

**INFORMATION SYSTEM ADOPTION AND PERFORMANCE,
IN SELECTED PRIVATE TELECOMMUNICATION COMPANIES
IN BOSASO, PUNTLAND,
SOMALIA**

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in Information Technology

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DECLARATION A

"This thesis dissertation is my original work and has not been presented for a degree or any other academic award in any university or institution of learning".

Name

Signature of Candidate

MAYMUNTA ABDULKADIR



2nd Dec 2014

Date

Date

DECLARATION B

"We confirm that the work reported in this thesis dissertation was carried out by the candidate under our supervision".

Dr. Malingi Ramadhan

Name and Signature of Supervisor



2/12/2014

Date

Name and Signature of Supervisor

Date

Dedication

This thesis is dedicated to my mother, AaminaAbdisalamMohamud, my late father Dr. Abdulkadir MohamedAbdalla, brothers and sisters, who has been a source of encouragement and inspiration to me throughout my life, a very special and loving thanks for the myriad of ways in which, throughout my life, you have actively supported me in my determination to find and realize my potential, and to make this research work a contribution to our world. ENDLESS THANKS FOR EVERYTHING.

Acknowledgement

Foremost, I would like to express my sincere gratitude to my supervisor Dr. MalingaRamadhan for the continuous support of my master's study and research, for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better supervisor and mentor for my master's study. Besides my supervisor, I would like to thank my lecturers, teachers, library, computer lab, and support staff of the college of higher degrees and research. Last but not the least; I would like to thank my friends and everyone who has helped me on working on this thesis

ABSTRACT

This study was based on the adoption of information systems and performance of telecommunication companies in Bosaso, Puntland, Somalia. The study was based on the following objectives; to determine the level of Information System adoption in selected private telecommunication companies in Bosaso, Puntland, Somalia, to determine the level of performance in selected private telecommunication companies in Bosaso, Puntland, Somalia and finally to determine whether there is a relationship between the level of information system adoption and performance in selected private telecommunication companies in Bosaso, Puntland, Somalia. The study employed descriptive correlational design; data was collected using researcher devised questionnaires were used to collect data from sample population size 170 using purposive and systematic random sampling. Pearson correlation (r) was used to establish the relationship between adoptions of information system and performance in selected private telecommunication companies in Bosaso, Puntland, Somalia.

The study found that, the use of information system services which the telecommunication companies have adopted in a large extent has improved its performance. Some of the ways in which information systems have improved efficiency in the departments include; increased productivity and efficiency; faster processing of Customers hence greater customer satisfaction; From the study findings the study concludes that information systems and communication technology which includes communication networks, mobile phone technology, and handheld devices such as iPads and Internet applications positively influence the performance of the private telecommunication companies in Somalia to a large extent.

From the findings the study recommends that; the telecommunication companies industry should make use of information systems that have been put in place; various products must be presented to this industry meaning that information systems security must not be compromised at all cost, products to curb fraud and money laundering should be put in place and always safe guard all the processes from interference from the terrorist.

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LIST OF ACRONYMS/ABBREVIATIONS

(IS)	INFORMATION SYSTEMS
(TAM)	THE TECHNOLOGY ACCEPTANCE MODEL
(ICT)	INFORMATION TECHNOLOGY
(PU)	PERCEIVED USEFULNESS
(PEOU)	PERCEIVED EASE-OF-USE
(LMS)	LEARNING MANAGEMENT SYSTEM
(TRA)	THEORY OF REASONED ACTION
(CVI)	CONTENT VALIDITY INDEX
(PLCC)	PEARSON LINEAR CORRELATION COEFFICIENT
(EDI)	ELECTRONIC DATA INTERCHANGE
(ERP)	ENTERPRISE RESOURCE PLANNING
(SCM)	SUPPLY CHAIN MANAGEMENT

CHAPTER ONE

1.0 INTRODUCTION

The chapter contains the background of the study, statement of the problem, purpose of the study, research objectives, research questions, research hypothesis, significance of the study, scope of the study.

1.1 Background of the Study

1.1.1 Historical background

The history of information systems (IS) only span five decades. Yet from its inception, IS has done more to expand business and industry into global markets than any other convention in history. Today the backbone of is known as the World Wide Web, Internet, or with a business a Local Area Network, along with lists of acronym buzz word; EDI, EIS, ERP, SCM and host of others to describe new ways in which IS can be employed to grow business (Apulu, & Latham, 2010).

Contrary to the speed of information today, just over forty years ago, the business climate in United States was experiencing post-war growth much like it had never seen. Much of the experience that grew the economy had been learned during World War Two in tooling up the nations industries into producing an effective war machine. The field that developed out of this push to win the war was Operations Research (OR). When the war end those involved with OR were released from government work, thus unleashing an experienced and highly skilled field, like no other in history, into business and industry, which launched the US into an era of prosperity and growth that lasted over twenty-years. World War Two also saw the birth of the first practical computers or Turing Machines, which were responsible for cracking the German codes and giving the allies advanced warning of enemy movements. By today's standards these first practical computers were not that practical, half a million dollars and far less powerful than a pocket calculator which today purchased for under ten dollars. However these first computers gave Operations Researchers the power they needed to begin simulate larger and more complicated systems which in business and industry help greatly to hone uses capital expenditures into profitable ventures. This background from the early days of

simulation, OR, and new technologies birthed studies into the areas of what became known as Information Systems (Jerome, 1990).

