THE EFFECT OF ICT IN EMPLOYEE PRODUCTIVITY

CASE STUDY OF MTN TELECOMMUNICATION COMPANY – UGANDA

BY

NALUBEGA JACKLINE

2014-B021-20036

A RESEARCH REPORT SUBMITTED TO THE FACULTY OF BUSINESS ADMINISTRATION AND MANAGEMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A BACHELOR'S DEGREE IN BUSINESS ADMINISTRATION AND MANAGEMENT OF UGANDA MARTYRS UNIVERSITY

MAY, 2017

DEDICATION

This research report is dedicated to my beloved sisters Birungi Suzan for having been there for her parental assistance and guidance that has helped me to reach at this level, also not forgetting sister Namukisa Jane, Nalugwa Diana, my brother Ssuna Nicolas and my Supervisor Mr. Nalela Kizito for his guidance to the achievement of this piece of work.

ACKNOWLEDGEMENT

The success in producing this work is attributed to such a number of people, to whom I wish to acknowledge. The completion of this piece of work has been such a task that would not have been a success when handled solely.

I first of all thank the Lord Almighty, who has given me abundant health, strength, and courage to be able to complete this work. My sincere gratitude goes to my Supervisor Mr. Nalela Kizito whose guidance has given me way form to this piece of work

Finally, special thanks go to my family, brothers and sisters for their tolerance, patience, encouragement and sacrifice throughout my struggle for this academic achievement. They have never lost hope in me.

GOD BLESS YOU

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This research investigated the effect of information and communication technology on the productivity of employees, case study of MTN Uganda. The study was guided by the following objectives, to establish the types of ICT used at MTN Uganda, to examine the effectiveness of ICT on employee's productivity at MTN Uganda and to examine the relationship between ICT and employees productivity at MTN Uganda.

It was concluded that that MTN use modern technology to improve its employees' performance, MTN makes video-conferencing which allow two or more locations to communicate by simultaneous two-way video and audio transmissions, the Company make conference call talks to several people at the same time, The Company exchanges digital messages between people using digital devices such as computers, tablets and mobile phones. Employees have been able to perform their work effectively, employees catch up with modern technologies introduced by the company, their productivity has improved, with automating technology, greater control and continuity over the work process has been achieved, and The Company has been able to improve its performance as employees become productive by using modern technologies. Employees of MTN (U) has improved on their effectiveness as they use modern information and communication technology,

Customer care towards the company's customers has improved as employees use information and communication technology, There is low rate of errors by employees after the introduction of information and communication technology at MTN (U), Employees' morale have improved as they use modern information and communication technology, there is minimal redundancy of employees as every employee is busy on his/her own computer and gave the overall summary on the relationship between ICT and employee productivity.

It was recommended that there is need to emphasize ICT in the organizations as it increases on employees' productivity through effectiveness. ICT systems and processes should be given concrete emphasis. There is need to involve the employees in the process of decision making so as to have effective ICT policies and strategies for better organizational performance. There is need for proper human resource management in an organization so as to achieve the organizational goals and objectives.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Strong competition causes the new technologies to be employed for improving productivity level of company employees. Productivity is one of the important factors to evaluate the economic growth both at the industry and firm level. Its growth directs companies to increase their market share (Aral and Lynn, 2009)

The advent of computers and Information Technology (IT) has been perhaps the single massive drive impacting organizations during past few decades. Information Technology or IT is revolutionizing all the living ways (Armbruster and Someka, 2005). No doubt, it has given a new meaning to the word "Convenience". Information Technology has drastically changed the business landscapes and word "IT" has become the "Catchword" of the modern life today. Information Technology has become, within a very short time, one of the basic building blocks of modern industrial society (Autorand Murnane, 2003). The effective use of IT is an essential element of competing in a fast-paced, knowledge based economy. Information Technology is the major contributor to the progress of the developed countries (Azmat and Reenen (2008)).

Azmat and Reenen (2008) defined information technology refers to all forms of processing, storage and transmission of information that are used in an electronic format. Baker and Hubbard (2004) defines information technology as the term that describes the organization's computing and communications, infrastructure, including computer systems, telecommunication networks, and multimedia (combined audio, text, and video) hardware and software. Physical equipment that is used for this purpose includes: Computers, communication networks and tools, fax

machines, and electronic software (Poku and Vlosky, 2002). Generally, information technology covers a wide range of equipment, computers, tools, data storage, means of communication and networking, applications and services that are used by organizations to create data and knowledge.

At the most basic level, productivity is based on the economics if the company. It is measured as the ratio of output yo input. Black, and Lynch (2001) defined productivity as to maximize the use of physical resources, human resources, and other factors in a way that results in lower production costs, expansion of markets, increased employment and, and the rise of living standards for all groups of the society.Garicano and Paul (2010)defined productivity as the level and intensity of use of each of the factors of production and maintain that "Productivity is thinking and approach based on which that each person can do every day jobs and tasks more efficiently".

According to Stephenson and Betsy (2006), employee productivity is an assessment of the efficiency of a worker or group of workers. Productivity may be evaluated in terms of the output of an employee in a specific period of time. Typically, the productivity of a given worker will be assessed relative to an average for employees doing similar work. Because much of the success of any organization relies upon the productivity of its workforce, employee productivity is an important consideration for businesses. Employee productivity is one element of IT productivity, the relationship between an organization's technology investments and its corresponding efficiency gains, or return on investment (ROI).

Belief in the improvement of productivity means having faith in human progress. Improving the productivity is a fundamental to survive companies in a very competitive market. The purpose of

all productivity-related attempts is to make lasting improvements in performance (Draca and John (2007). IT with features such as storing, processing, marketing, and transferring a large bulk of data can assist employees to improve the overall organization's productivity. In addition, the significance of productivity and the necessity of its assessment have received much attention given the increasing levels of competition, technology complexity, diversity of tastes, lack of resources, and rapid exchange of information.

In quest of improving efficiency and effectiveness, the companies are making heavy investments in Information Technology (Dessein and Santos, 2006). Information technology is one of the valuable resources to increase the economic growth and productivity of employees that results into customer satisfaction in telecommunication companies.

Information Technology has made rationalization possible in organizations by minimizing human involvement. These aspects of II are labeled as automational (Dessein and Wouter 2002)). Increased access to information and enhanced means of accessing, analyzing, storing and communicating information can result in effects in addition to pure rationalization.

1.1 Background of the problem

MTN-Uganda is one of the powerful telecommunication companies in the industry which have continued business activities independently since 1990's. The headquarters of MTN Uganda are located at 22 Hannington Road on Nakasero Hill in the Kampala Central Division, one of the administrative units of the city of Kampala, the capital and largest city of Uganda (Matsiko and Philomena, 2016).

MTN Uganda is a subsidiary of MTN Group, a multinational telecommunications group connecting approximately 232 million people in 22 countries across Africa and the Middle East).

In 2009, MTN Uganda introduced its mobile telephone-based banking product known as Mobile Money. As of March 2015, MTN controlled 80 percent of the mobile money market in the country (Mark and Muhumuza, 2015).In November 2015, MTN Uganda switched off 3.7 million of its 11.5 million customers to comply with the Uganda Communications Commission's new SIM card registration requirements.

In May 2016, MTN Uganda borrowed US$114 million (UGX: 385.8 or 380 billion, depending on the source) to expand its network and build a new headquarters building on Jinja Road in Kampala (Semakula and Othman, 2016). Funding was in the form of a syndicated loan by a consortium of four Ugandan banks, namely Stanbic Bank Uganda, Standard Chartered Uganda, Citibank Uganda, and Barclays Bank of Uganda.In August 2016, MTN Uganda in partnership with Commercial Bank of Africa (Uganda) introduced a new product that allows customers to save money and access microloan products, using their cell phone (Khisa and Isaac, 2016). The product, called MoKash is available on personal accounts and on accounts for small and medium-sized enterprises

1.2 Statement of the problem

Productivity at the organizational level has been affected by the level of competition which leads other organisation to set up the development of their productivity (Black and Lynch (2001)) increased productivity, however, does not necessarily imply increased profitability. Productivity growth a rises from the development of new work methods based on new technology and production techniques consequently, when the new technology of ICT was introduced in working life productivity growth was expected. But because computer was initially used in a situation where productivity growth had been low and employment had been high since mid

1970s, it has initially difficult to prove the importance effect of investment in ICT (Garicano and Paul (2010).

