanating from liberalization of the telecom industry. The first question was

likert scaled, the second a closed one and the other two open questions. The third part of the questionnaire contained five questions dwelling on government regulation and policies in the telecom industry touching on liberalization, as well as the factors hindering the effective development and implementation of sound regulatory policies for triggering technological innovation. The first question was a likert scaled question, the second a closed-ended question and the others were open questions. The final part of the questionnaire dwelt on strategic responses employed by the target company to respond to challenges brought about by liberalization. This part had four items. The first item was a likert type question, the second a closed-ended question and the other two open-ended questions.

3.5.1 Pilot Testing

Piloting is a try out of the research instruments to find out whether they are valid and reliable to the study. According to Weirsma (1985), piloting of research instruments helps in eliminating misunderstanding, ambiguities and the less important items in the research instruments. The clarity of questions, appropriateness, relevance and comprehension is checked through piloting. The researcher piloted the research instruments first with 10 employees at Safaricom Ltd. The respondents were required to critique the instrument on the content, format expressions and importance of the items in the instrument. The feedback from the piloting study enabled the researcher to make the necessary adjustments on the items in the research instrument. The piloting sample was omitted from the main study.

3.5.2 Validity of the Instruments

After designing the research instrument, the instrument was tested for validity and reliability. Joppe (2000) explains validity as a measure of whether the research truly measures that which it was intended to measure or how truthful the research results are. Research instruments are designed to enlist certain information from the respondents. The degree to which such instrument gives the expected information even when administered in different settings under same conditions is the validity of that instrument. The content of the questionnaire should reflect the content of the study. In this study, validity of the questionnaire was tested through piloting. After designing the questionnaire, a convenient sample of 10 senior employees was given the questionnaires to fill. They were also required to critique the questionnaire on design, ease of understanding the questionnaire and relevance of the questionnaire. Their suggestions and recommendations were considered and corrections were done accordingly.

3.5.3 Reliability of the Instruments

Joppe (2000) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. Reliability of the questionnaire was tested through a pilot test. The test-retest technique of checking on the reliability of research instruments was applied in this study during the piloting of the research instruments. Test-retest is a statistical method used to determine a test's reliability. The test is performed twice; in the case of the questionnaire, this meant 10 participants the same questionnaire on two

different occasions. If the correlation between separate administrations of the test is high (~.7 or higher), then it has good test-retest reliability (Mugenda and Mugenda, 2003). The test-retest was applied to the employee, where the questionnaire was administered to a randomly selected sample of respondents with similar characteristics who had not been sampled for the study. The same questionnaire was administered to the same respondents under similar conditions after a period of two weeks. The two sets of responses from the two tests using the same questionnaire to the sample people was extracted, organized, coded and analyzed in each case separately. The data yielded was ranked in each case for the purpose of comparing them. Comparison was necessary here in order to establish the reliability of the items in each of the questionnaire. The researcher then compared the results using Spearman's rank correlation technique. The technique involves use of a mathematical formula, (spearman rho)

$$r = 1 - \frac{6 \sum (d)^2}{N (N^2 - 1)}$$

Where r = correlation coefficient

N = sample size

d = difference between the pretest and post test

In this formula, $-1 < r < 1$. There exists a strong positive correlation when the value of r is 0.7 or above up to 1. The questionnaires were found reliable since r was

0.76. The researcher used the findings through piloting of the instruments to adjust the terms on the research instruments accordingly to suit the study.

3.6 Data Collection Procedure

The researcher self-administered the questionnaires to all the sampled respondents at their workstations at Safaricom House. Five days after administering the questionnaire, the investigator personally called and e-mailed all the respondents to remind them of the collection date of the filled questionnaire. After one week, the researcher went round collecting all the filled questionnaires. Those that had not completely filled their questionnaires were given an extra 2 days and the questionnaires collected thereafter as agreed.

3.7 Data Analysis Techniques

After collecting the questionnaires from the respondents, the researcher checked them for completeness and only the ones completely and properly filled were considered for analysis. The checking was to ensure that data was accurate, consistent with the facts gathered, uniformly entered as completely as possible and had been well arranged to facilitate coding and tabulation. The questionnaires found fit for analysis were coded and the raw data entered into Statistical Package for Social Scientists (SPSS) which generated descriptive statistics inform of frequencies, percentages and mean scores. The closed ended questions were analyzed through percentages to depict the weight given to each item. The open-ended questions were analyzed through content analysis to depict the main themes from the responses while likert type questions were analyzed through mean scores. Results from the analysis were presented through tables for ease of interpretation and understanding.

3.8 Ethical Considerations

There are several ethical issues, which must always be considered when planning any type of data collection. Data collections are even more resource intensive and if not properly planned can fail to attain laid down objectives or violate laws, rights and privacy of respondents or any other interested party.

In that respect the researcher was truthful to the respondent and explained that data collected was to be used for academic research purposes only and in the near future may be used as the basis of revising or implementing innovative programs. The Researcher also emphasized that the research procedures were not likely to cause any physical or emotional harm to the respondent. The exercise was made as simple as possible.

