

**THE EFFECT OF APPLICATION OF ICT ON THE
PERFORMANCE OF MULTINATIONAL MOBILE
OPERATORS IN KENYA**

BY:

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DEGREE OF MASTER OF BUSINESS ADMINISTRATION,
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DECLARATION

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

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D61/70907/2014

This research project has been submitted for examination with my approval as the University supervisor.

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My heartfelt gratitude goes to the almighty God for giving me wisdom and grace during this entire research period. A sincere acknowledgement goes to my supervisor Dr John Yabs and my moderator Mr Eliud Mududa for their overwhelming guidance and support during the period of research.

DEDICATION

This project report is dedicated to my family, classmates and friends for their love, support and encouragement during the entire period of my studies. Thank you very much and God bless you!

ABSTRACT

Technological innovation has generated considerable interest among academics and practitioners in recent years. Information and Communication Technologies (ICT) such as computer terminals, e-mail and the Internet and their applications have become the major drivers of innovation, growth and social change. Moreover, as organization for economic cooperation and development (OECD) points out, there must be a focus on the contribution of ICT to innovation and growth in times of crisis. In order to improve the efficiency and effectiveness of services offered to customers, improve business processes as well as enhance managerial decisions making and work group collaborations, companies are forced to adopt information and communication technology. As a result of this, they are able to strengthen their competitive positions in rapidly changing economies. The adoption of new ICT practices however does not automatically result in success and it requires a firm to combine this with the best organizational practices. The objective of this study was to determine the effect of Information and Communication technologies (ICTs) on performance of multinational mobile operators in Kenya. This study adopted a descriptive design, the target population of this study was the 3 multinational multinational mobile operators. This study utilised primary sources of information which were gathered by use of questionnaires. This study used qualitative content analysis methodology to analyze the data collected from the questionnaires. The study recommends that all the multinational mobile operators in Kenya need to implement ICT in their operations in all the levels of management to improve their performance since there was a positive response in connection to their impact on performance. The study also recommends that for a firm to fully realize the return on investment in information technology infrastructure then other forms of investment need to be done such as enhancement of employee's skills and decentralized decision making structures in the organization.

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LIST OF ACRONYMS AND ABBREVIATIONS

CIO : Chief Information Office

ICT : Information and Communication Technologies

IP : Internet Protocol

IS : Information Systems

IT : Information Technology

MNC : Multinational Corporation

POM: Product, Operation and Market

PREM : Poverty Reduction and Economic Management Network

RBV : Resource-Based View

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The participation in International business by private or governmental organizations entails engaging in commercial transactions in more than one country. The main reason why private companies engage in such transactions is so as to make profit; governments on the other hand may or may not do the same. Sales, investments and transportation are some of the examples of these transactions (Venkateswaran, 2012). One of the ways in which private firms engage in international business is through multinational corporations. Any organization doing business in more than one country can be defined as a multinational company. These companies will invest, operate, produces and market their products and solutions across the world; they also have sales offices/manufacturing facilities in many countries. Global enterprises thus link global resources with global markets at profit. (Rao, 2010).

Adam smith and David Ricardo were the first to anticipate the rise of multinational corporations through their classical theory of international trade as a result of the rapid development of modern transportation and communication technologies. This theory is based on the concept of comparative advantage in that a country should specialize in the production/manufacture and export of those goods and or services that it can produce with the highest relative efficiency and import those goods and or services that other countries can produce/manufacture relatively more efficiently (Chaurasia, 2008). As per the Uppsala model theory, multinationals however do have a strategy of operation in that they start off with their domestic markets and once they have acquired enough experience and expertise they proceed on to the foreign markets.

In order for a firm to be able to respond to the various changes within its operating environment, it must have well established competitive strategies. Usage of ICT is one of them which have been influenced by resource capability in a firm. As per the resource-based theory a firm that wants to remain competitive within its environment of operation must have resources and capabilities that are superior to those of its competitors (Avlonitis et al, 2001).

Advancement in the ICT industry has been singled out as one of the key drivers for Kenya's economic prosperity that has not only helped to alleviate poverty but also made Kenya one of the leading countries in Africa in terms of technological development. Information and communication technology (ICT) has contributed to solving various problems in some of the poorest countries in the world like reducing isolation, helping to solve conflicts, enable people earn an income and assist in times of emergencies.

1.1.1 Concept of International Business

In order for one to engage in international business through the production, buying and selling of goods or services, focus should be on the global resources, the global business opportunities and threats of the organization. International business dates back to the 19th century with first phase having begun in 1870 and ending in 1914. This was due to the industrial revolution in United States, United Kingdom and Germany, sharp increase in trade during this time was as a result of importation of raw materials by these countries from their colonies and the exportation of finished goods overseas.

In 1913, ratio of trade to GDP was as high as 22.1. However in order to protect their domestic production, various governments initiated and imposed a number of barriers to trade that led to decline in the ratio of trade to GDP to 9.1 during the 1930s. As a result of

these barriers, advanced countries experienced severe setback since they produced in excess of domestic demand and on the other hand there was decline in international trade volume. This notwithstanding, there was a vacuum in the field of international trade due to the breakdown of gold standards. As a result of these challenges, a need for international cooperation in global trade and balance of payments affairs by the world nations was necessary. The solution to these problems was the establishment of the world bank and the international monetary fund institutions..