Employee productivity has been influential to the continuity of organizations but today employee's productivity is low which has greatly affected most of the organizations progress. Poor employee's productivity has been because most employees have limited skills to perform the work assigned to them by the organizations and therefore unable to give the organizations what is expected of them in terms of efficiency and effectiveness. Telecommunication companies are most affected by poor employee productivity because of the technicalities of their services as most of the work required advance information technologies. Therefore, these companies have been required to implement advanced information technologies to easy the work of their employees that would improve their overall productivity. MTN Company being a big company with a variety of services and products has advanced information technologies that help its employees to serve its customers effectively.

Basing on the above background, the researcher was prompted to investigate the effect of Information technology on the productivity of employees in organization of Uganda.

1.3 Objectives of the Study

1.3.1 General objective of the study

The major objective of the study was to examine the effect of information and communication technology on the productivity of employees, case study of MTN Uganda.

1.3.2 Specific objectives of the study

i. To establish the types of ICT used at MTN Uganda

ii. To examine the effectiveness of ICT on employees productivity at MTN Uganda

iii. To examine the relationship between ICT and employees productivity at MTN Uganda.

1.4 Research Questions

i. What are the types of ICT used at MTN Uganda?

ii. What is the effectiveness of ICT on employee's productivity at MTN Uganda?

iii. What is the relationship between ICT and employee's productivity at MTN Uganda?

1.5 Scope of the study

1.5.1 Content Scope

The study focused on the effect of the effect of information and communication technology on the productivity of employees.

1.5.2 Geographical Scope

The study was carried out at MTN Uganda located at 22 Hannington Road on Nakasero Hill in the Kampala Central Division, one of the administrative units of the city of Kampala, the capital and largest city of Uganda. MTN Uganda was chosen because it is applying various information technologies to improve on its productivity and therefore is provided relevant information regarding the study.

1.5.3 Time Scope

The study covered a period of five (5) years from 2012-2016 in the records of MTN Uganda. It's during this period that most of the organization has impressed the usage of information technologies and therefore this provided enough information regarding the study.

1.6 Significance of the Study

It will be the researcher and other users of the study an insight on how ICT influences the productivity of employees in organization.

The study will enable the company achieve its objectives with the firms in applying some of advanced ICT platforms to improve productivity.

Finally the study will help the researcher who might want to use it for further study as source of reference.

1.8 Definition of Key Terms

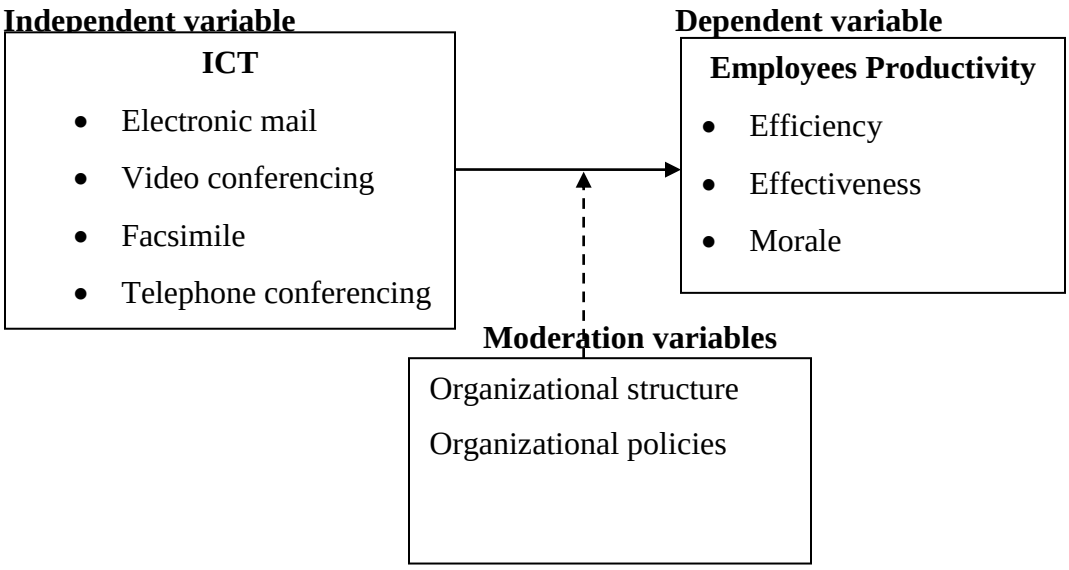
Employee productivity is an assessment of the efficiency of a worker or group of workers

Productivity is defined as the efficient use of resources, labour, capital, land, materials, energy, information, in the production of various goods and services.

Information and communications technology (ICT) is an extended term for information technology (IT) which stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

Information technology (IT) is the use of any computers, storage, networking and other physical devices, infrastructure and processes to create, process, store, secure and exchange all forms of electronic data.

Figure 1: Conceptual framework



Source: Davis (Aubert and Roger, Muriel, 2006))

The figure above explains the effect of the effect of information and communication technology on the productivity of employees. The main aim of any company is to keep employees' productivity high so that it's in position to meet its goals and objectives. As for this study, the independent variable is the ICT platforms applied by MTN Uganda in improving its employee's productivity and these are electronic mail, video conferencing, facsimile and telephone conferencing. The dependent variable is the employee's productivity which is measured in terms of efficiency, effectiveness, and employees morale. The intervening is variables are other factors that influence employee's productivity and these include product packing, level of competition in the market and publicity of the product.

CHAPTER TWO

REVIEW OF LITERATURE

2.0 Introduction

In this chapter, the researcher made a review of literature related to the subject under study. Literature is from different sources such as text books, internet journals, and articles among others. The literature was organized according to the objectives of the study.

2.1 Information Technology (IT)

Information Technology refers to all forms of processing, storage and transmission of information that are used in an electronic format (Bresnahan and Hitt, 2002)). Physical equipment that is used for this purpose includes: Computers, communication networks and tools, fax machines, and electronic software. Generally, IT covers a wide range of equipment, computers, tools, data storage, means of communication and networking, applications and services that are used by organizations to create data and knowledge.

Information technology refers to computer mediated work where a task is accomplished through the medium of the information system rather than through direct physical contact with the task (Beaudry and Ethan, 2010). Two basic opposing views exist with regard to the impact of information technology on individuals. First, some argue that the computerized workplace is inhumane and workers' jobs are robbed of enriching elements (Bloom and John (2012a). These deskilled jobs produce dissatisfaction, alienation, and reduced motivation to perform. On the other hand, some argue that the computer liberates people (Bloom and John (2012b). From this perspective, information technology helps to remove the monotony and make jobs more enriched and satisfying.

Beaudry and Ethan (2010) developed a typology of information technology that reflects these opposing viewpoints. According to Beaudry and Ethan (2010) IT tools fall into two types: Automated or informated. An automating technology seeks to deskill the processes that make up the work. With this type of technology, greater control and continuity over the work process can be achieved through substituting technology for human labor (Beaudry and Ethan, 2010). An informating technology, on the other hand, is designed to upgrade or enrich the work processes. Through removing the most boring, repetitious, dangerous and mindless tasks from the work, human labor is left to perform the creative, challenging, intellectual and satisfying aspects of the work (Draca and John, 2007).

A similar typology has been proposed by Foster and Mark (2010) with regard to advanced manufacturing technology. According to their classification scheme, a "specialist control" system entails giving engineers the responsibility for maintaining and repairing the technology and giving computer specialists the responsibility for writing, editing, and fine tuning the computer programs. Operators, or those that use the technology, are restricted to loading, monitoring, and unloading the machine, and alerting other specialists in the event of a malfunction. "Operator control" on the other hand, consists of delegating additional responsibilities to the operator, including those elements of maintenance and programming that permit fixing operational problems as they occur.

It is important to note that both Beaudry and Ethan (2010) typologies regarding the impact of information technology on people describe the effects primarily in terms of how the technology changes the nature of the work that individuals must perform. The work (or job) design literature provides a vast amount of data that can shed some light on the underlying processes through

which IT impacts workers. Thus, in order to understand how technology impacts employee attitudes, it is necessary to examine how technology impacts work design.

2.1.1 Conference call

A conference call is a telephone call in which someone talks to several people at the same time. The conference calls may be designed to allow the called party to participate during the call, or the call may be set up so that the called party merely listens into the call and cannot speak (Garicano and Paul, 2010). It is sometimes called ATC (audio Tele-conference).