During this exercise the informant's rights to privacy were not violated by posing sensitive questions or requesting information which could have contained personal data. The researcher also respected certain, cultural values, traditions, taboos valued by the informant so as to obtain correct and relevant information. This included planning for the collection of the filled questionnaires at stipulated time after negotiations with the respondents. To achieve all the anticipated information the researcher developed good relations with the respondents immediately before, during and after the data collection.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter considers the results and findings from the questionnaires. The findings of the study are presented according to the research questions. There were fifty questionnaires distributed to the selected Safaricom Ltd employees.

4.2 Response Return Rate

Of the 50 questionnaires sent to the sampled subjects, 48 were filled and returned which translated to 96% response rate. According to Mugenda and Mugenda (2003), a response rate of over 60% of the respondents is considered adequate but if unresponsive rate is high, the researcher is required to do a follow up study to check the factors behind the lack of response since it can be a relevant factor in the study. High response rates reduce the risk of bias in the responses. This high response rate was achieved by the great cooperation between the researcher and the respondents. All the returned questionnaires were found fit for analysis.

4.3 Demographic Information

4.3.1 Gender of the Respondents

The study sought about the gender of the respondents and findings are presented in table 4.1

Table 4.1: Gender of the Respondents

Gender	Frequency	Percent
Male	25	52
Female	23	48
Total	**48**	**100**

Findings presented in figure 4.1 indicate that 25 (52%) of the respondents were male while 23 (48%) were female. This portrays a gender balanced workforce.

4.3.2 Age of the Respondents

Respondents were also required to indicate their age and analysis of findings produced results as presented in table 4.2.

Table 4.2: Age of Respondents

Age (Years)	Frequency	Percent
Below 30	27	56
31-40	12	25
41-50	7	15
Over 50	2	4
Total	**48**	**100**

Age distribution of the respondents from the M-Pesa division as presented in table 4.2 indicate that 27 (56%) of the respondents were aged below 30 years, 12 (25%) were between 31 and 40 years while 7 (15%) were between 41 and 50 years. Only 2 (4%) of the respondents indicated to be above 50 years. This indicates that the division's workforce is skewed towards the young employees.

4.3.3 Years of Service in the Company

The study also sought to establish the number of years the respondents had been working in the organization. This was to act as an indicator of how well the employees knew about the company's innovation strategy and the effect of liberalization on the strategies. Findings are presented in the table 4.3.

Table 4.3: Years of Service in the Company

Years of service	Frequency	Percent
2 years and below	13	27
3 – 5 years	19	40
6 – 8 years	14	29
Above 9 years	2	4
Total	**48**	**100**

Thirteen (27%) indicated to have worked at Safaricom for a period less than 2 years while 19 (40%) of the respondents indicated to have worked at Safaricom for between 3 and 5 years. Fourteen (29%) indicated to have worked there for between 6 and 8 years while a small proportion of 2 (4%) indicated to have worked in the company for above 9 years. From these findings, these employees were presumed to have adequate knowledge about the company's innovative response strategies towards liberalization in the industry.

4.3.4 Designation of Respondents

The study sought to establish the designation of the respondents. Findings are presented in table 4.4.

Table 4.4: Designation of Respondents

Designation	Frequency	Percent
Director	2	4
Middle manager	5	10
Lower manager	12	25
Employee	29	61
Total	**48**	**100**

Findings presented in table 4.4 indicate that 2 (4%) were directors while 5 (10%) indicated to be middle managers. Twelve (25%) of the respondents were lower level managers while 29 (61%) of the respondents were just employees without any managerial responsibility.

4.4 Effect of Government Policies

Respondents were required to rate their level of agreement on the effect the government policies and regulations had on the company's innovation and advancement. Statements were rated on a 5 scale likert rating with 1= strongly disagree and 5 = strongly agree. Data was analyzed and presented in table 4.6.

Table 4.5: Effect of Government Policies

Statement	Mean scores
Government policy on money transfer inhibit the company's potential	1.72
Regulations by the government are not fair and should be revised	4.22
Policies from the government inhibit the advancement of this sector	3.21
Regulations by CCK are called for and important in the industry	1.97
More regulations should be put in place to check on emerging technological products	2.36
Reforms are warranted in the CCK to make it more responsive to the technological advancements in the industry	4.37

It is clear from the findings in table 4.5 that government policy on money transfer does not inhibit the company's potential (1.72). However, findings indicate that many respondents were of the view that regulations by the government are not fair and should be revised (4.22). There were indications from the findings that majority of the respondents felt that reforms are warranted in the CCK to make it more responsive to the technological advancements in the telecom industry. Respondents also strongly disagreed with the statement that regulations by CCK are called for and important in the industry (1.97). This is an indication that the telecom player regards CCK's regulations as impediments. Analysis of findings found inconclusive responses regarding whether there should be more regulations to check on emerging technological products (2.36) and whether policies from the government inhibit the advancement of the telecom sector. These findings concur with findings from a study by Wallsten (2001) in North America

that found that the liberalization of telecommunications industry had brought conflict between regulators and players and there was no consensus on the need to substitute competition for private or public monopoly and how to instill regulations and policy. Players in the industry seem to prefer to be left alone.