A multinational Corporation can be defined as an organization that is doing business in more than one country. MNCs are characterized by activities such as international production and operation of plants in a number of countries, integration of their operations into the corporations overall business, taking managerial decisions based on global perspective, extension of industrial or marketing operations through a network of branches, production of goods in one or a few countries and selling them to many countries, consideration of opportunities throughout the globe though doing business in a few countries, investment of their assets internationally, engaging in activities such as exporting, importing, manufacturing in different countries and having a global perspective in its management (Rao, 2010)

1.1.2 Multinational Corporations in Kenya

Multinational corporations apart from playing a major role in international trade have also become key players in the global economy; these include those from developing economies. In third world countries, they have contributed to the development of financial infrastructure, economic and social development, employment creation, availing a wide range of better quality products and contributing to the gross national product.

They have however faced various challenges such as increased competition from other multinationals, this notwithstanding we find multinationals doing very well despite the competition they face and local firms end up collapsing in the process. (Ogutu, M., & Samuel, C. 2011)

Kenya hosts approximately two hundred and twenty six foreign MNCs which virtually cover all the sectors of the economy, majority of which are from Europe. We however find multinationals restricted from sectors that are dominated by state corporations, some of these include power infrastructure, ports and mail service. Private businesses are however venturing in these sectors due to ongoing commercialization and economic reforms. (Samuel, 2010)

1.1.3 Information Communication Technology

In order to develop the products and services that organizations offer their customers, they have had to implement the use of information and communication technology (ICT) which in turn has produced great results. Owuor (2004) Information and Communication Technology (ICT) can be defined as a technology jointly with its interrelated methods supports activities such as design, storage, and transmission of data and voice. In this regard, ICT signifies the technological standpoint of an information system (IS) and comprise computing, telecommunications and automation activities. Lucas (1987) defines an information system as a set of structured procedures which, when effected, gives information for decision making. According to Olson and Gordon (1998) information systems support operations, management, analysis and decision making in an organization thus acting as an integrated user-machine system.

As a result of ICT, there have been changes in the way business is conducted in various forms and also the economy. This has resulted in firms having to find new ways to attract and retain customers, expand the markets in which they operate and restructure their business strategies in order to maintain a competitive advantage (Gratzner & Winiwarter, 2003). Strategies specify how a business intends to compete in the market it chooses to operate and thus should integrate a market and a policy. (Baron,1996).

Market strategies consist of series of actions taken to the market environment with an aim of improving the economic performance of the firm. A policy strategy on the other hand consists of a pattern of actions taken in the policy environment in order to create value for the firm thus improving its overall economic position (Porter, 2002).

1.1.4 Multinational Mobile Operators in Kenya

The mobile market in Kenya has grown steadily with a mobile subscriber base of 40 million by early 2016. There was however changes in this market following the acquisition of Essar Telecom's yu Mobile business by Airtel and Safaricom after it was unable to break even into the market. All operators continue to invest in mobile technologies and infrastructure upgrades to support the ever growing need for mobile data services in order to avoid client churn. Competition has however challenged the profitability of some mobile operators who seem not to have benefited from the continued growth of the industry.

This may have been due to the services they offer with respect to the competition, Orange Group has had to exit the market having sold its entire 70% holding in Telkom Kenya to Helios. On the other hand Safaricom which controls two-thirds of the market share has seen a very strong growth of its M-PESA payment platform with Airtel trying to compete

with it on this service. The fierce competition among the operators has resulted to the streamlining of operations, reduction in the workforce and selling off or outsourcing of portfolios that do not form part of their core business.

To promote the development of LTE services, the government has had to pursue an open-access approach which has not gone down well with some of the players. The market has also changed with the entry of Equitel since it was awarded the MVNO licence in 2014.

1.1.5 Information Communication Industry Technology in Kenya

Kenya Economic Update 2010 identifies the ICT sector as a main driver behind the country's growth. The report shows ICT leading the other sector's, expanding by 23 per cent annually over the last decade. The report further highlights that without the ICT sector the country's economy would have grown on average 2.8 per cent instead of 3.7 per cent since 2000. It is evident that the ICT sector has had dramatic effect on the country, directly affecting the financial sector and indirectly affecting other critical sectors, such as health care and education (PREM, 2010).

Kenya has grown to become a global ICT hub, fostering a dynamic tech eco-system. Over the last decade, Kenya's ICT sector has attracted global attention through its phenomenal growth and Kenya Economic Update 2010 shows that the ICT sector contributed to approximately one quarter of Kenya's GDP. Bagha (2014) describes that Kenya is positioning itself to challenge South Africa as the continent's ICT hub.

Mobile devices and especially mobile money is considered to be the most innovative and important key driver for the ICT sector growth as well as a critical tool for poverty reduction. Manson (2013) reports that 70 percent of Kenya's population owns a mobile

phone and 70 per cent do not have access to a bank. In 2010, approximately 3 out of 4 Kenyans used mobile money, thereby transferring 20 per cent of the nations GDP by phone. Manson reports this to have reached 31 per cent by 2013. PREM (2010) States that Kenya has the largest mobile money platform in the world with 15 million users in 2010. Mobile money is only one great example of how ICT helps stimulate economic growth and social inclusion.

The Kenya Vision 2030 (2014) has outlined ICT as a key driver of economic development and significant reforms have been made by the government to further spur its growth. For example, the abolition of a state monopoly along with a new regulatory framework monitored by the Communications Authority of Kenya (CAK) has helped the ICT sector to flourish during the last decade.

1.2 Research Problem

In order to improve the connectivity between firms, suppliers and clients as well as avail business opportunities, it's important to have good information and communication infrastructure. This not only ensures that information is relayed as and when needed but also enables the management to make important decisions on time. This is more so important for firms that are far from one another; people don't have to travel in order to make decision but can easily do so from the comfort of their boardrooms. This can be best illustrated by use of technologies such as video conference facilities and internet. Client's and supplier's needs are also easily met thus bringing about satisfaction and maintaining good relationships.

Barr (2000) suggests that firms with diverse contacts are able to exchange information easily that enables good and prompt decisions to be made quickly for the benefit of the enterprise.