Conference calls can be designed so that the calling party calls the other participants and adds them to the call; however, participants are usually able to call into the conference call themselves by dialing a telephone number that connects to a "conference bridge" (a specialized type of equipment that links telephone lines) (Aubertand Roger,2006). Companies commonly use a specialized service provider who maintains the conference bridge, or who provides the phone numbers and PIN codes that participants dial to access the meeting or conference call.

The more limited three-way calling is available (usually at an extra charge) on home or office phone lines. For a three-way call, the first called party is dialed (Armbruster and Someka, 2005). Then the hook flash button (or recall button) is pressed and the other called party's phone number is dialed. While it is ringing, flash/recall is pressed again to connect the three people together. This option allows callers to add a second outgoing call to an already connected call.

Businesses use conference calls daily to meet with remote parties, both internally and outside of their company. Common applications are client meetings or sales presentations, project meetings and updates, regular team meetings, training classes and communication to employees who work in different locations (Aral and Lynn (2009). Conference calling is viewed as a primary means of

cutting travel costs and allowing workers to be more productive by not having to go out-of-office for meetings.

Conference calls are used by nearly all United States public corporations to report their quarterly results. These calls usually allow for questions from stock analysts and are called earnings calls. A standard conference call begins with a disclaimer stating that anything said in the duration of the call may be a forward-looking statement, and that results may vary significantly (Black, and Lynch, 2001). The CEO, CFO, or investor relations officer then will read the company's quarterly report. Lastly, the call is opened for questions from analysts. Conference calls are increasingly used in conjunction with web conferences, where presentations or documents are shared via the internet. This allows people on the call to view content such as corporate reports, sales figures and company data presented by one of the participants. The main benefit is that the presenter of the document can give clear explanations about details within the document, while others simultaneously view the presentation. Care should be taken not to mix video and audio source on the same network since the video feed can cause interruptions on sound quality.

It is important to pay attention to conference call etiquette when participating; for example, one should refrain from shouting, multitasking in certain cases, and using an unpleasant tone. Care should also be taken to schedule a call at a convenient time (Bloom and John (2012).

In recent years, there has been a number of different types of flexible working options as a result of conference calling technology enabling employees to work remotely.

Flat-rate conferencing: Flat-rate conferencing services are being offered which give unlimited access to a conference bridge at a fixed monthly cost. Because telecommunication carriers offer

free long-distance bundled with local service, this alternative is gaining widespread popularity for budget conscious businesses and non-profits (Bresnahan and Hitt, 2002).

Prepaid conference calls: Prepaid conference call services allow businesses and individuals to purchase conferencing services online, and conduct conference calls on a pay-as-you-go basis. Typically, a conference call PIN and its associated calling instructions are displayed immediately online after being purchased and/or sent via email (Bresnahan and Hitt, 2002). Generally, prepaid conference call services are used with a landline telephone, mobile phone, or computer, and there is no need to buy additional expensive telecommunications hardware or add/switch long distance service. Some services allow one to start or join a conference call from virtually any country worldwide with appropriate telephone access.

Free conference calling: Free conferencing is different from traditional conference calling in that it has no organizer fees and allows for multiple people to meet for the price of their long distance connections (Bresnahan and Hitt, 2002). Companies that provide free conference call services are usually compensated through a revenue sharing arrangement with the local phone company, sharing the terminating access charge for all incoming calls to a phone carrier.

Some background on the terminating access charge: On every long distance call in the United States including toll conference calls, the consumer is paying for origination (dial tone), transport, and termination (connecting the call). Each of these phone companies share a piece of the cost of the call. If it is the same phone company performing all three tasks, they keep all of the charge (Bresnahan and Hitt, 2002). This is known as inter-carrier compensation (ICC) and is intended to keep the telecommunications system functioning by having every phone company receive compensation for using their network.

Premium conferencing: Here participants dial in on a premium-rate number such as a toll free number in the Uganda. The conference is typically hosted by the party that perceives value in the call in order to justify the cost: this could be a business owner, a non-profit board member, an educator, lawyer, or expert in any given field. That person then usually pays for the cost of the call. Premium conferencing can also be used for charitable fundraisers (Bresnahan and Hitt, 2002).

2.1.2 Videoconferencing

Videoconferencing (VC) is the conduct of a videoconference by a set of telecommunication technologies which allow two or more locations to communicate by simultaneous two-way video and audio transmissions (Brynjolfsson and Hitt, 2000). It has also been called 'visual collaboration' and is a type of groupware. Videoconferencing differs from videophone calls in that it's designed to serve a conference or multiple locations rather than individuals. It is an intermediate form of video telephony, first used commercially in Germany during the late-1930s and later in the United States during the early 1970s as part of AT and T's development of Picture phone technology.

With the introduction of relatively low cost, high capacity broadband telecommunication services in the late 1990s, coupled with powerful computing processors and video compression techniques, videoconferencing has made significant inroads in business, education, medicine and media Dessein and Santos, 2006).The core technology used in a videoconferencing system is digital compression of audio and video streams in real time. The hardware or software that performs compression is called a codec (coder/decoder). The resulting digital stream of 1s and 0s is subdivided into labeled packets, which are then transmitted through a digital network of some

kind (usually ISDN or IP). The use of audio modems in the transmission line allow for the use of POTS, or the Plain Old Telephone System, in some low-speed applications, such as video telephony, because they convert the digital pulses to/from analog waves in the audio spectrum range. There are basically two kinds of videoconferencing systems.

Dedicated systems have all required components packaged into a single piece of equipment, usually a console with a high quality remote controlled video camera. These cameras can be controlled at a distance to pan left and right, tilt up and down, and zoom. They became known as PTZ cameras (Stephenson, Betsy (2006)). The console contains all electrical interfaces, the control computer, and the software or hardware-based codec. Omni directional microphones are connected to the console, as well as a TV monitor with loudspeakers and/or a video projector.

Desktop systems are add-ons (hardware boards or software codec) to normal PCs and laptops, transforming them into videoconferencing devices (Garicano and Paul, 2010). A range of different cameras and microphones can be used with the codec, which contains the necessary codec and transmission interfaces. Most of the desktops systems work with the H.323 standard. Videoconferences carried out via dispersed PCs are also known as e-meetings. These can also be nonstandard, Microsoft Lync, Skype for Business, Google Hangouts, or Yahoo Messenger or standards based, Cisco Jabber.

WebRTC Platforms are video conferencing solutions that are not resident by using a software application but are available through the standard web browser. Solutions such as Adobe Connect and Cisco WebEX can be accessed by going to a URL sent by the meeting organizer and various degrees of security can be attached to the virtual "room" (Garicano and Paul, 2010). Often the user will be required to download a piece of software, called an "Add In" to enable the

browser to access the local camera, microphone and establish a connection to the meeting. WebRTC technology doesn't require any software or Add On installation, instead a WebRTC compliant internet browser itself acts as a client to facilitate 1-to-1 and 1-to-many videoconferencing calls. Several enhanced flavours of WebRTC technology are being provided by Third Party vendors.

2.1.3 Electronic mail

Electronic mail, or email, is a method of exchanging digital messages between people using digital devices such as computers, tablets and mobile phones. Email first entered substantial use in the 1960s and by the mid-1970s had taken the form now recognized as email. Email operates across computer networks, which in the 2010s is primarily the Internet. Some early email systems required the author and the recipient to both be online at the same time, in common with instant messaging. Today's email systems are based on a store-and-forward model. Email servers accept, forward, deliver, and store messages(Garicano and Paul, 2010). Neither the users nor their computers are required to be online simultaneously; they need to connect only briefly, typically to a mail server or a webmail interface, for as long as it takes to send or receive messages.

Originally an ASCII text-only communications medium, Internet email was extended by Multipurpose Internet Mail Extensions (MIME) to carry text in other character sets and multimedia content attachments. International email, with internationalized email addresses using UTF-8, has been standardized, but as of 2016 it has not been widely adopted (Hooff, 2005).

The history of modern Internet email services reaches back to the early ARPANET, with standards for encoding email messages published as early as 1973 (RFC 561). An email message sent in the early 1970s looks very similar to a basic email sent today. Email played an important part in creating the Internet, and the conversion from ARPANET to the Internet in the early 1980s produced the core of the current services (Foster and Mark, 2010).

While in the earliest years of email, users could only access email on desktop computers, in the 2010s, it is possible for users to check their email when they are away from home, whether they are across town or across the world. Alerts can also be sent to the smart phone or other device to notify them immediately of new messages. This has given email the ability to be used for more frequent communication between users and allowed them to check their email and write messages throughout the day (Dessein, Wouter, 2002). Today, there are an estimated 1.4 billion email users worldwide and 50 billion non-spam emails that are sent daily.