All the respondents indicated that CCK policy and regulations are not fair and up to date. They indicated that there was need to reform the regulatory regime to make it more current so that it can make policies and regulations which are responsive to the dynamism of the technology sector. Respondents indicated that some regulations were directed at hurting Safaricom's leadership position in the market which seemed to be favoring other competitors. Safaricom competed with Telkom Kenya Ltd., a joint venture between France Telecom SA and the Kenyan government, Kuwait-based Zain and Essar Telecom Kenya Ltd.

Another challenge brought about by government policy was unfairness in regulatory control. Some respondents mentioned the issue where the government of Kenya threatened to implement revised rules on competition in the nation's telecommunications industry. The regulations stipulated that customer promotions and price increases or reductions could only be introduced with the Communications Commission's approval. However, with lengthy negotiations between CCK and the operators, the government accepted to withdraw the stipulation which could have brought bottlenecks in competition in the industry.

4.5 Effect of Cutthroat Competition

A fully liberalized telecommunications market is characterized by: freedom of entry and exit for every supplier regardless of their nationality, with this right extending not only to the service level but also to the infrastructure level. The study sought to establish how cutthroat competition as a result of a liberalized telecom market had influenced Safaricom's innovation strategy. The respondents were required to state their level of agreement to indicated challenges and analysis was through mean scores. The statements that the respondents agreed with had high means scores while those they disagreed with had low mean scores. Results of the likert type question are presented in table 4.6

Table 4.6: Effect of Cutthroat Competition

	Mean Scores
Liberalization has brought about cutthroat competition in the telecom industry	4.21
Competition in the industry has increased costs of operations thus necessitating increased prices	4.17
The regulations in the telecom sector are biased and favour some players	4.22
Liberalization in the telecom industry has made the company of thinking to cross borders	2.16
Innovation is a very important element in an employee in this era	4.78
The company has to continuously improve its products to thrive in this industry	5.00
Liberalization favours the big players and hence small players are disadvantaged	3.44
The government should leave the sector alone and let forces of demand and supply dictate in the market	4.16

Analysis of results indicate that the major challenges that were brought about by liberalization of the telecom industry were cutthroat competition (4.21), increase in operating and other selling expenses due to competition which necessitates high prices (4.17) and biasness of regulations which seem to favour some players (4.22). Other major challenge indicated included the importance of innovativeness in employees which

that the company had in the past made several attempts to include the local community in innovation principally through The Safaricom Innovation Forum. Even then, initial learning gained from wide consultation with the ICT community in Kenya is that there is great scope for improving and expanding these initiatives. This is out of the realization that Safaricom is a key stakeholder in the building of an established and active community of innovators and a culture of innovation in this country and beyond. The respondents indicated that through this forum, Safaricom gets to know innovative minds that they include in their product developments. Respondents indicated that Safaricom considered careful representations and suggestions from the ICT Community and actively pursue the creation of Safaricom Innovation Board comprising representatives from the public - and in particular direct stakeholders in innovation. Safaricom invited the public to nominate individuals whom they felt should be considered onto their innovation board. Nomination to the board was open to individuals who had shown leadership in the ICT arena and who had a sharp grasp of the country's needs and how technology can best be harnessed to address these. This according to the respondents gives Safaricom an innovative edge both in the present and in the future.

4.6 Employee Compensation and Its Effect on Innovation Strategy

To instill a culture of innovation in employees in times of intense competition, a company is supposed to motivate employees and one way of motivation is through competitive compensation. The study findings indicated that Safaricom had responded to competition through a culture of innovation adopted by the company. Respondents indicated that, as competition increases due to new entrants in the market, the company's

Chaturvedi (2003), whose findings indicated that many countries had endorsed the WTO's liberalization guideline and subsequently opened their telecom markets leading to open and competitive market systems which had resulted in innovative products and improved services.

Another challenge indicated by respondents to be brought by a liberalized telecom market is competition. On this, Safaricom was indicated by the respondents to be renowned by its competitors and customers alike as the company that introduces products beyond the wildest imagination. Respondents also indicated that Safaricom was quick in growing its market as seen by how well it has managed the M-Pesa Service. There is currently a large network of M-PESA Agents across Kenya who had been trained to use the service. The respondent employees indicated that Safaricom is planned to grow this network significantly in the coming months. Safaricom together with many other companies was indicated by respondents to have come up with different services for use by the public ranging from weather updates to market prices and even entertainment updates.