The application of ICT by an organization brings about various effects; this is when the consequences of the use of an ICT become manifest in the day to day running of the firm. Sproull and Kiesler (1991) The use of ICT to gain productivity and efficiency in individual tasks is defined as first level effects. As a result, internal and external communication processes become more efficient and important information is easily availed since distance is no more a barrier. Social structure of the organization on the hand relate to second level effects such as change in communication structure of the organization.

Hammer and Mangurian (1987) on the other hand identified efficiency, effectiveness and innovation on processes as the three effects of application of ICT in organizations. These could be as a result of acceleration of certain processes, organization environment relationship and organizational geographical expansion reach.

Several studies have been conducted in regard to application of ICT in the context of Kenya companies. Kamau (2013) The effect of ICT on the competitive advantage of multinationals banks in Kenya, Gitonga (2010) Application of ICT technology as a strategic tool in insurance companies in Kenya and Nyang'au (2014) Impact of ICT on Kengen's performance. In this regard the study sought to establish the impact of ICT on the performance of multinational mobile operators in Kenya and tried to respond to the research question: what is the effect of ICT on the performance of multinational mobile operators in Kenya?

1.3 Research Objective

To determine the effect of application of Information communication technology on the performance of multinational mobile operators in Kenya.

1.4 Value of the Study

The study on the application of ICT by multinational mobile operators in Kenya and how these affect their performance will be of value to the ICT investors/industry in Kenya, other MNCs and mobile operators wanting to set up camp in Kenya as well as the government and policy makers. For the ICT investors/industry, the study will be able to show which sectors in the ICT industry that they should invest more in that are in demand and which will give them a higher return on their investment. Thus the investors are able to concentrate on the sectors that are of value, at times investors might put up ICT infrastructure that might not be of much help to the various MNCs and mobile operators and thus end up making losses on their investment.

For those MNCs and mobile operators wanting to set up camp in Kenya, this study will help them know the various benefits that other multinationals have gotten and how this has helped their performance. One of the factors that contribute to the setting up of camp by a multinational in a country is the level of ICT infrastructure development; this is because ICT plays a big role in the running of a company. Thus by knowing the benefits that other mobile operators have gotten they will be able to make a wise decision on the kind of investment to make.

Policymakers and the government also stand to benefit from this study. A solid understanding of the benefits that accrue to MNCs in Kenya by policymakers and the government will impact on their investment and policy decisions in ICT. Multinationals

bring with them various advantages when they set up camp in a country such as economic development, knowledge transfer, skills development, corporate social responsibility e.t.c. Bearing this in mind, the right decisions by both government and policy makers on ICT are made that are able to attract more multinationals or those that create a conducive environment for them to operate.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Literature review is the process of reading, analyzing, evaluating, and summarizing scholarly materials in regard to a specific topic. The results of a literature review serve as part of a research article, thesis, or grant proposal. This chapter reviews both theoretical and empirical literature related to this study.

2.2 Theoretical Foundations of the Study

This study was guided by three main theories. These theories are the international trade theory, resource based theory and Uppsala theory

2.2.1 International Classical Trade Theory

As per the classical writers, differences in cost form the basis of trade. Differences in cost may be of two types: (i) absolute cost differences, and (ii) comparative cost differences. Adam Smith in 1776 argued that absolute cost difference forms the basis of trade. However David Ricardo in 1817 went a step further to define trade in terms of comparative cost difference or comparative advantage. According to Adam Smith, it is the difference in absolute production cost that causes the emergence of trade. A country that can produce goods or services at a lower cost has an absolute advantage over the other.

It would thus be advantageous for the country if it specializes in the production of the cheapest good. In this regard a country should specialize in production and export of those goods and services in which it has lower cost and import those goods and services in which it has a higher cost. However Ricardo argued that absolute cost advantage

should not necessary be the reason why two countries engage in business but comparative cost. To him, comparative difference in cost is a sufficient condition for trade to emerge. As per Ricardo a country will produce and export that product or service in which it has a lower opportunity cost and import that in which it has a high opportunity cost. Opportunity cost in this case been the cost incurred by not enjoying the benefit that would have been had by taking the second best alternative.

2.2.2 Resource Based Theory

The focus on this theory should be the firm's competitive advantages generated by its unique set of resources; these may include ICT, human resources e.t.c. Thus the most important characteristic of the RBV is the focus in the internal forces of firm which gives the firm a competitive advantage over its competitors. As a result of this, a firm's resources been the foundation of its strategy has generated reinforced interest. This is as a result of dissatisfaction with the focus on the relationship between the firm's strategy and the external environment (Grant, 1991). The resources of the firm can be classified according to the following categories: capabilities, location resources, tangible and intangible resources, strategic resources, assets, human resources, technological resources, social resources and organizational resources.

2.2.3 Uppsala Model

Uppsala model theory explains how firms gradually expand into foreign markets as they grow; it is similar to the product operation and market (POM) model. These two models have the following characteristics: companies start international operations from geographically close countries and move gradually to geographically more distant countries thus building capacity as they move on, they start their international operations

by using traditional export methods and gradually move to using more intensive and demanding methods such as sales subsidiaries both at the company and target country level, they also first gain experience from the local market before moving on to international markets, this enables them to replicate what they have learned though not fully due to different market requirements.

The model also suggests that international sales begin with occasional export orders that are followed by frequent exports; and the product operation market model states that the first sales object is physical product – services, knowledge, and systems are mostly but not necessarily later added to the sales objective. Additionally, the product operation market model assumes that the first expansion in the sales strategy concerns expansion to new international markets. Finally, the business will not commit higher levels of resources to the market until it has acquired increasing levels of knowledge and therefore the internationalization evolves stepwise at a relatively slow pace because of domestic market regulations and/or organizational learning. This level of engagement may however altogether decrease or cease if performance and prospect are not sufficiently met.