Over time, the impetus for information systems innovation moved from the early agriculture societies to other parts of the world, such as Greece (an alphabet with vowels), Germany (a printing system), and the United States (digital computers). Africa became a long-term importer of information systems and associated technology. Importers, however, can be innovators, especially when local conditions vary considerably from those where a technology emerged (Mazlan, 2006).

In his search for learning about information systems, Watson took a broader path to the quest a few years ago by recognizing that information systems have existed for thousands of years (Watson, forthcoming). He observed that information systems did not start about five decades ago with the application of digital computers to organizational data processing. Rather, humans have been developing and using information systems for tens of thousands of years. Humans are a cooperative social species with exceptional information processing capability. In order to cooperate, humans used their information processing capability to develop systems for mutually sharing information. The first of these information systems were developed in Africa, and they are still currently in widespread use (Moore, 1991).

Mobile phones were developed in Europe and North America for a relatively affluent clientele. Most of these people already had a landline, but quickly appreciated the convenience of a mobile phone. In contrast, few Africans have ever had a landline because of the high infrastructural costs of cable-based telephony. Mobile phone technology, fortunately, enabled African countries to leapfrog landline technology and install the cheaper and more useful cell phone system. The low cost of mobile phones means that they are affordable for many people living in less wealthy economies (Ongori, & Migiro, 2010).

The information systems adoption in Somalia is still poor according to the lack of IS skills of employees, this research is going to focus on the information systems adoption and its relationship with performance.

1.1.2 Conceptual background

Information systems have revolutionized the way business is conducted. You'd be hard pressed nowadays to find too many companies that do not rely on computers in some shape or form.

According to Anderson (2003), Information systems adoption, is the employment of a system which contains a group of harmonized and interrelated of business, components, and resources which grouping, processing, managing, and controlling the data for producing and carrying the useful information for decision makers through network of the channels and communication lines (Anderson, 2003).

Wikipedia (2008) defines measurement as the estimation of the magnitude of some attribute of an object. In applied social sciences measurement is often based on scaling and comparative statements concerning the characteristics of an attribute. However, performance expresses complex quality of organizational existence rather than particular attribute which could be defined exhaustively. Insuperable impact of subjectivity by measurement process and inseparability from evaluating procedures belong to implicit characteristics of performance measurement. With some exaggeration Jerome (1990) states that "the performance of the firm is fundamentally different from other kinds of performance ... because it is neither observable nor measurable" (Jerome,1990).

1.1.3 Contextual background

The context or the environment of the research will be ICT companies in Bosaso. The reason as to why the researcher has chosen to study in the area is due to easy access of information and being the home country of the researcher. The research population was the management and the staff of the ICT companies.

1.1.4 Theoretical background

The study was underpinned by contingency theory of performance which was proposed by Lawrence and Lorsch (1967), Donaldson (2001), the theory states that the organizational performance depends on the existence of a fit between the characteristics of an organization and the situation in which it operates.

In relation to the constructs in the study, constructs such as the profit, the goodwill and the population of clients are in the theory while constructs employee satisfaction and employees productivity are added to the Dependent Variable in the conceptual framework.

Employee satisfaction and productivity are thought to be important in the study because they are related to the Dependent Variable in the study.

1.2 Statement of the Problem

An information system is used by organizations to track, store, manipulate and distribute information to the appropriate people when necessary. Using an information system can enable a business to streamline its operations into a cohesive functioning unit. Information systems support business decision-making by providing management with critical data. They serve to enhance the organization's communication, reduce human labor, support short- and long-term business goals and distribute complex information. Information system benefits for organization include: Globalization, Communication, Cost effectiveness, Bridging the cultural gap, and creation of new jobs. Without information system the organization's performance will be poor. Poor performance can be known by some indicators including organization's loss, the goodwill of the organization will lower, customers not satisfied and employees not performing very well.

Despite the fact that most enterprises in Bosaso have adopted information systems in their operation, the effective adoption of the information system still remain a challenge and problem. In other words, businesses have not derived much benefits return on investments from information systems adopted. Furthermore, despite the adoption of information systems, performance of enterprises has not improved.

Thus, it is against the above account that the researcher has decided to conduct a research, in order to unearth factors causing poor performance.

1.3 Purpose of the Study

To determine the relationship between the information system adoption and performance of selected private telecommunication companies in Bosaso, Puntland, Somalia.

1.4 Research Objectives

The specific objectives of the study include:

1. To examine the level of Information System adoption in selected private telecommunication companies in Bosaso, Puntland, Somalia.
2. To determine the level of performance in selected private telecommunication companies in Bosaso, Puntland, Somalia.
3. To establish whether there is a relationship between the level of information system adoption and performance in selected private telecommunication companies in Bosaso, Puntland, Somalia.

1.5 Research Questions

The study was guided by the following research questions:

1. What is the level of information system adoption in selected private telecommunication companies in Bosaso, Puntland, Somalia?
2. What is the level of performance in selected private telecommunication companies in Bosaso, Puntland, Somalia?
3. Is there any significant relationship between the level of information system adoption and performance in selected private telecommunication companies in Bosaso, Puntland, Somalia?