Individuals often check email on smart phones for both personal and work-related messages. It was found that US adults check their email more than they browse the web or check their Facebook accounts, making email the most popular activity for users to do on their smart phones (Dessein, Wouter, 2002). 78% of the respondents in the study revealed that they check their email on their phone. It was also found that 30% of consumers use only their smart phone to check their email, and 91% were likely to check their email at least once per day on their smart phone. However, the percentage of consumers using email on smart phone ranges and differs dramatically across different countries. For example, in comparison to 75% of those consumers in the US who used it, only 17% in India did

Attachment size limitation: Email messages may have one or more attachments, which are additional files that are appended to the email. Typical attachments include Microsoft Word documents, pdf documents and scanned images of paper documents. In principle there is no technical restriction on the size or number of attachments, but in practice email clients, servers and Internet service providers implement various limitations on the size of files, or complete email - typically to 25MB or less (Dessein, Wouter, 2002).. Furthermore, due to technical reasons, attachment sizes as seen by these transport systems can differ to what the user sees, which can be confusing to senders when trying to assess whether they can safely send a file by email. Where larger files need to be shared, file hosting services of various sorts are available; and generally suggested. Some large files, such as digital photos, color presentations and video or music files are too large for some email systems.

Information overload: The ubiquity of email for knowledge workers and "white collar" employees has led to concerns that recipients face an "information overload" in dealing with increasing volumes of email (Black, and Lynch, 2001)). This can lead to increased stress, decreased satisfaction with work, and some observers even argue it could have a significant negative economic effect, as efforts to read the many emails could reduce productivity.

Email spoofing: Email spoofing occurs when the email message header is designed to make the message appear to come from a known or trusted source. Email spam and phishing methods typically use spoofing to mislead the recipient about the true message origin (Beaudry and Ethan, 2010). Email spoofing may be done as a prank, or as part of a criminal effort to defraud an individual or organization. An example of a potentially fraudulent email spoofing is if an individual creates an email which appears to be an invoice from a major company, and then

sends it to one or more recipients. In some cases, these fraudulent emails incorporate the logo of the purported organization and even the email address may appear legitimate.

Privacy concerns: Today it can be important to distinguish between Internet and internal email systems. Internet email may travel and be stored on networks and computers without the sender's or the recipient's control (Draca and John, 2007). During the transit time it is possible that third parties read or even modify the content. Internal mail systems, in which the information never leaves the organizational network, may be more secure, although information technology personnel and others whose function may involve monitoring or managing may be accessing the email of other employees.

2.2 Productivity

According to Draca and John (2007), Productivity literally means the production power, fertility, and generation. In Persian literature, it refers to usefulness and profitability. In addition, different practical definitions have been proposed for productivity, some of which are as follows:

The Japan's Productivity Center has defined productivity as "to maximize the use of physical resources, human resources, and other factors in a way that results in lower production costs, expansion of markets, increased employment and, and the rise of living standards for all groups of the society (Draca and John, 2007). The European Productivity Agency has defined productivity as the level and intensity of use of each of the factors of production and maintains that "Productivity is thinking and approach based on which that each person can do every day jobs and tasks more efficiently". Belief in the improvement of productivity means having faith in human progress.

In addition, the main point in these definitions is what is used in the process of production and what results from it. However, the main focus of productivity is on human resources as all attempts are made with the purpose of improving human resources productivity. In other words, the driving force of each type of productivity is human resources. However, these resources have gone through changes over time as shown by the evolution of the idea of productivity in economics Garicano, (2000). One of the most important elements needed for organizational change and survival and the achievement of the desired missions and objectives is human being. In addition, human resources are what gives life to change and guarantees the survival of the organizations. Accordingly, factors such as motivation, creativity, innovation, competitiveness, activity cost reduction, the improvement of the quality of activities, work time reduction, job satisfaction, and human resources spirit significantly affect human resources productivity.

2.4 Effect of information technologies on employee productivity

Information and communication technology is one of new technologies that has affected the organizational and industrial environment around us. Until a few decades ago, it was hard to imagine that such technology could affect the business environment around us in such extensive way. However, this technology has overwhelmed all aspects of our life and its impacts are increasing day after day even in a society like Iran that has a far way ahead in order to reach the required standards to benefit from information technologies (Garicano, Luis 2000).

In a classical sense, technology is the knowledge embodied in the means and methods of production. The effects of technology on the growth have long been the subject of much controversy and these effects can be divided into three categories Stephenson, (2006).

In the first place, the impact of technology has embodied in the form of capital goods, resulting in the improved capital productivity. Secondly, technology improves labor productivity and finally, the overall productivity does not necessarily enhance labor or capital productivity (Garicano and Paul, 2010).

An overview of the studies conducted on the impact of IT on the organizational productivity shows how these studies have progressed over time. Three approaches have been taken in this regard. In the first approach, the researchers have directly assessed IT productivity using traditional productivity assessment practices (Garicano and Paul, 2010). The studies performed using this approach show a positive relationship between IT and productivity.

In the second approach, to find the possible causes of the productivity paradox and to determine the relationship between IT and productivity, the researchers have the impact of IT on intermediate measures such as diversity, quality, time, and timely delivery and they have concluded that IT have been effective in improving some intermediate measures. However, there was no positive correlation between IT and other intermediate measures (Garicano and Paul, 2010).

In the third approach, the aim is to find what other complementary investments are made along with investments in IT by organizations to achieve higher productivity in the field of IT (Dessein and Santos, 2006). Lots of studies have been performed concerning the impact of information technology on labor productivity. The effects of using automation systems on human resource productivity" The results suggested that there is a strong direct relationship between efficiency and effectiveness.

The results indicated that the employment of IT systems has increased the effectiveness of the organization (Colombo and Delmastro, 2004). In addition, IT system users who employ such tools to provide services to clients believed that the pace of doing things, timely data recovery, and the speed of accessing to information have improved dramatically comparing the period prior the deployment of IT systems to the extent that this improvement has enhanced the organization's effectiveness because of providing quality services to clients.

Sahragard (2005) examined the effect of IT on the organizational productivity from the perspective of managers in the Kosar Financial Corporate. Of the components of productivity, pace of work, work procedures, and organization costs were selected to examine the impact of IT on these variables. The results indicated that according to managers in the organization under study, the use of IT is effective in the increased pace of work, improving work practices, reducing organization costs, and increasing the overall productivity of the organization. Dessein and Santos (2006) examined the relationship between IT and productivity in the South Pars Gas Complex Company and concluded that the application of IT will increase the productivity.

In today's fast and complex world, each new twist and change is accompanied by new and sometimes complicated problems that cannot be resolved without the adoption and the application of new approaches and technologies Colombo and Delmastro,(2004). One of the new technologies that is gaining growing popularity and has assumed a strategic and practical position in communities, especially in organizations and firms is information and communication technology (ICT). In recent years, ICT has served as a major empowering factor for organizations. In addition, the development rate in organizations concerning the use of ICT can be seen as one of the main indicators of development.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presented a description of research design, sampling design that was used to present data. It was collected in terms of data source and data collection methods and analyzed. It also suggested how data was processed and analyzed. It discussed the limitations that were encountered.

3.1 Research design

The study applied a cross sectional research designs. This type of design enabled the researcher to investigate the effect of quality assurance and customer satisfaction. Both quantitative and qualitative study approaches were applied. The quantitative approach involved the researcher collecting data from the respondents while qualitative approach included collecting data from key informants who are knowledgeable about the research topic. Qualitative method was used because it provides detailed in depth information which is supported with quotations from the respondents.

3.2 Area of the Study

The study was carried out at MTN Uganda located at 22 Hannington Road on Nakasero Hill in the Kampala Central Division, one of the administrative units of the city of Kampala, the capital and largest city of Uganda.MTN Uganda is chosen because it is applying various information technologies to improve on its productivity and therefore provided relevant information regarding the study.

3.3 Study population

The population involved employees of MTN Telecommunication Company. The researcher chose a total population of 120 for the study and this was considered a considerate number in providing reliable and articulate information regarding the study

3.4 Sampling Procedures

3.4.1 Sampling technique

The study used stratified to select respondents. Stratified sampling is a type of sampling method in which the total population is divided into smaller groups or strata to complete the sampling process. Under sampling stratified, the stratum is formed based on some common characteristics in the population data. Under systematic, the researcher ensured that all the members of the population have equal chances of being selected as the starting point or the initial subject. The population was divided into various subgroups such as age, gender, nationality, job profile, educational level etc. The researcher used stratified sampling to understand the existing relationship between two groups. To make it proportionate, the researcher used one specific fraction or a percentage to be applied on its subgroups of population.