2.2.4 Application of ICT by Mobile Operators

The separation that once existed between the telecoms players from the world of information technology has been drastically reduced by evolution and convergence of technologies and as a result both sectors are on a collision course. We find that many telecommunication companies are actively moving beyond just offering voice and data services and selling IT solutions. In order to drive growth in ICT services, a number of telecommunication companies have recently acquired IT firms.

Examples of firms that have moved in this direction include KPN's international acquisition of Getronics in 2007 and Nippon telegraph and telephone recent acquisition of Dimension Data. Emerging markets have also not been left behind as portrayed by the partnership between Telmex and Hilderbrando and the acquisition of IT player Sigma by Telkom Indonesia. Cisco's move to into the server market is also an illustration of how telecoms equipment players are also following suit. Locally Saficom which is a mobile operator has not been left behind since it also ventured into the IT sector by the introduction of its cloud solution.

The change however is not in one direction only since cloud computing which is a modern IT service requires communication products as essential parts of its offering. In this regard many IT players are also recognizing that they have the ability to move into the telecommunication space. This has been achieved by the design of IP based communication applications.

As a result of the above mentioned changes in the industry, companies are integrating the role of the chief information officer (CIO) to include decision making both in IT and telecommunication fields. CIOs on the other hand have broadened their perspective as far as enterprise level ICT is concerned since the boundaries between voice and data, mobile and fixed telecoms and IT have drastically reduced.

2.3 Empirical Evidence

Mahmood and Mann (2005) Investment in information technology alone does not increase performance and productivity. This means that for effective productivity, there must be more than investment in ICT. Information technology investments that go hand in hand with work processes results in effective productivity, as a result management

should be involved in the strategic decision making on these investments. Keller (2004) Productivity gains from information technology come as a result of the firm recognizing how to best make use of the information technology resources that already exist. Brynjolfsson and Hitt (1998) found that there was a significant variance across organizations on the positive return on investment in information technology.

As a result of these variances, some researchers have questioned the value of information technology when it comes to productivity to the extent of concluding that it has a negative effect. Dedrick et al. (2003), points out that there are no studies that have clearly identified the link between investment in information technology and a firm's profitability. (Mahmood & Mann, 2005), on the other hand identifies this as productivity paradox when gains in information technology investment cannot be accounted for despite the investments made.

Stephen Roach (1994) used the term productivity paradox when describing the US service sector which owned 85 percent of the state's information technology resources but still had very low productivity growth. This was despite the sector having invested \$860 billion in information technology resources; this clearly indicated that there was something wrong as the country entered the information age.

Companies that buy equipment that make workers more efficient and individual workers productive end up reducing labor costs. However service companies that buy information technology will tend to maintain the same number of workers and labor costs. This is as a result of being protected from competition by regulation and the lack of foreign investors; as a result they become more relaxed on matters pertaining to cost control (Roach, 1994).

Ongoing research to establish a link between information technology investment and productivity has shown that information technology has an impact on the latter. Brynjolfsson (2003), and Dedrick et al. (2003), concluded that for more than three decades, there has been an increase in the annual output per worker and productivity as a result of application of information technology. The enhancement of workers skills in information technology resulted in even higher firm output, productivity and performance (Hitt & Brynjolfsson, 1995; Kudyba, 2004).

Melville et al., (2004), suggests that firms that use information technology effectively and efficiently have an impact on sales return and market share. In this regard, firms that have implemented technology efficiently have reported higher sales returns than those that haven't.

2.3.1 Decentralized Decision Making

Melville et al., (2004) discovered that a combination of decentralized decision making and investment in information technology resulted in improved productivity in an organization. This has been proven so since companies that have done this have achieved 5% more productivity than companies that hasn't. Investment in information technology without new work systems however have resulted in poor performance (Brynjolfsson & Hitt, 1998). The decentralization of decision making entails empowering non-management staff in the decision making process. This results in open and more interactive organizational structures compared to the traditional closed systems..

Decentralized decision making should not be difficult to implement in this modern day of technology since time and distance barriers have been overcome through modern technology like the internet, this is better than having a centralized management system

that empowers only a small group of people to make decisions on behalf of an entire organization without taking into consideration their views. (Charoenngam, Ogunlana, Fu-Ning, 2004).

Brynjolfsson and Hitt (1998) to achieve maximum benefit on the information technology investment, other forms of investments in business processes, the organization and strategies need to be made. These investments however do not occur on their own and thus for information technology to have an impact there must be complementary organizational investments. (Brynjolfsson & Brown, 2005).

2.3.2 Measurement

A method of measure has to be established in order for researchers to determine productivity as a result of investment in information technology. Brynjolfsson and Hitt (1998) discovered that growth in productivity was a measure of the social economic status of a people. Productivity can thus be defined as the output per unit of input; however it is not easy to measure such an abstract concept more so in modern economy.

Researchers have time and again established that it takes several years to realize the productivity of an investment in information technology. Mahmood and Mann (1998) found out that it takes two to three years before a firm's return on investment in this area can be realized. Dedrick et al. (2003) too discovered an even longer period of time. According to their findings, organizations have learned to apply information technology in a useful way with results been realized after four to seven years. Research that utilize multiyear data however have been able to give a more accurate perspective on this subject matter. (Mahmood & Mann, 2005).