1.6 Null Hypotheses

Ho₁: There is no significant relationship between the level of information system adoption and performance of selected private telecommunication companies in Bosaso, Puntland, Somalia.

1.7 Scope

1.7.1 Content scope

The content scope of the study includes the information system adoption and performance. The benefits of information system adoption for planning, recruiting, coordinating, training and customer care.

1.7.2 Geographical scope

The study was carried in selected private telecommunication companies in Bosaso, Puntland, Somalia. Those telecommunication companies are Golis, Telecom and Nation-link. Those companies are chosen according to their popularity. The companies are located in Bosaso which is an area of 700,000 populations in the eastern Somalia. The reason why the researcher chose this area is because of the availability of the information as it is the home country of the researcher and also of the gap the researcher has noticed in there.

1.7.3 Theoretical scope

Contingency theory of performance

According to Lawrence and Lorsch (1967), Donaldson (2001), the organizational performance depends on the existence of a fit between the characteristics of an organization and the situation in which it operates.

In this study, the researcher examined the role of certain factors that influence the information system adoption and performance. Those factors including the profit of the organization which is a performance indicator, the good reputation of the organization, the population of clients, employees satisfaction and employees productivity.

1.7.4 Time scope

The study was conducted in a period of two years that is from November 2012 to November 2014. This period was chosen by the researcher because it is the appropriate time for this study.

1.8 Significance of the Study

The research finding and conclusions of the study may be beneficial to the following people in the following ways:

1.8.1 Managers

The study may be beneficial to the company administrators and managers of who may be the implementers of the policy to understand how useful the information systems are to the performance. Information system adoption helps the managers take quicker decisions.

1.8.2 Employees

The study may be significant to the employees of the companies who have the chance to know how to maintain the companies' performance. Employees can benefit from information systems because it makes their work easier.

1.8.3 Future researchers

The study may also help the future researchers by utilizing the findings of the study to embark on a related study.

1.8.4 The researcher

The study may also be of a great significance to the researcher as it will help contribute to the findings and possible procedures of information system adoption and performance in selected private telecommunication companies in Bosaso, Puntland, Somalia.

1.9 Operational Definitions of Key Terms

1.9.1 Profile

It refers to the characteristics of the respondents looked for in this study in terms of age, gender, educational level, marital status and work experiences.

1.9.2 Information System adoption

It refers to Using computer hardware and software applications to support operations, management, and decision making in the business.

It is the utilization of information system in performing the following tasks or functions: planning, facilitating, coordinating, training, recruiting, etc. Information system is a system which contains a group of harmonized and interrelated of business, components, and resources which grouping, processing, managing, and controlling the data for producing and carrying the useful information for decision makers through network of the channels and communication lines.

1.9.3 Performance

It refers to how the business works on its productivity, degree of productivity and also the way of management in the company or business. It is the accomplishment of a given task measured against preset known standards of accuracy, completeness, cost, and speed.

1.9.4 Private telecommunication companies

It refers to a kind of a private communications service provider (CSP) more precisely a telecommunications service provider(TSP) that provides telecommunications services such as telephony and data communications access. The research is about private telecommunication companies that work in Bosaso, Puntland, Somalia. Those companies include Golis, Nationlink and telecom.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Theoretical review, conceptual framework, related literature

2.0 INTRODUCTION

This chapter provides a critical review of the issues that have been explored and studied theoretically and empirical in the existing literature made by other scholars and academicians on management. Literature review covers a wide range of different works and knowledge of authors about management structures, systems, rules and policies governing management.

2.1 Information System adoptions

Information system (IS) adoption is the adoption of any combination of information technology and people's activities that support operations, management and decision making. In a very broad sense, the term information system is frequently used to refer to the interaction between people, processes, data and technology. In this sense, the term is used to refer not only to the information and communication technology (ICT) that an organization uses, but also to the way in which people interact with this technology in support of business processes,(Apulu, & Latham, 2010).

Some make a clear distinction between information systems, computer systems, and business processes. Information systems typically include an ICT component but are not purely concerned with ICT, focusing instead on the end adoption of information technology. Information systems are also different from business processes. Information systems help to control the performance of business processes, (Fulantelli, & Allegra, 2003).

Alter argues for an information system as a special type of work system. A work system is a system in which humans and/or machines perform work using resources to produce specific products and/or services for customers. An information system is a work system whose activities are devoted to processing (capturing, transmitting, storing, retrieving, manipulating and displaying) information, (Moore, 1991).

As such, information systems inter-relate with data systems on the one hand and activity systems on the other. An information system is a form of communication system in which data represent and are processed as a form of social memory. An information system can also be considered a semi-formal language which supports human decision making and action (James, 1960)

Information systems are the primary focus of study for the information systems discipline and for organizational informatics (Fulantelli, & Allegra, 2003).

The research gap is geographical because the area this research is carried out is suffering from a very poor adoption of information system and ineffective adoption of information system.

2.1.1 Information systems adoption and recruitment

Recruitment is one of the most important and fundamental functions of the HR department. An effective recruitment strategy can lead to the hiring of the best candidate. This in turn can contribute not only in keeping cost down, but also in facilitating the processes of succession planning, employee retention, greater employee motivation, and reduced turnover. This is, however, contingent on the HR department having complete information about the nature, demands and construction of the job on one hand but also the knowledge about the personal competencies that are required to fulfil those jobs on the other (John & Elizabeth, 2005).