3.4.2 Sample size

According toAmin (2005), sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. The sample size of the study was determined using Krejcie and Morgan (1970)'s formula to select respondents. According to Krejcie and Morgan tables (2010), out of the total population of 120 respondents, the researcher used a sample size of 92 respondents who participated in the study as shown below. This sample size is appropriate as it enabled triangulation of the findings to what take place at MTN-Uganda

as far as ICT and employee productivity is concerned. Simple random sampling was used in conjunction with purposive method to select key subjects that will participate in the study.

Table 1: Distribution of Respondents

RESPONDENTS	**Population(N)**	**Sample size(S)**	**Sampling technique**
Accounts and Finance	15	11	Purposive sampling
Human Resource	25	19	Purposive sampling
IT	20	15	Purposive sampling
Customer care	26	20	Simple random sampling
Marketing	34	27	Simple random sampling
TOTAL	**120**	**92**	

Source: Krejcie & Morgan (1970) as modified by Lohr, (2010)

3.5 Data Collection Methods and Instruments

The study applied stratified sampling and simple random sampling techniques to select respondents. Stratified sampling is a probability sampling technique wherein the researcher divided the entire population into different subgroups or strata, then randomly selects the final subjects proportionally from the different strata. The researcher selected sample size using stratified random sampling basing on age, gender, socioeconomic status, religion, nationality and educational attainment. The researcher used this technique to highlight a specific subgroup within the population. This technique was useful in such because it ensured the presence of the key subgroup within the sample. Stratified method was used to select the respondents from

different departments of MTN Telecommunication Company; these included; the senior managers of finance, human resources, marketing and IT departments of the company.

3.5 Data source

Due to nature of the study both primary and secondary data sources were used. This was because the study based on both firsthand information and already existing data, this implied that the researcher opt to use primary and secondary data

3.5.1 Primary data

The researcher focused on MTN Uganda to collect primary data. The researcher used self-administrated questionnaires while collecting data from the staff.

3.5.2 Secondary Data

For secondary data the researcher used secondary sources like text books, journals, articles, magazines, presentations concerning the subject matter of the study. These sources were consulted at the length to extract required information to answer the research questions. These sources were extracted required information to answer the research questions. These sources were extracted from internet and public libraries like Makerere University library

3.5.2 Research instrument

Questionnaires

The study used the questionnaire method of data collection because of its numerous advantages and its ability to yield the most satisfactory range of reliable data. The questionnaire comprised of open ended questions that gave the respondent of choice to his/her own opinion towards the question presented before him/her. The questionnaires were designed in such a way to reflect the

objectives of the study. Questionnaires were used in data gathering because they are structured in a straight forward way and the information to be obtained from them can easily be computed. Furthermore the researcher believes that using of questionnaires gave respondents convenient time to fill them without any pressure.

Interview guide

The researcher used the interview guide in collection of data required for the study and this was based on the study objectives. Various questions relating to information technology and employee productivity was posed to key informants as a means of accessing firsthand information. The researcher interviewed both employees of MTN Telecommunication Company. This instrument was used because it is the quickest method of collecting data and questions can be repeated clearly for the respondent to understand them and also data collected using this tool is more reliable and accurate. Therefore it enabled the researcher to scrutinize the answers that will be given in the questionnaire and which enable the researcher to obtain further information about information technology and employee productivity.

3.6 Data Quality Control

Data collected from the respondents were edited and coded. Data was edited in order to ensure completeness and accuracy of the data to be collected. In the process of editing the data that was collected, errors and omissions may easily be identified and eliminated. Edited data will be further coded in order to statistically obtain meaning from the data that may be collected "Coding involved the researcher assigning numerical questions to be answered so that responses that may be obtained could easily be summarized and interpreted.

3.7 Data Analysis

The SPSS 20 was used for analysis. According to the problem/requirement, statistical techniques such as linear regression model, t-test, One Way ANOVA and ratio analysis was as well applied. The proceeding discussion presents the analyses/results of the hypothesis of the study with conclusion at the end.

The data collected was edited for completeness, accuracy, consistency and relevancy to aid in interpretation and analysis and then the findings were presented in tables and charts from which frequencies were determined. The researcher's judgments were based on what the majority of the respondents indicated or depending on how the researcher perceived the situation on the ground. The findings of the study were presented in such a way to reveal the relationship between information technology and employee productivity at MTN Uganda Telecommunication Company.

3.8 Ethical Consideration

The researcher complied with ethical procedures to protect the rights of the research participants, involving the principle of voluntary participation which requires that participants do not need to be coerced into participating in this research. The following ethical measures were adhered to (Amin, 2005).

Right of the participant: In this study, no attempt were made to harm participants deliberately and those who could experience any form of harm be it through victimization, emotional or otherwise, was informed in advance of their right to withdraw from participating in the study.

Confidentiality and anonymity: Confidentiality means that information from participants is not going to be divulged to the public nor made available to colleagues, subordinates or superiors. In this study, all information about participants was treated with confidentiality and the participants were anonymous. A covering letter also was assuring respondent that all responses were treated with utmost confidentiality and anonymity.

3.9 Anticipated Limitations to the study

The researcher denied some information especially in staff members fearing that the researcher can reveal such information like how tenders are awarded as well as purchase of some equipment. However the researcher assured the respondents some confidentiality.

The researcher faced financial difficulties in carrying out the research this was in terms of transport to the area of the study, typesetting, printing and photocopying however the researcher tried to solicit financial assistance from brother's sisters and friends.

The researcher faced the problem of acquiring literature relevant to the study area this was a result of scare published relevant information in the university library

The researcher faced the problem of non-response from respondents due to bias, this was solved by humble and soft approach towards the respondents.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents the data and analysis of the findings, which is presented in tables and statements in accordance with the objectives of the study.

4.2 Background Information

The study considered the background information of the participating respondents because the ability of the respondents to give satisfactory information on the study variable greatly depends on their background. The information solicited has been categorized into; gender, Age, Length of service in your organization and for how long has your company been in existence

4.2.1 The Gender Background of Respondents

Table 2: The Gender Background of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	54	58.7	58.7	58.7
	Female	38	41.3	41.3	100.0
	Total	92	100.0	100.0	

Source: Primary data, 2017

According to the table above, the male respondents were the majority 54 with percentage of 58.7% and the female were 38 with 41.3%. The male respondents were the majority because they are the majority employees compared to female in the MTN company

4.2.2 The Age Bracket of the Respondents

Table 3: The Age Bracket of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20 years	9	9.8	9.8	9.8
	21 – 30 years	36	39.1	39.1	48.9
	31 – 40 years	31	33.7	33.7	82.6
	41- 50 years	10	10.9	10.9	93.5
	Over 50 years	6	6.5	6.5	100.0
	Total	92	100.0	100.0	

Source: Primary data, 2017

According to the table above the age bracket of 21-30 years had the majority of the respondents 36 with 39.1%, the second with the mode frequency of 31 was 31-40 years with 33.7%, and the third in the line was 41-50 years with 10 respondents with 10.9%, next was the age bracket of

under 20 years, this had 9 respondents with 9.8% frequencies and that with the list number of the respondents was over 50 years, this had 6 respondents with 6.5%. The trend of this age bracket is due to the recurrent nature in the employment sector whereby most of the employed age is the educated youth. That is why 21-30 and 31-40 years are having the highest frequencies of respondents.

4.2.3 The Length (Time) of Service of the Respondents with the Company

Table 4: The Length (Time) of Service of the Respondents with the Company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than two years	12	13.0	13.0	13.0
	2-5 years	40	43.5	43.5	56.5
	6- 10 years	30	32.6	32.6	89.1
	Over 10 years	10	10.9	10.9	100.0
	Total	92	100.0	100.0	

Source: primary data, 2017

The table above shows the length of service of the respondents with the company; 2-5 years of service had the majority of the respondents, 40 with 43.5 % followed with 6-10 years of service respondents, 30 with 32.6%, next, those respondents who had spent less than two years, who had 12 respondents with 13.0% and the last were respondents who had spent over 10 years of service in the MTN company who had 10 respondents with 10.9%. The mode class of 2-5 years in MTN is due to the nature of employment, most of the employees of MTN work short contracts of 1-5

4.2.4 For how long has your company been in existence

Table 5: For how long has your company been in existence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 5 years	10	10.9	10.9	10.9
	6-10 years	41	44.6	44.6	55.4
	11-15 years	32	34.8	34.8	90.2
	Over 16 years	9	9.8	9.8	100.0
	Total	92	100.0	100.0	

Source: Primary data, 2017

The table above shows the longevity of the company, the class with majority frequency was that with 6-10 years, this has 41 frequencies with 44.6% seconded with 11-15 years class which had 32 frequencies with 34.8%, next was under 5 years which had 10 respondents with 10.9 and last was that class of over 16 years which had a class of 9 respondents with 9.8%.