Another challenge indicated by respondents that hindered Safaricom's innovative ability was very few innovative minds in the workforce. However respondents indicated that over the years, Safaricom has built a solid reputation as a company whose success hinges significantly on a culture of constant innovation to address growing customer needs. The recent expansion of their data network, some respondents observed, had opened up greater opportunities to drive innovation. The respondent employees indicated

that the company had in the past made several attempts to include the local community in innovation principally through The Safaricom Innovation Forum. Even then, initial learning gained from wide consultation with the ICT community in Kenya is that there is great scope for improving and expanding these initiatives. This is out of the realization that Safaricom is a key stakeholder in the building of an established and active community of innovators and a culture of innovation in this country and beyond. The respondents indicated that through this forum, Safaricom gets to know innovative minds that they include in their product developments. Respondents indicated that Safaricom considered careful representations and suggestions from the ICT Community and actively pursue the creation of Safaricom Innovation Board comprising representatives from the public - and in particular direct stakeholders in innovation. Safaricom invited the public to nominate individuals whom they felt should be considered onto their innovation board. Nomination to the board was open to individuals who had shown leadership in the ICT arena and who had a sharp grasp of the country's needs and how technology can best be harnessed to address these. This according to the respondents gives Safaricom an innovative edge both in the present and in the future.

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strength has been creating an environment where people are not scared to bring out even whacky ideas to be tried. As a company policy, some respondents indicated that Safaricom had a company policy of rewarding any employee or group of employees whose products succeed. Respondents indicated that innovation at Safaricom was backed by a full department, Value Added Service, which is charged with designing products by internally developing them or picking them from other markets and then tailoring them to local needs.

The study also sought to establish the factors that hindered the effective development and implementation of sound regulatory policies that would trigger technological innovation among the mobile telephone operators. Responses were varied but analysis along the common themes indicated that lack of a common ground by the telecom players was the main hindrance to sound regulatory policies. Respondents indicated that the lack of telecom companies' umbrella organization that would have the capacity to champion their views to CCK and hence making it hard for the telecom players to have their say in any regulatory policy.

Another major hindrance indicated by the respondents was the CCKs approach of formulating regulatory policies and practices without extensive consultation with the telecom players. Respondents indicated that CCK had a tendency of introducing policies and regulations out of the blue thus surprising the players which was not taken kindly by the various players.

Rivalry among the telecom players was another major hindrance to effective development and implementation of sound regulatory policies that would trigger technological innovation. The respondents indicated that this rivalry played into the way of forging a common ground to negotiate with the government. Many responses also indicated that some players welcomed some regulations that seemed to check on the ability of rival companies regardless of their fairness.

Dynamism and complexity of the telecommunications industry was another major hindrance that affected effective development and implementation of sound regulatory policies. The continuous and frequent changes in technological advancement, introduction of new technologies and old technologies being rendered obsolete was seen a major hindrance to formulating effective policies. This played into the way of policy development in that the rate of advancement in technology was far much ahead of rate of policy development and therefore making the regulatory agency incapable of keeping the pace. This made many of the IT products fall within what many respondents called 'regulatory vacuum'.

4.7 Innovation Strategies employed by Safaricom

To remain competitive in a liberalized economy, a company needs to continually satisfy the market with quality and current products. The study therefore sought to establish the strategic innovative responses that Safaricom had instituted and put in place to counter the challenges brought about by liberalization. Statements to measure innovative responses were framed to assess the extent to which liberalization had aroused

innovation at Safaricom. The statements were rated on a 5 point likert scale where 1 = strongly disagree and 5 = strongly agree. Results are presented in table 4.7.

Table 4.7: Innovative Responses by Safaricom

Statement	Mean Scores
I believe that the company has used creativity and innovativeness to create the best products and services	4.44
Safaricom has managed to partner with other service providers for settlement of bills through M-Pesa which is very convenient	5.00
M-Pesa has brought more customers into the network	4.21
Competition requires continuous upgrade of our network which is expensive	4.37
The company supports creative thinking	5.00
The company encourages participation and involvement in expressing ideas and creative thinking	4.72
The company always and continually trains it employees to keep them up to date	5.00
Innovation is rewarded in the company	5.00
Many of the company's products are copied from other companies and the company is not original	1.67
The company upholds ethics in its innovation process	4.72
The company always monitors the competition to ensure that its always ahead	4.49
Price is an important component in the company's innovation and product	3.89

development processes

Analysis of findings in table 4.7 indicate that Safaricom has used creativity and innovativeness to create the best products and services (4.44) and it has managed to partner with other service providers for settlement of bills through M-Pesa which is very convenient (5.00). Study findings also indicated that the M-Pesa product had brought more customers into the network (4.21) and had helped Safaricom to gain a competitive edge over its rivals.

Analysis of data also indicated that many respondents agreed that competition requires continuous upgrade of the network which is costly requiring huge investments (4.37). Findings also indicated that the company supported and rewarded creative thinking (5.00).

Other responses which most respondents agreed on included the statement that the company encourages participation and involvement in expressing ideas and creative thinking (4.72), that the company always and continually trains it employees to keep them up to date (5.00), that the company upholds ethics in its innovation process (4.72) and that Safaricom always monitors the competition to ensure that its always ahead (4.49). However, findings indicated that most respondents disagreed with the statement that many of the company's products are copied from other companies and the company is not original (1.67). This is an indication that the company always relied on its employees to come up with new and innovative products.