Tallon and Kraemer (2006). Propose a perceptual method of measure which is a new way of determining the impact of information technology. In this case, focus is on accounting, financial or economic parameters. When structured around information technology, perceptual measures impacts at the process-level and results in greater insights than objective criteria alone. Based on executive's perception of information technology, the method develops a process oriented form of information technology's economic value.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used to carry out the research. It goes further to describe the type of data and source of data, the target population and sampling method used. Finally it describes how data was collected and analyzed.

3.2 Research Design

This study used a census survey and followed a descriptive research approach. Cooper and Schindler(2001) defines descriptive research approach as an official, objective, systematic approach to describe and examine relationships and verify cause and effect of interactions among variables. Descriptive research design was used since it provides a true account of the abilities, behaviors, characteristics, opinions, belief and knowledge of a particular individual, entity, situation or group (Zikmund et. al., 1983).

3.3 Target Population

Population of research consisted of employees working in different departments and levels from the three multinational mobile service providers operating in Kenya namely Safaricom, Airtel and Telkom Orange. The questionnaires were distributed across the three mobile operators.

3.4 Data Collection

The researcher administered questionnaires to the sampled respondent of the three multinational mobile operator employees in order to collect primary data. The questionnaires provided both quantitative and qualitative data. The questionnaire was

divided into section A which was about General Information and section B which was about effect of ICT on the performance of mobile operators. The researcher collected the questionnaires from the respondents after a period of two weeks after which data processing and analysis took place.

3.5 Data Analysis

Data having been collected was coded and descriptive statistics used for analysis. Mean and standard deviation was used to analyze section B data while frequency measures were used to analyze data in section A about the effect of ICT on mobile operator's performance. Frequency tables were drawn from summarized data. Quantitative analysis was used to analyze the effect of Information and Communications Technology on the mobile operator's performance.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The study sought to ascertain the effect of application of ICT on the performance of multinational mobile operators in Kenya. The data was collected through the questionnaire from the employees of the three mobile operators serving in various departments based on their level of engagement with ICT policy formulation or its implementation and reporting.

4.2 General Information

The study sought to establish the information on the population employed in the study with the length of period of work at the company, highest level of education, and gender of the respondents.

4.2.1 Gender of the Respondents

The respondents were requested to indicate their gender and from the findings it was established that, 50% was shared equally between the respondents who indicated were male and female. This implied that there was equal representation of the male and female.

	Frequency	Percent
Male	2	50
Female	2	50
Total	4	100

Table 4.1: Gender of the Respondents. Source: Research Data 2016

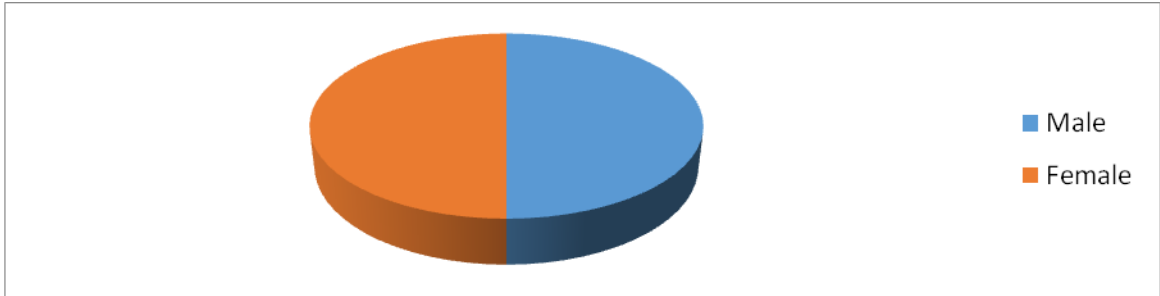


Figure 4.1: Gender of the Respondents. Source: Research data, 2016

4.2.2 Level of Education

As pertaining to their highest level of education attained, 50% was shared equally between the respondents who had undergraduate degree education, and post graduate degree in various fields indicating clearly their level of articulation of the subject matter and their ability to contribute to the ICT as was evidence in the research findings. This is also the reflection of the mobile operators’ culture change philosophy of continuous training for best results.

	Frequency	Percent
Bachelor degree	2	50
Postgraduate degree	2	50
Total	4	100

Table 4.2: Highest Level of Education. Source: Research Data, 2016

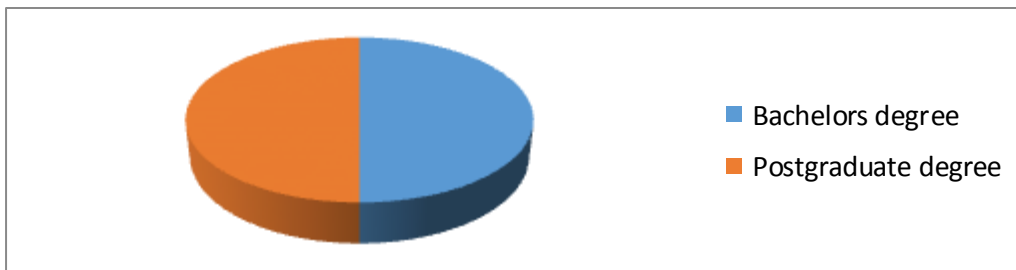


Figure 4.2: Highest Level of Education. Source: Research data, 2016

4.2.3 Duration respondents has worked in the multinational mobile operators

The study findings as shown in the figure below, 50% of the respondents have been with the organization for over 21 yrs, while 25% of the respondents have been with the organization for 11 to 15 yrs and 6 to 10 yrs. This is a product of the mobile operator's culture of attracting and retaining the best and hence the extensive experience resource, internal capabilities, the mobile operators enjoy in building its competitiveness as reflected in its ICT.