2.1.2 Information systems adoption and planning

Information systems help organizations make decision-making a quicker, more flexible, and more thoroughly aligned process. Information systems help both staff and managers plan and achieve their plans on time (Anderson, 2003).

The ability of company's effectively using information systems and betting on innovation and creativity is recognized today as one important factor on the competitiveness and agility of the companies. These take natural benefits through creativity and innovation by restructuring their processes, projects and products. The Information Systems Planning (ISP) is a vital activity for the success and competitiveness of companies (John & Joe, 2002).

2.1.3 Information systems adoption and performance

Enhanced performance management is another by-product of technological improvement. Human resources professionals can use computer technology to assess employee performance and also to get employee feedback to be used for the betterment of the organization. Various software programs make it possible for human resources professionals to examine employee performance using metrics to ensure that employees are meeting performance standards. Employees that don't measure up can be subjected to additional training or let go in favour a replacement that can come in and do the job (Bethuyne, 2002).

2.1.4 Information systems adoption and training

The information system adoption helps organizations to administer and track employee training and development efforts. The system, normally called a "learning management system" (LMS) if a standalone product, allows HR to track education, qualifications and skills of the employees, as well as outlining what training courses, books, CDs, web based learning or materials are available to develop which skills. Courses can then be offered in date specific sessions, with delegates and training resources being mapped and managed within the same system. Sophisticated LMS allow managers to approve training, budgets and calendars alongside performance management and appraisal metrics (Kollberg& Dreyer, 2006).

2.2 Performance

Performance is an analysis of the company's performance to the goals and objectives of the same company. within corporate businesses/companies, there are three primary outcomes analyzes; financial performance, market performance and the shareholder value performance(in some cases, production capacity performance may be analyzed) business/company performance is the picketing not directed against any of the employers of the company/business but aimed at persuading coworkers to join a particular union within the business/company. It can also be the end result of the process of setting medium and long term objectives for a company and then developing a strategy to accomplish those goals (Cameron, 2008).

2.2.1 Performance and profit

One of the indicators of performance is profit. The more profit the business makes the higher the performance. Profits can be either tangible as in cash or intangible as means of good image (Mike, 2009).

The profit is the most commonly used performance indicator. But for effective management in an organization we need to measure performance of not just the final result such as the profit but also of activities that contribute and lead to the final profit (Price, 2009)

2.2.2 Performance and population of clients

Another measurement of performance is the population of clients or customers. The number of customers increases whenever the performance of the business is high (Quin, 2010)

To increase the population of clients you have to Measure customer value. Measuring customer value is necessary to capture the essential meaning of quality. However, the existing tools to measure customer value do not adequately manifest the concept of customer value itself. Therefore, the modification of these tools becomes the prerequisite to continuously improve quality performance. The measurement of customer value during acquisition and use is based on intangible aspects (cognitive judgement). Along the value stream, these measures are translated (transformed) into tangible aspects, which comprise aspects such as shorter lead-time, reduced defects, and lower costs (Cameron, 2008).

2.2.3 Performance and employee satisfaction

When the business is performing well the employees will be satisfied. The reason behind the employee satisfaction is that the work environment is successful and sustainable (Richard, 2009).

Employee satisfaction is a key performance indicator. This may seem like abstract element but it largely impact a business in ways that are difficult to quantify like reputation and customer satisfaction (Mike, 2009).

2.2.4 Performance and employee productivity

Employee productivity is another indicator of the performance. Employees usually get motivated from the high performing environment and they work harder to succeed (Price, 2009).

Companies focus far too much on measuring returns on invested capital (ROIC) rather than on measuring the contributions made by their talented people. The vast majority of companies still gauge their performance using systems that measure internal financial results—systems based on metrics that don't take sufficient notice of the real engines of wealth creation today: the knowledge, relationships, reputations, and other intangibles created by talented people and represented by investments in such activities as R&D, marketing, and training (Quinn, 1999).

2.3 Theoretical perspective

Contingency theory of performance

The study was underpinned by contingency theory of performance which was proposed by Lawrence and Lorsch (1967), Donaldson (2001), the theory states that the organizational performance depends on the existence of a fit between the characteristics of an organization and the situation in which it operates.

In relation to the constructs in the study, constructs such as the profit, the goodwill and the population of clients are in the theory while constructs employee satisfaction and employees productivity are added to the Dependent Variable in the conceptual framework.

Employee satisfaction and productivity are thought to be important in the study because they are related to the Dependent Variable in the study.

Employee satisfaction is related to the dependent variable because when the organization is highly performing the employee satisfaction increases.

When the business is performing well the employees will be satisfied. The reason behind the employee satisfaction is that the work environment is successful and sustainable (Richard, 2009).

Employee satisfaction is a key performance indicator. This may seem like abstract element but it largely impact a business in ways that are difficult to quantify like reputation and customer satisfaction (Mike, 2009).

Employee productivity is also related to the dependent variable which is the business performance because of the strong relationship between the two.

Employee productivity is another indicator of the performance. Employees usually get motivated from the high performing environment and they work harder to succeed (Price, 2009).

Companies focus far too much on measuring returns on invested capital (ROIC) rather than on measuring the contributions made by their talented people. The vast majority of companies still gauge their performance using systems that measure internal financial results—systems based on metrics that don't take sufficient notice of the real engines of wealth creation today: the knowledge, relationships, reputations, and other intangibles created by talented people and represented by investments in such activities as R&D, marketing, and training (Quinn, 1999).