On further analysis of responses to open questions, the study established that Safaricom had taken the challenges in the telecom industry brought about by the opening of the industry to competition as an incentive to innovations. One challenge was network congestion as a result of the limited income of most of Safaricom's customers. This according to the respondents emerged from a practice called 'flashing'. Flashing is the practice of calling another mobile user, but disconnecting before the connected call is answered. It provided a method for mobile users to alert someone that they wished to be called, but either can't, or won't, pay for the call. The method was cost-free for the users; but costly in network bandwidth. As an answer to this, Safaricom introduced a flashback service that gave every subscriber 5 free SMS messages with a single pre-defined message stating "Please call me. Thank you". This innovated free product enabled Safaricom to reduced on its bandwidth usage and save on costs.

Another innovative response from Safaricom was indicated to be Kipokezi. Safaricom launched the Kipokezi service in May 2010 that enabled its subscribers to send and receive email and online chat through standard mobile phones that were not web enabled. Any phone with an SMS service can use Kipokezi service. Safaricom limited through this service has enabled its customers to communicate with other subscribers through the internet and this has been an added source of revenue for the company. Most responses indicated that prior to the service fewer than one in ten Kenyans had accessed the Internet but the Kipokezi launch allowed more than a third of the population to exchange email and online chat messages. The Kipokezi was provided by Safaricom in

conjunction with ForgetMeNot Africa, a software development company. This also indicates that way Safaricom does business by forming alliances and partnerships with other companies to give its clientele current and effective products.

Respondents indicated that the most current innovative mind of Safaricom was seen with its partnership with Equity Bank to introduce an ultimate bank account that let customers transfer money to and from their M-PESA accounts via their mobile handsets while enjoying other benefits that come with the bank account. This was applauded in the local market as a way of financial deepening and also as a way of providing the poor customers with banking options. This idea was indicated by respondents as a great idea that will drive customers to save into their bank accounts and enjoy the benefits of having the value added services of both M-PESA and an Equity bank account. This, the respondents indicated increases value for Safaricom's customers as an M-KESHO account (the name given to the product) offered short term loan facilities as well as paying interest on mobile account deposits. Credit evaluation for loans was based on scoring using 6 months of history of the consumers M-PESA balances. There was no application for the loan as the request was made by the consumer using the mobile phone. This is the innovation that drives growth in the emerging economies.

Another way Safaricom has responded to the threat of competition brought about by liberalization is from alliances and partnerships. Another case in point indicated by respondents was the company's partnership with pay TV Company MultiChoice that allowed DStv customers pay their bills through the M-PESA service. Safaricom has also

entered into similar arrangements with companies such as Kenya Power and Lighting Company (KPLC), Nairobi City Water and Sewerage Company, and other host of savings and credit organizations and charitable bodies where their customers or well wishers can pay their bills or send their donations via M-Pesa. By so doing, respondents indicated that Safaricom had bundled the M-Pesa product package to have many services bundled into one. Respondents indicated that Safaricom currently deals with over 300 firms in similar arrangements that have seen millions of customers make payments from the convenience of their homes and offices through the M-PESA Pay Bill service. The respondents indicated that Safaricom would continue partnering with organizations from diverse sectors especially public utility providers in the market with a view of streamlining and improving service delivery to Kenyans.

To crown the innovative scope of the M-Pesa Service, many respondents indicated the many awards the product has won. The service has more than 6.7 million registered users and has moved Sh152 billion since its launch in 2007. M-PESA according to the respondents boasts a crowded trophy cabinet. Its past awards include Kenya Banking Awards for product innovation won in 2009. In the same year, it bagged the Global Mobile Awards and was feted during the World Business and Development Awards for contribution to the attainment of Millennium Development Goals (MDGs) through core business.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the outcome of the study. It provides a summary of findings and their interpretation and then lays down the conclusions drawn from the findings. The researcher then provides recommendations on the gaps identified in the study. Lastly, the researcher gives recommendations for further research studies to be carried out in this area.

5.2 Summary of Findings

The study sought to investigate the effect of telecom industry's liberalization on Safaricom's technological innovation strategy. This section provides a summary of findings from the study. Specifically, the study sought to establish extent to which government policies on liberalization of telecom industry have influenced Safaricom's innovation strategy, to determine the extent to which cutthroat competition as a result of telecom industry's liberalization has influenced Safaricom's innovation strategy, to assess the extent to which employee compensation as a result of telecom industry's liberalization has influenced Safaricom's innovation strategy and to explore innovation strategies employed by Safaricom Limited as a response to telecom industry's liberalization.

On the effect of government regulation on Safaricom's technological innovation, findings indicated that government policy on money transfer did not inhibit Safaricom's innovative potential (1.72). However, findings indicated that most regulations by the

government were not fair and should be revised (4.22). There were indications from the findings that majority of the respondents felt that reforms were warranted in the CCK to make it more responsive to the technological advancements in the telecom industry. Respondents also strongly disagreed with the statement that regulations by CCK are called for and important in the industry (1.97). This is an indication that the telecom players regard CCK's regulations as impediments to growth and technological advancement.