4.3 The types of ICT used at MTN Uganda

Table 6: Showing the types of ICT used at MTN Uganda

THE TYPES OF ICT USED AT MTN UGANDA	Key	Freq	%	Mean	SD
The company uses modern technology to improve its employees' performance	SD	9	9.8	3.67	1.302
	D	12	13.0		
	NS	7	7.6		
	A	36	39.1		
	SA	28	30.4		
MTN makes video-conferencing which allow two or more locations to communicate by simultaneous two-way video and audio transmissions	SD	4	4.3	3.88	1.108
	D	11	12.0		
	NS	5	5.4		
	A	44	47.8		
	SA	28	30.4		
The company makes conference call talks to several people at the same time	SD	4	4.3	4.01	1.011
	D	6	6.5		
	NS	4	4.3		
	A	49	53.3		
	SA	29	31.5		
The company exchanges digital messages between people using digital devices such as computers, tablets and mobile phones.	SD	5	5.4	3.92	1.071
	D	7	7.6		
	NS	5	5.4		
	A	48	52.2		
	SA	27	29.3		
Aggregate Mean and Standard Deviation				**3.87**	**1.123**

Source: Primary data, 2017

The table above reveals the respondents' responses on the types of ICT used at MTN Uganda. It reveals the key of their preferences, frequencies, percentage, and weighted mean, standard deviation and finally their aggregate mean and their standard deviation. The respondents who revealed on The Company use modern technology to improve its employees' performance had a weighted mean of 3.67 with Standard deviation of 1.302 indicating that the majority of the respondents agreed with this type of ICT at MTN Uganda.

The respondents who revealed on MTN makes video-conferencing which allow two or more locations to communicate by simultaneous two-way video and audio transmissions had 3.88 mean and standard deviation of 1.108 indicating that the majority of the respondents agreed with this type of ICT at MTN Uganda.

The respondents who revealed on The Company make conference call talks to several people at the same time had mean of 4.01 with standard deviation of 1.011 revealing that the majority of the respondents agreed with this type of ICT at MTN Uganda that affects the employee productivity.

The respondents who revealed on The Company exchanges digital messages between people using digital devices such as computers, tablets and mobile phones had a mean of 3.92 with standard deviation 1.071 indicating that the majority of the respondents agreed with this type of ICT at MTN Uganda that affects the employee productivity.

The overall response on the types of ICT at MTN Uganda had a mean of 3.87 and standard deviation of 1.123, revealing that the respondents agreed that the given types of ICT at MTN influence employee productivity.

4.4 The effectiveness of ICC on employee's productivity at MTN Uganda

Table 7: Showing the effectiveness of ICC on employee's productivity at MTN Uganda

The Effectiveness Of ICT On Employee's Productivity At MTN Uganda	key	Freq	%	mean	SD
Employees have been able to perform their work effectively with the help of ICT by the company	SD	7	7.6	3.79	1.263
	D	12	13.0		
	NS	6	6.5		
	A	35	38.0		
	SA	32	34.8		
As employees catch up with modern technologies introduced by the company, their productivity has improved	SD	6	6.5	3.87	1.169
	D	10	10.9		
	NS	3	3.3		
	A	44	47.8		
	SA	29	31.5		
With automating technology, greater control and continuity over the work process has been achieved	SD	9	9.8	3.88	1.239
	D	6	6.5		
	NS	4	4.3		
	A	41	44.6		
	SA	32	34.8		
The company has been able to improve its performance as employees become productive by using modern technologies	SD	6	6.5	3.87	1.169
	D	10	10.9		
	NS	3	3.3		
	A	44	47.8		
	SA	29	31.5		
Aggregate mean and standard deviation				3.8575	1.21

Source: Field data, 2017

The Table above shows Responses on the Effectiveness of ICT on Employee's Productivity at MTN Uganda. The table reveals responses on Employees have been able to perform their work effectively with the help of ICT by the company with a mean of 3.79 with standard deviation of

1.263 indicating that the respondents agreed that ICT has affected the performance of employees at MTN Uganda.

The respondents who revealed on as employees catch up with modern technologies introduced by the company, their productivity has improved had mean of 3.87 with standard deviation of 1.169 indicating that the respondents agreed with this effect.

The respondents who revealed that with automating technology, greater control and continuity over the work process has been achieved had mean of 3.88 with standard deviation of 1.239 indicating that the respondents agreed with this effect.

The respondents who revealed that The Company has been able to improve its performance as employees become productive by using modern technologies had mean of 3.87 and standard deviation of 1.169 showing that the respondents agreed with the effect.

The overall responses on the effectiveness of ICT on employees' performance had an aggregate mean of 3.88575 with standard deviation of 1.169 indicating that the respondents generally agreed with these effects.

Table 8: Showing the relationship between effectiveness of ICT on employee's productivity at MTN Uganda

Pearson Correlations coefficient

		employee's productivity	effectiveness of ICT
employee's productivity	Pearson Correlation	1	.450*
	Sig. (2-tailed)		.024
	N	25	25
effectiveness of ICT	Pearson Correlation	.450*	1
	Sig. (2-tailed)	.024	
	N	25	25

*. **Correlation is significant at the 0.05 level (2-tailed).**

Source: Field data, 2017

Effectiveness of ICT was found to be having a significant positive (0.450) effect on employee's productivity at 5% level of significance (2-talied test); Thus the higher the effectiveness of ICT the higher the level of employee's productivity.

4.5 The Relationship between ICT and Employees Productivity at MTN Uganda

Table 9: Showing the Relationship between ICT and Employees Productivity at MTN Uganda

The Relationship Between ICT and Employees Productivity at MTN Uganda	key	freq	%	mean	SD
Employees of MTN (U) has improved on their effectiveness as they use modern information and communication technology	SD	9	9.8	3.90	1.223
	D	5	5.4		
	NS	4	4.3		
	A	42	45.7		
	SA	32	34.8		
Customer care towards the company's customers has improved as employees use information and communication technology	SD	5	5.4	3.88	1.088
	D	8	8.7		
	NS	6	6.5		
	A	47	51.1		
	SA	26	28.3		
There is low rate of errors by employees after the introduction of information and communication technology at MTN (U)	SD	4	4.3	3.97	.9037
	D	5	5.4		
	NS	4	4.3		
	A	56	60.9		
	SA	23	25.0		
Employees' morale have improved as they use modern information and communication technology	SD	4	4.3	4.04	1.037
	D	6	6.5		
	NS	5	5.4		
	A	44	47.8		
	SA	33	35.9		
There is minimal redundancy of employees as every employee is busy on his/her own computer	SD	4	4.3	3.71	1.197
	D	16	17.4		
	NS	5	5.4		
	A	37	40.2		
	SA	24	26.1		
Aggregate mean and standard deviation				3.9	1.08974

Source: Primary data, 2017

The Table above shows Responses on The Relationship between ICT and Employees Productivity at MTN Uganda. The responses revealed on Employees of MTN (U) has improved on their effectiveness as they use modern information and communication technology had 3.90 with standard deviation of 1.223 indicating that the respondents agreed with the this relationship.

The respondents who responded on Customer care towards the company's customers has improved as employees use information and communication technology had 3.88 mean and 1.088 standard deviation placing the relationship into the key of agreed.

The responses on There is low rate of errors by employees after the introduction of information and communication technology at MTN (U) had a mean of 3.97 with standard deviation of 0.9037 also directed the relationship to agreed.

The respondents who responded on Employees' morale have improved as they use modern information and communication technology had a mean of 4.04 with standard deviation of 1.037 showing that the respondents agreed with this relationship.

The respondents who responded on there is minimal redundancy of employees as every employee is busy on his/her own computer had mean of 3.71 with standard deviation of 1. 197 indicating that the respondents agreed with the relationship.

The overall response on the relationship between ICT and employee productivity at MTN Uganda had an aggregate mean of 3.9 with standard deviation of 1.08974 indicating that the respondents agreed with these relationship.