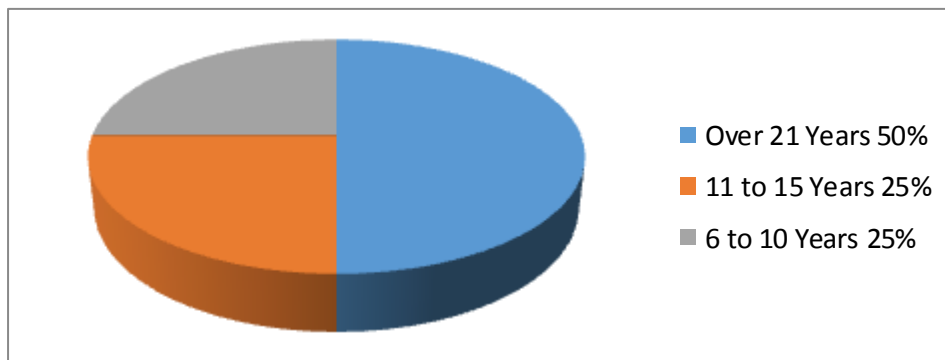


Figure 4.3: Duration respondents has worked in the multinational mobile operators

Source: Research data, 2016

4.3 The effect of ICT on Mobile Operator's Performance

The objective/aim of the study was to establish the effect of application of ICT on the performance of multinational mobile operators in Kenya.

The respondents were asked to indicate the extent they agree with the statements on the effect of application of ICT on the performance in a four point Likert scale. The range was "Strongly Disagree (1)" to "Strongly Agree (4)". The scores of strongly disagree and disagree have been taken to represent a variable which had a mean score of 0 to 2.4 on the continuous Likert scale; ($0 \leq S.D < 2.4$). The scores of agree and strongly agree have been taken to represent a variable with a mean score of 2.5 to 4.0 on the continuous Likert scale ($2.5 \leq S.A < 4.0$). The results are shown on table 4.1.

Statement	Mean	Standard Deviation
Current tasks have benefited from improved IT	3.75	0.50
Often looks for new ways to use technology	3.50	0.58
Uses IT to identify market trends	3.50	0.58
IT strategy aligns with business strategy	3.50	0.58
Use IT to facilitate automation of processes	3.50	0.58
Use IT to facilitate new processes	3.50	0.58
Establishing a service oriented architecture	3.50	1.00
Cost reductions through IT	3.25	0.50
Use IT to facilitate operational efficiency	3.25	0.50
Use IT to control quality of products/services	3.25	0.50
IT provides better coordination	3.25	0.50
Improve levels of production	3.25	0.50
IT increases ability to anticipate customer needs	3.25	0.50
Quick adopter of new IT	3.00	0.82
IT improves internal communication	3.00	0.00
IT improves coordination in geographically separate units	3.00	0.00
Increased management span of control	3.00	0.82
Assists in serving new market segments	3.00	0.82
Higher level of responsiveness to customer needs	3.00	0.00
Provides training on new IT	2.75	1.26
Provides the IT tools necessary for success	2.75	0.96
Redesign business process to create competitive advantage	2.75	0.50
Take advantage of business opportunities	2.75	0.50
Employees empowerment	2.75	0.50
More effective than competitors	2.75	0.96
Improves productivity of labor through automation	2.75	0.50
Business innovation	2.75	0.50
Continuous process improvement	2.50	0.58
Modeled business process	2.50	0.58
Common communication across all levels	2.50	0.58
Improves process and content of decision making	2.50	0.58
More efficient than competitors	2.50	0.58

Table 4.3: The effect of ICT on Mobile Operator's Performance

Source: Research data, (2016)

4.4 Discussion on the Findings

The results showed that majority of the respondents agreed and strongly agreed that ICT application had an impact on the multinational mobile operators in Kenya. From the data collected, the respondents strongly agreed that Current tasks have benefited from improved IT, company often looks for new ways to use technology, Uses IT to identify market trends, IT strategy aligns with business strategy, Use IT to facilitate automation of processes, Use IT to facilitate new processes, Establishing a service oriented architecture, Cost reductions through IT, Use IT to facilitate operational efficiency, Use IT to control quality of products/services, IT provides better coordination, Improve levels of production and IT increases ability to anticipate customer needs have an impact on the performance of their respective multinational mobile operators in Kenya.

This was supported by a mean of 3.75 on current tasks that have benefited from improved information technology and a mean of 3.25 on Information technology increases ability to anticipate customer needs. This was the range that all activities that were strongly agreed on fell. Likewise, the respondents agreed that company is a quick adopter of new IT, IT improves internal communication, IT improves coordination in geographically separate units, increased management span of control, assists in serving new market segments, higher level of responsiveness to customer needs, Provides training on new IT, Provides the IT tools necessary for success, redesign business process to create competitive advantage, Take advantage of business opportunities, Employees empowerment, More effective than competitors, Improves productivity of labor through automation, use of IT for business innovation, Continuous process improvement, modeled business process, Common communication across all levels, Improves process

and content of decision making and More efficient than competitors have an impact on the performance of their respective multinational mobile operators in Kenya. This was supported by a mean of 3.00 on the firm being a quick adopter of information technology and a mean of 2.50 on the firm being more efficient than competitors. This was the range that all activities that were agreed on fell.

From the results above, we find that the firms were very good at the application of IT such as current tasks having benefited from IT application, use of IT to identify new market trends, use of IT to facilitate automation of processes, use of IT to control quality of products/services. These were among the strongly agreed upon points.

The provision of training to employees, redesign of business process to create competitive advantage, use of IT for business innovation and improvement of processes and decision making through IT were among points that were agreed on. These are however very crucial in order for the firms to realize maximum benefit from IT investments and should have been among the strongly agreed upon points.