The study also sought to find out how Safaricom's innovation strategy had been influenced by cutthroat competition. Findings indicated that the major challenges that were brought about by liberalization of the telecom industry were cutthroat competition (4.21), increase in operating and other selling expenses and unfairness of regulations which seem to favour some players (4.22). Other major challenges indicated included lack of innovativeness in employees' minds (4.78), being forced to continuously improve its products to thrive in the industry (5.00). Findings also indicated that government regulation was not very welcome in the sector as it lowered the standards of competition in the industry. Results from the analysis indicate that many respondents did not perceive the government regulations as fair and indicated that most of the regulations favoured some of the players and disadvantaged others.

To instill a culture of innovation in employees in times of intense competition, a company is supposed to motivate employees and one way of motivation is through competitive compensation. The study findings indicated that Safaricom had responded to competition through a culture of innovation adopted by the company. Respondents indicated that, as competition increases due to new entrants in the market, the company's

strength has been creating an environment where people are not scared to bring out even whacky ideas to be tried. As a company policy, some respondents indicated that Safaricom had a company policy of rewarding any employee or group of employees whose products succeed. Respondents indicated that innovation at Safaricom was backed by a full department, Value Added Service, which is charged with designing products by internally developing them or picking them from other markets and then tailoring them to local needs. Respondents also indicated that Safaricom's employee compensation package was very competitive which motivated employees to creativity and innovation.

Another challenge brought about by competition that hindered Safaricom's innovative ability was very few innovative minds in the workforce. This was tackled by the company by head hunting innovative minds in other telecom companies both locally and abroad and compensating them to drive the innovative ability of the company. However respondents indicated that over the years, Safaricom has built a solid reputation as a company whose success hinges significantly on a culture of constant innovation to address growing customer needs. The recent expansion of their data network, some respondents observed, had opened up greater opportunities to drive innovation. The respondent employees indicated that the company had in the past made several attempts to include the local community in innovation principally through The Safaricom Innovation Forum.

To survive in a liberalized and highly competitive environment, a company needs to continually reinvent itself to remain at the top of others. The study sought to

investigate the innovative strategies adopted by Safaricom to counter the challenges brought about by liberalization. Analysis of findings indicated that Safaricom had over the years adopted innovative policies which were touted as its vehicles to growth and advancement. Analysis of findings indicated that Safaricom has used creativity and innovativeness to create the best products and services (4.44) and it has managed to partner with other service providers for settlement of bills through M-Pesa which is very convenient (5.00). Study findings also indicated that the M-Pesa product had brought more customers into the network (4.21) and had helped Safaricom to gain a competitive edge over its rivals. Safaricom was also reported to continuously upgrade its network which is costly requiring huge investments (4.37). Findings also indicated that Safaricom always supported and rewarded creative thinking (5.00). Further analysis revealed that the company encourages participation and involvement in expressing ideas and creative thinking (4.72) and that the company always and continually trains it employees to keep them up to date (5.00). Further results indicate that Safaricom always monitors the competition to ensure that it's always ahead (4.49). Safaricom was also touted to continually introduce new and innovative products besides M-Pesa which included a flashback service that gave every subscriber 5 free SMS messages with a single pre-defined message stating "Please call me. Thank you". This innovated free product enabled Safaricom to reduced on its bandwidth usage and save on costs. Another specific response was the culture of innovation adopted by Safaricom. As competition increases due to new entrants in the market, the company's strength has been creating an environment where people are not scared to bring out even whacky ideas to be tried. As a company policy, Safaricom had a company policy of rewarding any employee or group

of employees whose products succeed. Innovation at Safaricom was backed by a full department, Value Added Service, which is charged with designing products by internally developing them or picking them from other markets and then tailoring them to local needs. Another innovative response from Safaricom was indicated to be Kipokezi. Safaricom launched the Kipokezi service in May 2010 that enabled its subscribers to send and receive email and online chat through standard mobile phones that were not web enabled. The most current innovative mind of Safaricom was seen with its partnership with Equity Bank to introduce an ultimate bank account that let customers transfer money to and from their M-PESA accounts via their mobile handsets while enjoying other benefits that come with the bank account – M-KESHO. This was applauded in the local market as a way of financial deepening and also as a way of providing the poor customers with banking options. Another way Safaricom has responded to the threat of competition brought about by liberalization is from alliances and partnerships. Safaricom has partnerships with companies such as Kenya Power and Lighting Company (KPLC), Nairobi City Water and Sewerage Company, and other host of savings and credit organizations and charitable bodies where their customers or well wishers can pay their bills or send their donations via M-Pesa. Safaricom currently deals with over 300 firms in similar arrangements that have seen millions of customers make payments from the convenience of their homes and offices through the M-PESA Pay Bill service. To crown the innovative scope of the M-Pesa Service, the service has more than 6.7 million registered users and has moved Sh152 billion since its launch in 2007. M-PESA boasts a crowded trophy cabinet. Its past awards include Kenya Banking Awards for product innovation won in 2009. In the same year, it bagged the Global Mobile Awards and was

feted during the World Business and Development Awards for contribution to the attainment of Millennium Development Goals (MDGs) through core business.