The contingency theory of performance focuses on the profit because the more profit the business makes the higher the performance. Profits can be either tangible as in cash or intangible as means of good image (Mike, 2009).

The profit is the most commonly used performance indicator. But for effective management in an organization we need to measure performance of not just the final result such as the profit but also of activities that contribute and lead to the final profit (Price, 2009)

The good reputation is another construct of the contingency theory of performance as the good reputation is a result of the performance of the organization.

2.4 Conceptual framework

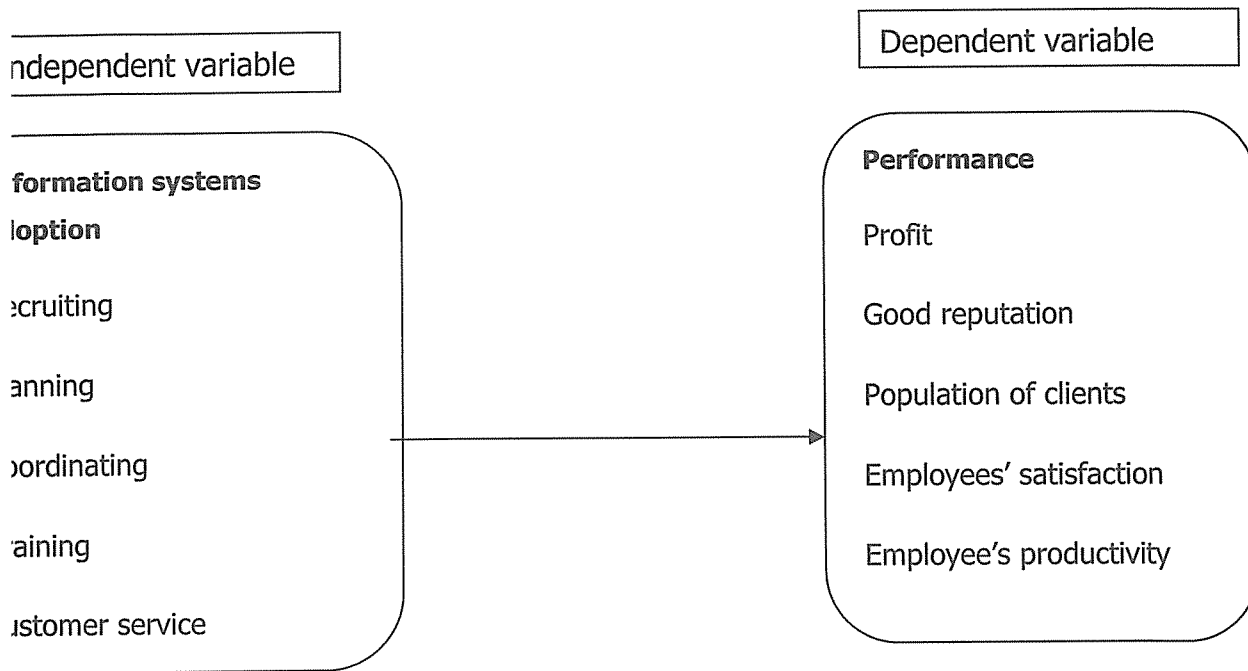


Fig.2.1 proposed conceptual framework which is designed by the researcher.

Independent variable: Information systems adoption helps businesses increase their performances through effective systems such as recruiting, planning, coordinating, training and customer service.

Dependent variable: Performance can be measured using indicators such as profit, good reputation, population of clients, employees satisfaction and employee productivity.

Independent variable: information systems have to be there in recruiting, planning, coordinating, training, customer service to have a good performance in the company.

2.5 Related studies

Several researchers have replicated apulu's original study (Apulu& Latham, 2010) to provide empirical evidence on the relationships that exist between usefulness, ease of use and system use (Apulu& Latham, 2010). Much attention has focused on testing the robustness and validity of the questionnaire instrument used by Apulu& Latham (2010) replicated the work of apulu (2010) to demonstrate the validity and

reliability of his instrument and his measurement scales. They also extended it to different settings and, using two different samples, they demonstrated the internal consistency and replication reliability of the two scales. Ben-Zion Barta (1995) found high reliability and good test-retest reliability. Baker & Branch (2002) found that the instrument had predictive validity for intent to use, self-reported usage and attitude toward use. The sum of this research has confirmed the validity of the Davis instrument, and to support its use with different populations of users and different software choices.

Cameron (2011) re-examined Apulu's (2010) replication of the apulu work. They were critical of the measurement model used, and postulated a different model based on three constructs: usefulness, effectiveness, and ease-of-use. These findings do not yet seem to have been replicated. However, some aspects of these findings were tested and supported by Workman (Workman, 2007) by separating the dependent variable into information use versus technology use.

Baker and apulu extended the original TAM model to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes. The extended model, referred to as TAM2, was tested in both voluntary and mandatory settings. The results strongly supported TAM2 (Venkatesh&apulu 2010).