The training of employees on the new IT facilities that have been introduced need to be done so that employees can be effective and efficient in the application of the facilities in their day to day activities and for maximum benefits to be realized. Redesign of business processes is another way of ensuring that gains on IT investment are fully realized, this ensures that the business processes are in line with the new IT facilities. For example we cannot have automation of processes through IT and yet continue manually implementing processes.

IT should also be used for business innovation such as the Lipa na Mpesa and M banking by Safaricom which has really generated revenue for the firm. Other ways that IT can be used for business innovation is the use of video conference facilities to hold meetings among the various departments of the firms in different geographical areas thus saving on time and travel costs.

Improvement of processes and decision making through IT should also be encouraged in the firms, for example the use of various IT tools to collect data on the network performance and thereafter making informed decisions on how to make any necessary changes in order to serve customers better is one of the ways that processes and decision making can be improved.

Thus the results confirmed that ICT application has an impact or effect on the performance of these firms. The findings of the study are in consistent with the findings of Kamau (2015), who found that ICT has become a key element of productivity and profitability and also that ICT enables offering a broad variety of services to clients and automate operational activities within the organization as well as respond to market demands and competition.

The study also found out that IT has increased the level of competition and that organizations have integrated new technologies in order to satisfy their customers. The findings also concur with the literature review in that for information technology infrastructures or investment to be effective, then decentralized decision making structures and investment in other business processes ought to exist in the organization (Brynjolfsson & Brown, 2005).

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter depicts the summary on the data findings investigating the effect of application of ICT on the performance of multinational mobile operators in Kenya. The conclusions and recommendations are also drawn.

5.2 Summary of Findings

The study established that ICT application has an impact on performance. This is evident because the majority of the respondents agreed and strongly agreed that ICT application has an impact on the multinational mobile operators in Kenya. From the data collected, the respondents strongly agree that Current tasks have benefited from improved IT, Often looks for new ways to use technology, Uses IT to identify market trends, IT strategy aligns with business strategy, Use IT to facilitate automation of processes, Use IT to facilitate new processes, Establishing a service oriented architecture, Cost reductions through IT, Use IT to facilitate operational efficiency, Use IT to control quality of products/services, IT provides better coordination, Improve levels of production and IT increases ability to anticipate customer needs have an impact on the performance of their respective multinational mobile operators in Kenya.

Likewise, the respondents agreed that Quick adopter of new IT, IT improves internal communication, IT improves coordination in geographically separate units, increased management span of control, Assists in serving new market segments. Higher level of responsiveness to customer needs, Provides training on new IT, Provides the IT tools

necessary for success, Redesign business process to create competitive advantage, Take advantage of business opportunities, Employees empowerment, More effective than competitors, Improves productivity of labor through automation, Business innovation, Continuous process improvement, Modeled business process, Common communication across all levels, Improves process and content of decision making and More efficient than competitors have an impact on the performance their respective multinational mobile operators in Kenya.

5.3 Conclusion

As per the research, the respondents strongly agreed: Current tasks having benefited from improved IT services, the current tasks in this case were administrative, operational, finance and customer service activities of the firms. The firms also often look for new ways to use technology; this can best be illustrated by the use of Safaricom's Mpesa platform as a pay bill method and mobile banking service other than just been a money transfer service. This has resulted in time and money saving since people don't have to travel to make payments or visit banking institutions to apply for loans but can easily do all these from their mobile phones. IT has also been used to identify market trends; this is done through the use of technology that enables the firms for example to establish the calling and browsing habits of customers in terms of age group, time e.t.c. This in turn enables the firms to be able to decide which services to introduce into the market.

The IT strategies of these firms align with business strategies in that the firms will only invest in IT resources that enable them to achieve their business objectives. A good example on this is the investment in cloud solutions and this is in line with the business strategies of these firms since the technology trend is the storage of data in the cloud.

This does not only benefit the firms since they don't have to invest in storage capacity but also they are able to offer this solution to other clients thus generating revenue. The automation of processes has also been facilitated by use of IT in that the mobile operators have made it easy for their clients to be able to purchase various products and services from their websites. Mobile operators have also facilitated the application of new processes through IT; case in point is the confirmation of where one has been registered as an electorate. This can now be done through the mobile phone thus ensuring that people are at ease.

Through these IT services or processes, the mobile operators have been able to establish services oriented architecture in that not only do they themselves benefit from the various services as a result of the IT solutions but also their customers, this in turn ensures that they are able to reduce customer churn. Cost reductions have also been achieved through the application of IT; to the firms this has been as a result of automation of their various processes which would otherwise have cost money and man power to execute. A good example on this is the automation of the data collection for their network which in turn enables them to measure on customer experience and make the necessary adjustments. Clients on the other hand have been able to access various services through their mobile phones.

Operational efficiency has also been achieved through IT in that approvals of various processes such as employees travel allowances, suppliers purchase orders and budgets don't have to be done manually but are done through well established IT applications. This ensures that there are no delays and approvals can be done from anywhere and at any time as long as one is connected to the system. This has definitely resulted in great

operation efficiency and thus the satisfaction of all stakeholders. Control of quality of the services offered have also been achieved through the application of IT, the quality of the calls that clients make through the mobile operators networks is done through the established IT resources. The data obtained from these resources is analyzed and the necessary changes that need be done in order to maintain the standards required by law are made.

Application of IT has also resulted in better coordination among the various departments and regional operational offices of the mobile network operators, this is because employees can easily be linked up to discuss and make decisions on various issues and they don't necessary have to come together in order to this. Thus distance or geographical location ceases to be a hindrance to the various organizational activities. As a result, levels of production have in turn improved since there is a lot of time and money saved and better decisions are also made that impact on customer services.