5.3 Conclusions

Liberalization in the Kenya's telecom market has brought advantages to the customers in terms of quality and current products, lower price and innovation. However, liberalization has brought with itself challenges which have threatened many telecom industries. However Safaricom has responded swiftly to these challenges and incorporated an innovative culture which has been touted as the driver of its growth. M-Pesa represents the most successful innovation strategy in Safaricom's localization process. Developed in association with Vodafone, the M-Pesa business model is a global first and has delivered considerable revenues, firm customer loyalty, and wide brand recognition.

The study sought to establish the effect of liberalization of the telecom industry on Safaricom's innovation. The study concludes that there are a host of challenges that were brought about by liberalization of the telecom industry which included cutthroat competition, increase in operating and other selling expenses, biasness of regulations which seem to favour some players, a company being forced to continuously improve its products to thrive in the industry and unwelcome government regulation.

The study also makes the conclusion that government's policy on money transfer did not inhibit Safaricom's innovative potential. However, most regulations by the

government were not fair and should be revised. Reforms are warranted in the CCK to make it more responsive to the technological advancements in the telecom industry. Telecom players regard CCK's regulations as impediments to growth and technological advancement.

There are various factors hindering the effective development and implementation of sound regulatory policies that would trigger technological innovation among the mobile telephone operators. These include lack of a common ground by the telecom players to negotiate in the policy formulation stage, the telecom companies' umbrella organization lacking the capacity to champion their views to CCK, CCK's approach of formulating regulatory policies and practices without extensive consultation with the telecom players and CCK having a tendency of introducing policies and regulations out of the blue thus surprising the players which is not taken kindly by the various players. Rivalry among the telecom players was another major hindrance to effective development and implementation of sound regulatory policies that would trigger technological innovation.

The final objective of the study was to investigate the innovative responses adopted by Safaricom to counter the challenges brought about by liberalization. From this objective, the study concludes that Safaricom has over the years adopted innovative policies which are touted as its vehicles to growth and advancement. Safaricom has used creativity and innovativeness to create the best products and services and it has managed to partner with other service providers for settlement of bills through M-Pesa which is a

very convenient and reliable revenue source. The M-Pesa product has brought many customers into the network and helped Safaricom to gain a competitive edge over its rivals. Safaricom also continuously upgrades its network which is costly requiring huge investments. On innovation, Safaricom always supports and rewards creative thinking. The company encourages participation and involvement in expressing ideas and creative thinking and it continually trains it employees to keep them up to date. Safaricom also monitors the competition to ensure that it's always ahead. Safaricom was also touted to continually introduce new and innovative products besides M-Pesa. This innovation at Safaricom is backed by a full department, Value Added Service, which is charged with designing products by internally developing them or picking them from other markets and then tailoring them to local needs.

5.4 Recommendations

From the findings, the study makes the following recommendations; Companies in the telecom industry need to continually reinvigorate themselves to remain relevant in the telecom industry which over the years has proved to be dynamic, complex and turbulent. To ensure survival, the companies need to respond effectively to the various challenges brought about by liberalization among them cutthroat competition; the government needs to come up with effective and workable policies and regulations which when implemented will spur growth in the telecom industry. CCK which is the government regulating agency in the telecom industry, needs to ensure that it comes up with regulations and policies intended to spur innovation in the sector not to limit the industry's innovative potential. CCK therefore needs to adopt an all inclusive strategy in coming out with policies which will incorporate negotiations with the various players in

the industry to ensure that the resultant policies and regulations are all inclusive and agreeable to all the stakeholders; Telecom companies need to give their clientele new and innovative products that fit their purpose and are economical. This calls for investment in incorporating a culture of creativity in employees and rewarding innovative ideas. The only way to ensure that a company thrives in the ever-changing telecom industry is to ensure that it continually improves its products to fit to the ever-changing consumer needs.

5.5 Suggestions for Further Research

Future researchers can investigate the factors that contribute to the dismal performance of the struggling companies in the mobile telephony industry in Kenya since findings from this study cannot be generalized to other mobile service companies in Kenya since only Safaricom is profitable in the sector whereas the others are loss making entities. A study needs to be carried out to establish what these other companies are not doing right. On other areas, future researchers need to investigate the benefits that telecommunication operators would gain in terms of policy formulation and implementation if they could team up and form an umbrella body to champion their needs to the regulator as well as the government.

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APPENDICES

Appendix I: Letter of Transmittal

Caroline M. Mutungi,

P. O Box 23581 – 00100, Nairobi – KENYA,

May 14, 2010.

Dr. Respondent,

RE: RESEARCH PROJECT

I am a postgraduate student at University of Nairobi. As part of the requirements of the Masters of art degree, I am required to carry out an independent research. The research is titled "Liberalization of Telecommunications Industry and Its Effects on Mobile Telecommunication Operators, A Case of M-Pesa Product of Safaricom Ltd". To enable me to successfully carry out the study, a questionnaire is provided which will be the major basis of findings of the research.