2.5.1 Information system adoption

Strategic adoption of IS was first raised in research papers in the early 1980s (Wiseman, 1984; Rackoff, 1985; Synnott and Gruber, 1981). Early research in the field focused on "gaining competitive advantage", but after the appearance of research doubting the effectiveness of information systems (IS) in organizations (known as the "productivity paradox") it addressed issues like effectiveness and alignment of IS with organizational goals and strategies (Pant and Hsu, 1995). These issues were so influential on the IS/IT literature of the 1980s and 1990s that the decades were named as "Strategic Information System Era" (Pant and Hsu, 1999).

2.5.1.1 Information system adoption and recruiting

Ehie (2002) focused in his research on the recruiting function of organizations and its relation with the information system. He found out that the relationship was positive and his study concluded that, "employers are looking for individuals with a strong systems orientation and a good understanding of an integrative business value-chain". On programming skills, interviews with employers revealed that in-house training opportunities are available, and while management of information system hires are not expected to be programmers, "a general knowledge of programming logic and thought process with reasonable proficiency in at least one programming language" is desirable (Ehie, 2002). People and communication skills were considered critical for developing working relationships with clients from diverse backgrounds and needs.

In investigating skills and knowledge required by IS professionals in their jobs, Wade and Parent (2002) analyzed the relationship between job skill deficiency/surplus and performance for the Webmaster position. Although a job content analysis on descriptions for 800 Webmaster positions indicated that they are primarily technical positions with requirements for limited organizational skills, their empirical study revealed that organizational or "soft" skill deficiencies have a larger negative effect on job performance than technical skill deficiency. The measurement of skill deficiency or surplus in the study was based on participants' perceptions of the usefulness and proficiency of organizational and technical skills. The set of organizational skills defined in the study included communications, project management, teamwork, customer service, and general management skills.

2.5.1.2 Information system adoption and planning

Dessler (2005) carried out a research planning process and information system and found out that the planning process is easier to follow workforce gaps, the quantity and quality of the labor force and to plan future workforce requirements with the help of information system.

However, Shibly (1995) also carried out a research on the same aspect and found out a negative relationship between planning and information systems.

In contrast, (Karakanian, 2000) found out a positive relationship between the information systems and the planning. He found out that information system can support long range planning with information for labor force planning and supply and demand forecast; staffing with information on equal employment, separations and applicant qualifications; and development with information on training programs, salary forecasts, pay budgets and labor/employee relations with information on contract negotiations and employee assistance needs.

2.5.1.3 Information system adoption and coordinating

Early researches questioned the link between the information system adoption and coordinating in organization. They found out a poor relationship between the two (Grover and Segars, 2005). However, Byrd (2006), studied the effect of information system on the coordinating function of organizations and found out a very good relationship between the information system and coordinating. Scott (2005) also investigated the same aspect and also got positive results on the relationship between the coordinating and the information system adoption (Mirchandani and Lederer, 2012).

2.5.1.4 Information system adoption and training

Todd, McKeen, and Gallupe's (1995) content analysis of information systems impact on recruiting of the organizations. Their results indicated positive relationship between the two. Their conclusions are that technical skills, knowledge of business, problem-solving skills, and general management skills are important, and emphasis on technical skills over "soft" or business and interpersonal skills should be further examined to address a perceived recruitment gap. The recruitment gap defined by the authors is a mismatch between the criticality of "soft" or business skills as perceived by senior information systems managers and practices by lower level managers/supervisors who have strong preferences in hiring based on specific technical skills. In another study, academicians and practitioners in information system ranked the importance of variables defined for information system core knowledge and skills and software tools (Lee, Koh, Yen, & Tang, 2002). Their results

indicate that the adoption of information system increases the quality of the trainings offered by the organization.

2.5.1.5 Information system adoption and customer service

The work of Teubner (2007) confirms that customer services quality has increased after the adoption of information system. The reason for this could be the complexity of the work without the help of the information system as everything is done by computer.

With this topic, good advice is provided by Newkirk (2003) who has also done a research on it, he said that information system is very crucial for organizations.

2.5.2 Performance

The effect of the information systems adoption on performance measures in organization is not a new topic in the information systems literature. Previous academic research on this topic has been mainly concerned with the adoption of Information system's relationship with the performance. From the mid-90s, researchers started to focus on the adoption of Information Systems in recruiting, planning, coordinating and its impact on the customers and employees of the organization (Ittner, 1997).

2.5.2.1 Performance and profit

Research developed by Ittner (2003a) or Ho and McKay (2002) have revealed that the adoption of information systems in organization have increased the income. In Ittner's (2003a) research, he compared the organization's profit status before and after the adoption of the information systems. Specifically these researchers found the strong relationship between the profit as an indicator of high performance and the information system adoption.

2.5.2.2 Performance and good reputation

Numerous authors researched on the reputation or the good will of organizations and its relationship with the adoption of information systems (Meyer and Gupta, 1994; Ghalayini and Noble, 1996; Dixon, 1990; Wisner and Fawcett, 1991). They

found out that the adoption of the information system helped the organizations to gain good will and high reputation which in turn increased the number of clients. Eccles (1991) also took out a research on the same aspect and got the same findings. Those authors concluded their research with the importance of the adoption of information systems to the organization.

2.5.2.3 Performance and population of clients

According to Teddy, senior partner in the Danish arm of Ernst and Young "It will not be possible to create shareholder value without creating stakeholder value".