Table 10: Showing the relationship between ICT and employees Productivity at MTN Uganda

Pearson correlation coefficient

		Employees Productivity	ICT
Employees Productivity	Pearson Correlation	1	.699**
	Sig. (2-tailed)		.000
	N	25	25
ICT	Pearson Correlation	.699**	1
	Sig. (2-tailed)	.000	
	N	25	25

****. Correlation is significant at the 0.01 level (2-tailed).**

Source: Field data, 2017

ICT was found to be having highly significant positive (0.699**) effect on employees' productivity at 1% level of significance (2-talied test non directional). Thus, improved ICT leads to higher the level of Employees Productivity.

Table 11: Regression analysis of the two dimensions (effectiveness of ICT on employee's productivity at MTN Uganda, ICT and employees Productivity at MTN Uganda);

Model	R	R Square	Adjusted R Square				
	.[a]	.331.	.				
						t	Sig.
			B	Std. Error	Beta		
	(Constant)		1.760	.244		7.213	.000
	Effectiveness of ICT		.112	.059	.146	1.906	.059
	ICT process		.331	.066	.470	5.057	.000
a. Dependent Variable: employee productivity at. MTN Uganda							

Results from the table above show a combination of effectiveness of ICT, ICT process. These variables can explain 74.5% of the variance in employee productivity at MTN Uganda (R Square

=.331). Most influential predictor of employee productivity at MTN at Uganda was ITC process (Beta = .470) with a relative importance of 5.057 (in t-test). And effectiveness of ICT (Beta=.146) is a minor predictor of employee productivity at MTN Uganda with a relative importance of 1.900 (in t-test). The implication in this model is that ICT process is a big predictor of employee productivity at MTN Uganda meaning that in a situation where ICT process is improved at MTN Uganda there is more likelihood of improvement in employee productivity. These findings are in agreement with Beaudry and Ethan (2010) who states that typologies regarding the impact of information technology on people describe the effects primarily in terms of how the technology changes the nature of the work that individuals must perform these studies have shown a significant positive relationship between ICT and employee productivity at MTN Uganda, Beaudry and Ethan, (2010).

In summary, the high positive correlation coefficients between the dimensions of the study and the value of $R^2 = .331$ indicate that ICT is strongly correlated with employee productivity.

In addition to the above, it is argued that ICT result in increased employee productivity at MTN Uganda with greater access to information, improved on employee effectiveness, Employees' morale have improved and minimal redundancy of employees.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the findings in the study, the conclusions reached as well as the recommendations made by the researcher. First is the presentation of the summary of findings;

5.1 Summary of findings

5.1.1 Summary of the respondents on their bio-data

The summary of the study was centered on the effect of ICT in employee productivity case study Of MTN telecommunication company – Uganda. The findings gave a summary of the bio-data of the respondents where the male respondents were the majority 54 with percentage of 58.7% and the female were 38 with 41.3%, the age bracket of 21-30 years had the majority of the respondents 36 with 39.1%, the second with the mode frequency of 31 was 31-40 years with 33.7%, and the third in the line was 41-50 years with 10 respondents with 10.9%, next was the age bracket of under 20 years, this had 9 respondents with 9.8% frequencies and that with the list number of the respondents was over 50 years, this had 6 respondents with 6.5%, the length of service of the respondents with the company; 2-5 years of service had the majority of the respondents, 40 with 43.5 % followed with 6-10 years of service respondents, 30 with 32.6%, next, those respondents who had spent less than two years, who had 12 respondents with 13.0% and the last were respondents who had spent over 10 years of service in the MTN company who had 10 respondents with 10.9%. The mode class of 2-5 years in MTN is due to the nature of employment, most of the employees of MTN work short contracts of 1-5 years, the longevity of the company, the class with majority frequency was that with 6-10 years, this has 41 frequencies with 44.6% seconded with 11-15 years class which had 32 frequencies with 34.8%, next was

under 5 years which had 10 respondents with 10.9 and last was that class of over 16 years which had a class of 9 respondents with 9.8%.

5.1.2 Summary of the Respondents on the Types of ICT used at MTN Uganda

The research summarized the respondents' responses on the types of ICT used at MTN Uganda. It summarized the key of their preferences, frequencies, percentage, and weighted mean, standard deviation and finally their aggregate mean and their standard deviation. The respondents' summary on The Company use modern technology to improve its employees' performance, MTN makes video-conferencing which allow two or more locations to communicate by simultaneous two-way video and audio transmissions, the Company make conference call talks to several people at the same time, The Company exchanges digital messages between people using digital devices such as computers, tablets and mobile phones gave an overall summary with an aggregate mean of 3.87 and standard deviation of 1.123, summarizing that the respondents agreed that the given types of ICT at MTN influence employee productivity.

5.1.3 Summary of the Respondents on the effectiveness of ICC on employee's productivity at MTN Uganda

The research gave a summary on the Effectiveness of ICT on Employee's Productivity at MTN Uganda. The research summarized responses on Employees have been able to perform their work effectively, employees catch up with modern technologies introduced by the company, their productivity has improved, With automating technology, greater control and continuity over the work process has been achieved, The Company has been able to improve its performance as employees become productive by using modern technologies, the effectiveness of ICT on employees' performance had an aggregate mean of 3.88575 with standard deviation of 1.169 indicating that the respondents generally agreed with these effects.

5.1.4 The summary of the Relationship between ICT and Employees Productivity at MTN Uganda

The research gave a summary of the Responses on The Relationship between ICT and Employees Productivity at MTN Uganda. The summary on Employees of MTN (U) has improved on their effectiveness as they use modern information and communication technology, Customer care towards the company's customers has improved as employees use information and communication technology, There is low rate of errors by employees after the introduction of information and communication technology at MTN (U), Employees' morale have improved as they use modern information and communication technology, there is minimal redundancy of employees as every employee is busy on his/her own computer and gave the overall summary on the relationship between ICT and employee productivity at MTN Uganda had an aggregate mean of 3.9 with standard deviation of 1.08974 indicating that the respondents agreed with these relationship.

5.2 Conclusions of the findings

5.2.1 Conclusions of the Respondents on their bio-data

The Conclusion of the study was centered on The Effect of ICT in Employee Productivity Case Study Of MTN Telecommunication Company – Uganda. The research gave a conclusion of the bio-data of the respondents where the male respondents were the majority 54 with percentage of 58.7% and the female were 38 with 41.3%, the age bracket of 21-30 years had the majority of the respondents 36 with 39.1%, the second with the mode frequency of 31 was 31-40 years with 33.7%, and the third in the line was 41-50 years with 10 respondents with 10.9%, next was the age bracket of under 20 years, this had 9 respondents with 9.8% frequencies and that with the list number of the respondents was over 50 years, this had 6 respondents with 6.5%, the length of service of the respondents with the company; 2-5 years of service had the majority of the

respondents, 40 with 43.5 % followed with 6-10 years of service respondents, 30 with 32.6%, next, those respondents who had spent less than two years, who had 12 respondents with 13.0% and the last were respondents who had spent over 10 years of service in the MTN company who had 10 respondents with 10.9%. The mode class of 2-5 years in MTN is due to the nature of employment, most of the employees of MTN work short contracts of 1-5 years, the longevity of the company, the class with majority frequency was that with 6-10 years, this has 41 frequencies with 44.6% seconded with 11-15 years class which had 32 frequencies with 34.8%, next was under 5 years which had 10 respondents with 10.9 and last was that class of over 16 years which had a class of 9 respondents with 9.8%.

5.1.2 Conclusions of the Respondents on the Types of ICT used at MTN Uganda

The research concluded the respondents' responses on the types of ICT used at MTN Uganda. It gave a conclusion depending on the respondents' their preferences, frequencies, percentage, and weighted mean, standard deviation and finally their aggregate mean and their standard deviation. The research gave a conclusion on The Company use modern technology to improve its employees' performance, MTN makes video-conferencing which allow two or more locations to communicate by simultaneous two-way video and audio transmissions, the Company make conference call talks to several people at the same time, The Company exchanges digital messages between people using digital devices such as computers, tablets and mobile phones gave an overall conclusion of the aggregate mean of 3.87 and standard deviation of 1.123, concluding that the respondents agreed that the given types of ICT at MTN influence employee productivity.