Ability to anticipate customer needs has also increased since the mobile operators are able to use IT resources that give clear indication of how the clients are consuming the various services offered. In this regard, areas that need the operator to deploy more services are easily identified; an example of this is when a certain area needs more network coverage due to increase in population. In this case, the mobile operator is able make a decision as whether to adjust the current network coverage or expand the network coverage in order to accommodate the customer needs.

5.4 Recommendations

The research findings show that the respondents strongly agreed to the following as a result of investment in IT; improvement in the implementation of current tasks, automation of processes, establishment of service oriented architecture, facilitation of operation efficiency, quality control of products/services, better coordination, improvement in levels of productivity, and ability to anticipate customer needs. However the respondents agreed that the firms provide training for new IT systems, provides IT tools necessary for success and redesign process to create competitive advantage.

In our literature review, Brynjolfsson and Hitt (1998) concluded that to achieve maximum benefit on the information technology investment, other forms of investments in business processes, the organization and strategies need to be made. The enhancement of workers skills in information technology also needs to be done in order to achieve higher firm output, productivity and performance (Hitt & Brynjolfsson, 1995; Kudyba, 2004).

Thus for these mobile operators to achieve maximum results as a result of their investment in information technology, they need to invest in the training of their employees for the new IT resources that they introduce and also redesign their business processes.

5.5 Limitations of the Study

Reliability and validity of the study's information which was obtained from the staff depended on how honest they were, thus if the staff were not honest enough then the conclusions drawn might not be accurate enough. Some staff also did not respond to the questionnaires given thus also reducing the accuracy of the analysis.

The findings of this study are specific to multinational mobile operators in Kenya and thus may not be applicable to other industries. To be able to have an overview of the effect of IT in other industries then a similar study should be conducted and results compared to establish which industries are reaping maximum benefits from investment in IT.

The data was collected by likert scale questionnaires which might have biases of the respondents reflected in the results. Thus to minimize on such biases, the sample size should be large enough in order to overshadow such issues.

5.6 Areas for Further Research

A similar study should be conducted out in other sectors including other service industries and manufacturing firms in Kenya and results compared. This will enable the participants in the various industries establish areas of improvement and thus be able to achieve the maximum benefits of their investments.

Information technology is also evolving very fast and within a short period, technology that was thought to be the latest in the market becomes absolute. Thus a study should be conducted to determine how firms are able to integrate their old technology with the new technology and ensure a smooth transition. This is because investment in some of these

technologies cost quite a lot of money not only in the actual hardware and software but also in the training of staff. The results of these investments in turn take time to be fully realized as found out in the literature review.

Another area of study should be on how firms are able to maintain highly trained staff on the various information technologies that they have invested in despite the fierce competition among the firms for human resources. A firm that loses its staff often suffers since it has to train other employees all over again and more so if there was no proper transfer of knowledge.

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APPENDICES

Appendix I: Letter of Introduction



UNIVERSITY OF NAIROBI
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MBA PROGRAMME

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Nairobi, Kenya

DATE 23/07/16

TO WHOM IT MAY CONCERN

The bearer of this letter JOHN MACHARIA GICHO


Registration No. AG.170907/2014

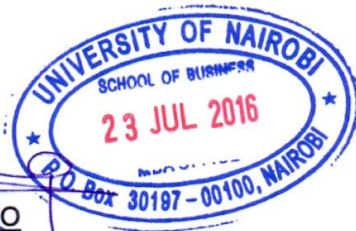
is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.


PATRICK NYABUTO
MBA ADMINISTRATOR
SCHOOL OF BUSINESS



Appendix II: Questionnaire

SECTION A: GENERAL INFORMATION

1. Gender: Male []

 Female []

2. What is your highest education level? (Tick as applicable)

Primary []

Secondary []

Diploma/certificate []

Bachelors' degree []

Postgraduate degree []

Others-specify

3. Years of service/working period with Employer (Tick where applicable)

Below 5 years

6-10 years

11-15 years

16-20

Years

Over

21

years

SECTION B:

Please indicate to which extent you agree or disagree with each of the following statements by ticking appropriate answer.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1 The company is a quick adopter of new information technology.				
2 The company often looks for new ways to use technology.				
3 current tasks have benefited from improved information technology.				
4 Information technology is used to identify market trends through powerful analytical tools.				
5 Cost reduction is routinely pursued through information technology.				
6 Training for its employees on new information technology is provided				
7 Information technology tools necessary for its employees to be successful are provided				
8 Information technology strategy of the company aligns with its business strategy.				
9 Information technology is used to facilitate the automation of core business processes.				
10 Information technology is used to facilitate new processes that constitute a better way of doing business.				

11 Information technology is used to facilitate operational efficiency.				
12 Information technology is used to control the quality of products/services.				
13 The company redesigns business processes in order to create a competitive advantage.				
14 There is recognition that continuous process improvement is valuable for employees.				
15 A service oriented architecture is been worked on.				
16 The company has modeled its business processes.				
17 Authority has been granted to me to make the necessary decisions in order to take advantage of business opportunities.				
18 The company has common communication across levels..				
19 Information technology improves the process and content of decision making				
20 Information technology improves internal communication within.				
21 Information technology provides better coordination among functional areas.				
22 Information technology improves coordination among geographically separate units.				
23 Management's span control has been increased through information technology.				

24 Employees are empowered by the use of information technology.				
25 The company is more efficient than the majority of its competition.				
26 The company is more effective than the majority of its competition				
27 Information technology is used to improve the productivity of labor through automation.				
28 Information technology is used to improve the levels of production.				
29 Information technology assists the company in serving new market segments.				
30 Information technology increases the company's ability to anticipate customer needs.				
31 Information technology is used to facilitate a higher level of responsiveness to customer needs.				
32 The company is effective at using information technology for business innovation.				

-THANK YOU-