Since Freeman's (1984) there has been considerable attention paid to the clients approach to management of organizations. In the Tomorrow's Company report, they suggested that competitive success in the future will increasingly depend on taking an inclusive approach to management, reflecting the need for consideration of the requirements of all clients to be central to performance measurement and management activities (RSA, 1995). Authors such as Freeman, Alkhafaji and Nasi highlight that "the client concept is probably the most consistent with the environment that organizations face on a regular and contemporary basis and with the adoption of the information systems the clients get more satisfied which increases the company's reputation and increases the number of the clients". Hence those authors took out a research to find out the link between the adoption of information systems and the increase of the clients and the research results turn out positive.

2.5.2.4 Performance and employee satisfaction

In the 1980s and early 1990s, disappointment in information system was chronicled in articles disclosing broad negative correlations with worker satisfaction. More recently, researchers began to find positive relationships between information system investment and employee satisfaction.

Jorgenson and Stiroh's (1995) confirm this trend. Their findings show that the adoption of information systems has increased the employee satisfaction.

2.5.2.5 Performance and employee productivity

Interest in the “employee productivity”, has engendered a significant amount of research. Although researchers analyzed statistics extensively, they found little evidence that information systems significantly increased productivity in the 1970s and 1980s. The results were aptly characterized by Robert Solow’s quip that “you can see the computer age everywhere but in the productivity statistics,” and Bakos and Kemerer’s (1992) summation that, “These studies have fueled a controversial debate, primarily because they have failed to document substantial productivity improvements attributable to information system investments.” Now, after researchers such as Brynjolfsson and Hitt (1993, 1995), and Lichtenberg (1995) found firm-level evidence that information system investments earned substantial returns.

A growing number of academic studies also report positive effects of information system on various measures of economic performance. As more research is conducted, we are gradually developing a clearer picture of the relationship between information systems and employee productivity. While one study shows a negative correlation between total factor productivity and high share of high-tech capital formation during 1968-1986 periods (Berndt and Morrison, 1995), another study suggests that computer capital contributes to growth more than ordinary capital during the similar period (Jorgenson and Stiroh, 1995). Hitt and Brynjolfsson (1994) report positive effects of information system on productivity.

2.5.3 Information system adoption and performance of organization

Contemporary information system (IS) researchers have increasingly directed interest and attention towards the link between information system investment and organization performance and found that information system have positive impact on organizational performance (Raymond, 1992).

Information system is very essential in today’s business competitive environment as they would promote proactive management style and greater confidence in management decisions. However, effective information is still uncommon due to technical, technological and people issues (Bititci, 2002).

Bititci et al. (2000) argue that adoption of information system would ensure that an organization remains integrated, efficient and effective at all times and sensitive to changes in the internal as well as external environment of the organization.

2.6 Research Gap

The gap of this research is geographical as the researcher noticed that there is no research that has been done on the same topic in the same area. Much as research on information systems adoption and performance has been conducted in many countries, non-the less there is no literature on similar topic that has been conducted in Bosaso, Puntland, Somalia.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the steps and procedure that were taken to conduct the research to achieve the objectives of the study. Methodology refers to the methods and techniques used for conducting research. The methods to be chosen for data collection of this study are quantitative method which is often the best and most efficient approach to collecting in-depth and complete information.

3.1 Research Design

This study employed the descriptive survey design specifically the descriptive comparative and descriptive co relational strategies. The descriptive comparative was used to determine the difference between the information system adoption and performance. The descriptive correlation was used to determine the relationship between the independent variable (information system) and the dependent variable (performance).

3.2 Research Population

The study involved all the managers and employees in three private telecommunication companies in Bosaso Puntland Somalia. The total number of the population is 170.

It's from the above population that a sample was selected to participate in the research. Three companies that is; Golis (80) and Telecom (55) and nation link (35) were selected to participate in the study.

3.2.1 Sample Size

The study was about the three main private telecommunications companies in Bosaso, Puntland, Somalia. These private companies include; Golis, Telecom, Nation link. The criterion for selecting those three companies is the popularity they have in society while the other telecommunication companies are very unpopular and don't have many customers. Using the Sloven's Formula (1970) sample size determination table, from a population of 170, a sample of 110 respondents were selected.

Sloven's formula is $n = N / (1 + Ne^2)$,

Where; n= sample size

N= population size

e= level of significance (0.05).

$$170 / (1 + 170(0.05^2)) = 119.$$

The summary of the sampling criteria is shown in table 3.1 below.

Table 3.1: Population, sample size and sampling criteria

Category	Target population	Sample size
Golis	80	56
Telecom	55	38
Nation link	35	25
Total	170	119

3.2.2 Sampling Procedure

The purposive sampling was utilized to select from the telecommunication companies in Bosaso, Puntland, Somalia.

From the list of the qualified companies chosen based on the inclusion criterion, the systematic random sampling was used to finally select the respondents with consideration to the computed minimum sample size

3.3 Research Instrument

The research tools that were utilized in this study include the following: (1) Face sheet to gather data on the respondents' demographic characteristics (age, gender, educational level, marital status and the work experiences). (2) Researcher devised questionnaires to determine the levels of the information system. The researchers' type of questionnaire is a standardized questionnaire. The questionnaire was closed ended to enable collection of the required data for the study in order to determine the relationship between information system adoption and performance. A questionnaire is often a onetime data gathering device on the variables of interest to the researcher (Amin 2005).