5.2.3 Conclusion of the Respondents on the effectiveness of ICC on employee's productivity at MTN Uganda

The research gave a conclusion on the Effectiveness of ICT on Employee's Productivity at MTN Uganda. The research concluded responses on Employees have been able to perform their work effectively, employees catch up with modern technologies introduced by the company, their productivity has improved, With automating technology, greater control and continuity over the work process has been achieved, The Company has been able to improve its performance as employees become productive by using modern technologies, the effectiveness of ICT on employees' performance had an aggregate mean of 3.88575 with standard deviation of 1.169 indicating that the respondents generally agreed with these effects.

5.2.4 The Conclusions of the Relationship between ICT and Employees Productivity at MTN Uganda

The research gave a conclusion of the Responses on The Relationship between ICT and Employees Productivity at MTN Uganda. The conclusion on Employees of MTN (U) has improved on their effectiveness as they use modern information and communication technology, Customer care towards the company's customers has improved as employees use information and communication technology, There is low rate of errors by employees after the introduction of information and communication technology at MTN (U), Employees' morale have improved as they use modern information and communication technology, there is minimal redundancy of employees as every employee is busy on his/her own computer and gave the overall summary on the relationship between ICT and employee productivity at MTN Uganda had an aggregate mean of 3.9 with standard deviation of 1.08974 indicating that the respondents agreed with these relationship.

5.3 Recommendations

Basing on the study findings, the researcher went on to give some recommendations.

There is need to emphasize ICT in the organizations as it increases on employees' productivity through effectiveness. ICT systems and processes should be given concrete emphasis.

There is need to involve the employees in the process of decision making so as to have effective ICT policies and strategies for better organizational performance.

There is need for proper human resource management in an organization so as to achieve the organizational goals and objectives.

There is need for Organization MTN Uganda to have well streamlined ICT policies in the organization.

There should be timely meetings between the Organizational managers and employees so as to make them part of the decision making body.

Company managers should ensure timely supervision of their employees through ICT this will increase on performance.

5.4 Areas of further research

Further research should be done on the role of ICT at MTN Company on employ performance so as to establish concrete information about its importance. Achievement of organizational goals depends on the effectiveness of the organization which a result of proper budgeting.

REFERENCES

Amin, M.E. (2005). Social science Research, Conception Methodology and analysis: Makerere University Printery, Kampala.

Aral and Lynn (2009). Testing three-way complementarities: performance pay, monitoring and information technology, ICIS proceedings.

Armbruster and Someka (2005). Technoorganizational innovation in the European manufacturing industry" European Manufacturing Survey Bulletin, 1, 1-16

Aubertand Roger (2006). New Technologies, Workplace Organization and the Structure of the Workforce: *Firm-Level Evidence, Economic Journal*, 116, 73-93.

Autorand Murnane (2003). The Skill Content of Recent Technological Change: *An Empirical Exploration, Quarterly Journal of Economics*, 118(4), 1279-1334

Azmat and Reenen (2008). Privatization, Entry Regulation and the Decline of Labor's Share of GDP: A Cross-Country Analysis of the Network Industries, Centre for Economic Performance Discussion Paper No. 806, forthcoming Economica

Baker and Hubbard (2004). Contractibility and Asset Ownership: On Board Computers and Governance in US Trucking,*Quarterly Journal of Economics*, 119, 1443-79.

Beaudry and Ethan (2010). Should the Personal Computer Be Considereda Technological Revolution? Evidence from U.S. Metropolitan Areas,*Journal of Political Economy*, 118(5), 988-1036.

Black, and Lynch (2001). How to Compete: The Impact of Workplace Practicesand Information Technology on Productivity, Review of Economics and Statistics, 83, 434-445.

Bloom and John (2012b). Measuring and ExplainingOrganization across firms and countries,*Quarterly Journal of Economics*, 127(4): 1663-1705.

Bresnahanand Hitt (2002). Information Technology,Workplace Organization and the Demand for Skilled Labor: Firm-level Evidence, *Quarterly Journal of Economics*, 117, 339-376.

Colomboand Delmastro (2004). Delegation of Authority in business organizations:An empirical test, *Journal of Industrial Economics*, 52, 53-80.

Davenport (2002). The Return of EnterpriseSolutions: The Director's Cut. Accenture Institute for High Performance Business ResearchReport, October 2002.

Dessein and Santos (2006). Adaptive Organizations. *Journal of Political Economy*,(5): 956—995.

Dessein, Wouter (2002). Authority and Communication in Organizations, Review of EconomicStudies, 69, 811-838.

Draca and John (2007). Productivity and ICTs: a Reviewof the Evidence", in Robin Mansell, Chrisanthi Avgerou, Danny Quah and Roger Silverstone(eds.) The Oxford Handbook of Information and Communication Technologies, Oxford UniversityPress.

Forman and Shane Greenstein (2011). The Internet and Local Wages: APuzzle", mimeo, Northwestern University

Foster and Mark (2010). Microeconomics of Technology Adoption" AnnualReview of Economics, 2, 395-424

Garicano and Paul (2010). Information Technology, Organization, and Productivityin the Public Sector: Evidence from Police Departments," *Journal of Labor Economics*,18:1, 167-201.

Garicano, Luis (2000). Hierarchies and the Organization of Knowledge in Production, Journal*of Political Economy*, 108, 874-904.

Shepard, Jim and Eric Klein (2006). Enterprise Resource Planning Spending Report, 2006-2007.AMR Research.

Stephenson, Betsy (2006). The Impact of the Internet on worker flows, Wharton BusinessSchool mimeo

APPENDICES

APPENDIX I: RESEARCH QUESTIONNAIRE FOR EMPLOYEES

Dear respondent,

I am NALUBEGA JACKLINE a student of Uganda Martyrs University carrying out a research on "the effect of information and communication technology on the productivity of employees, case study of MTN Uganda". You have been chosen as a respondent because of the knowledge and information that you will have with regard to this topic. You're kindly been requested to answer the following questions. The information you give is will be used for academic purposes and will be treated with at most confidentiality.

PART A: Demographic and respondent's Profile

1. Gender:

Male [ ] Female [ ]

2. What is your age bracket?

Under 20 years [ ] 21 – 30 years [ ] 31 – 40 years [ ]

41- 50 years [ ] Over 50 years [ ]

3. Length of service with the company?

Less than two years [ ] 2-5 years [ ] 6- 10 years [ ]

Over 10 years [ ]

4. For how long has your company been in existence?

Under 5 years [ ] 6-10 years [ ] 11-15 years [ ]

Over 16 years [ ]

Part B: THE TYPES OF ICT USED AT MTN UGANDA

5: Strongly Disagree (SD); 4: Disagree (D); 3: Not Sure (NS); 2: Agree (A); 1: Strongly Agree (A).

NO.	STATEMENT	1	2	3	4	5
5	The company uses modern technology to improve its employees' performance					
6	MTN makes video-conferencing which allow two or more locations to communicate by simultaneous two-way video and audio transmissions					
7	The company makes conference call talks to several people at the same time					
8	The company exchanges digital messages between people using digital devices such as computers, tablets and mobile phones.					

On your own opinion, are the types of ICT implemented by MTN been effective? (Explain your opinion

……

……

PART C: THE EFFECTIVENESS OF ICT ON EMPLOYEE'S PRODUCTIVITY AT MTN UGANDA

5: Strongly Disagree (SD); 4: Disagree (D); 3: Not Sure (NS); 2: Strongly Agree (SA); 1: Agree (A).

NO.	STATEMENT	1	2	3	4	5
9	Employees have been able to perform their work effectively with the help of ICT by the company					
10	As employees catch up with modern technologies introduced by the company, their productivity has improved					
11	With automating technology, greater control and continuity over the work process has been achieved					
12	The company has been able to improve its performance as employees become productive by using modern technologies					

On your own opinion, how effective is the implementation of ICT on the productivity of employees of MTN Uganda? (Explain your opinion)

……

……

PART C: THE RELATIONSHIP BETWEEN ICT AND EMPLOYEES PRODUCTIVITY AT MTN UGANDA

NO.	STATEMENT	1	2	3	4	5
13	Employees of MTN (U) has improved on their effectiveness as they use modern information and communication technology					
14	Customer care towards the company's customers has improved as employees use information and communication technology					
15	There is low rate of errors by employees after the introduction of information and communication technology at MTN (U)					
16	Employees' morale have improved as they use modern information and communication technology					
17	There is minimal redundancy of employees as every employee is busy on his/her own computer					

On your own opinion, is there any relationship between ICT and employees productivity at MTN Uganda? (Explain your opinion)

……

……

THANK YOU FOR YOUR TIME