You are kindly requested to respond to the questions as directed and as honestly as possible. I understand that you have a busy schedule and your participation in this evaluation is greatly appreciated and information given will be treated in strictest confidence.

Sincerely,

Caroline Mumbua Mutungi

Appendix II: Questionnaire for Safaricom Employees

Introduction

Liberalization of the telecom industry has enabled entry of new players into the industry which in turn has brought challenges, competition and volatility in consumer preferences. Safaricom Ltd introduced M-Pesa product into the Kenyan market and it was touted to be a world's first. This is why Safaricom and specifically the M-Pesa product was chosen to assess how liberalization has influenced innovation in telecom companies in Kenya.

Please answer all questions to the best of your ability. There is no right or wrong answers. What matters is your personal opinion from your experience. The survey should take approximately 5 working days. Please rate each of the following statements by ticking as appropriate or put the right answer in the gaps given.

PART I: GENERAL INFORMATION

1. Gender? ☐ Male ☐ Female
2. Age group? ☐ Below 30 ☐ 31-40
   ☐ 41—50 ☐ Above 50 years
3. Number of years you have worked in the company? _____
4. What is the highest level of school you have completed?
   ☐ High School ☐ College Diploma
   ☐ Degree ☐ Others _____
5. What is your level in the division?
   ☐ Chief ☐ Director ☐ Middle manager

☐ Lower manager ☐ Employee

PART II: CHALLENGES FROM LIBERALIZATION

1. Please complete each question below by circling either 1, 2, 3, 4, or 5 where

1 = Strongly Disagree 2 = Disagree 3 = Maybe

4 = Agree, 5 = Strongly Agree

Challenges from liberalization	**Ratings**				
Liberalization has brought about cutthroat competition in the telecom industry	1	2	3	4	5
Competition in the industry has increased costs of operations thus necessitating increased prices	1	2	3	4	5
The regulations in the telecom sector are biased and favour some players	1	2	3	4	5
Liberalization in the telecom industry has made the company of thinking to cross borders	1	2	3	4	5
Innovation is a very important element in an employee in this era	1	2	3	4	5
The company has to continuously improve its products to thrive in this industry	1	2	3	4	5
Liberalization favours the big players and hence small players are disadvantaged	1	2	3	4	5
The government should leave the sector alone and let forces of demand and supply dictate in the market	1	2	3	4	5

2. Do you think the liberalization process was carried out fairly by the government?

Yes [ ] No [ ]

3. Please explain your answer in the above question

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4. What are the challenges that the liberalization of the telecom industry brought to the company.....

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PART III: GOVERNMENT POLICIES

1. Please complete each question below by circling either 1, 2, 3, 4, or 5 where;

1 = Strongly Disagree 2 = Disagree 3 = Maybe

4 = Agree 5 = Strongly Agree

Statement	Ratings				
Government policy on money transfer inhibit the company's potential	1	2	3	4	5
Regulations by the government are not fair and should be revised	1	2	3	4	5
Policies from the government inhibit the advancement of this sector	1	2	3	4	5
Regulations by CCK are called for and important in the industry	1	2	3	4	5
More regulations should be put in place to check on emerging technological products	1	2	3	4	5
Reforms are warranted in the CCK to make it more responsive to the technological advancements in the industry	1	2	3	4	5

2. Do you think that the CCK policy and regulations are fair and up to date?

Yes [ ] No [ ]

3. Please explain your answer in the above question

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4. What regulations and policies and problems do you think are brought about by the regulatory framework in the telecom industry?

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5. What are the factors hindering the effective development and implementation of sound regulatory policies that would trigger technological innovation among the mobile telephone operators?

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PART IV: STRATEGIC RESPONSES BY SAFARICOM

1. Please complete each question below by circling either 1, 2, 3, 4, or 5 where

1 = Strongly Disagree 2 = Disagree 3 = Maybe

4 = Agree, 5 = Strongly Agree

Statement	Ratings				
I believe that the company has used creativity and innovativeness to create the best products and services	1	2	3	4	5
Safaricom has managed to partner with other service providers for settlement of bills through M-pesa which is very convenient	1	2	3	4	5
M-Pesa has brought more customers into the network	1	2	3	4	5
Competition requires continuous upgrade of our network which is expensive	1	2	3	4	5
The company supports creative thinking	1	2	3	4	5
The company encourages participation and involvement in expressing ideas and creative thinking	1	2	3	4	5
The company always and continually trains it employees to keep them up to date	1	2	3	4	5
Innovation is rewarded in the company	1	2	3	4	5
Many of the company's products are copied from other companies and the company is not original	1	2	3	4	5
The company upholds ethics in its innovation process	1	2	3	4	5
The company always monitors the competition to ensure that its always ahead	1	2	3	4	5
Price is an important component in the company's innovation and product development processes	1	2	3	4	5

2. Do you think that Safaricom has responded effectively to liberalization in the telecom industry?

Yes [ ] No [ ]

3. Please explain your answer in the above question

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4. What specific responses do you think Safaricom has adopted to specifically deal with challenges and problems brought about by liberalization?

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