The research questionnaire contains three sections

Section A: demographic characteristics to gather the details and the information of the respondent.

Section B: contains questions about the IV.

Section C: contains questions about the DV.

The response mode of the questionnaire is as follows:

Strongly agree 4

Agree3

Disagree 2

Strongly disagree 1

3.4 Validity and Reliability of the Instrument

Validity is the quality of the test doing what is designed to do (Salkind, 2000). The researcher will consult his supervisor for expert knowledge on questionnaire construction. After the assessment of the questionnaire, the necessary adjustments were made bearing in mind the objectives of the study. The formula that will be used to calculate the validity of the instrument is:-

Content Validity Index (CVI) = No. of items declared valid/ Total No. of items.

Reliability is the measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda&Mugenda, 2003). Reliability of the instrument was established through a test-retest technique. The researcher conducted a pre-test of the instrument on group of subjects that have a similar characteristic to the respondents.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.812	0.809	14

This table shows the results of the reliability test using cronbach's alpha test. Results of the analysis shows good reliability measure having computed value of 0.81 which is above 0.8 good reliability levels for a valid research instrument.

3.5 Data Gathering Procedures

3.5.1 Before the administration of the questionnaires

1. An introduction letter was obtained from the CHDR for the researcher to solicit approval to conduct the study from respective heads of secondary schools.
2. When approved, the researcher secured a list of the qualified respondents from the school authorities in charge and select through systematic random sampling from this list to arrive at the minimum sample size.
3. The respondents were given explanation about the study and were requested to sign the Informed Consent Form (Appendix 3).

4. The researcher reproduced more than enough questionnaires for distribution.
5. Select research assistants who would assist in the data collection; brief and orient them in order to be consistent in administering the questionnaires.

3.5.2 During the administration of the questionnaires

1. The respondents were requested to answer completely and not to leave any part of the questionnaires unanswered.
2. The researcher and assistants emphasized the retrieval of the questionnaires within five days from the date of distribution.
3. On retrieval, all returned questionnaires were checked if all were answered.

3.5.3 After the administration of the questionnaires

The data gathered were collated, encoded into the computer and statistically treated using the Statistical Package for Social Sciences (SPSS).

3.6 Data Analysis

To determine the profile of the respondents, the frequency and percentage distribution was used. The mean and standard deviation was employed to compute for the level of information system adoption and performance (objective 1 & 2). Pearson linear correlation coefficient (PLCC) was used to determine the relationship between the information system adoption and performance (objective 3). An item analysis based on the mean scores and ranks were to reflect the strengths and weaknesses of the respondents in terms of information system adoption and performance. To interpret the obtained data, the following numerical values and description was used:

Mean Range	Description	Interpretation
3.26-4.00	strongly agree	Very satisfactory
2.51-3.25	Agree	Satisfactory
1.76-2.50	Disagree	Fair
1.00-1.75	Strongly disagree	Poor

3.7 Ethical Considerations

To ensure confidentiality of the information provided by the respondents and to ascertain the practice of ethics in this study, the following activities will be implemented by the researcher:

1. Permission was sought to adopt the standardized questionnaire on company effectiveness through a written communication to the author.
2. The respondents and companies were coded instead of reflecting the names.
3. Permission was solicited through a written request to the concerned officials of the companies included in the study.
4. Respondents were requested to sign in the *Informed Consent Form*,
5. Authors quoted in this study were acknowledged and the author of the standardized instrument through citations and referencing.
6. The findings in the study were presented in a generalized manner.

3.8 Limitations of the Study

In view of the following threats to validity, the researcher will claim an allowable 5% margin of error at 0.05 level of significance. Measures are also indicated in order to minimize if not to eradicate the threats to the validity of the findings of this study.

1. *Intervening variables:* This is where it will be beyond the researcher's control such as respondents' honesty, personal biases and uncontrolled setting of the study. However in this study no intervening variable was considered.
2. *Testing:* The use of research assistants can bring about inconsistency in the administration of the questionnaires in terms of time of administration, understanding of the items in the questionnaires and explanation given to the respondents. To minimize this threat, the research assistants were oriented and briefed on the procedures to be done in data collection.
3. *Attrition/Mortality:* Not all the questionnaires may be returned neither completely answered nor even retrieved back due to circumstances on the part of the respondents such as travel, sickness, hospitalization and refusal/withdraw to participate. In anticipation to this, the researcher reserved more respondents by exceeding the minimum sample size. The respondents was reminded not to leave any item in the questionnaire unanswered and were closely followed up as to the date of retrieval. Attrition rate= no. of questionnaire received/ no. of questionnaire distributed.117/130
4. *Time limitations:* scheduling problems most certainly affected the researcher's ability to gather relevant information, since all respondents have responsibilities at their jobs so it was quite hard to make appropriate schedules for proper information gathering.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 INTRODUCTION

This chapter presents the analysis of the data gathered and interpretation thereof. It gives the demographic characteristics of respondents and variables used.

4.1 Demographic characteristics of respondents

This section determines the demographic characteristics of respondents in terms of gender, age, education level and marital status and work experience. To achieve it, questions were asked to capture these responses. Frequencies and percentage distributions were employed to summarize the demographic characteristics of respondents as shown in table 4.1 below.



Table 4.1 Profile of the Respondent

Category	Frequency	Percentage
Gender		
Male	83	70
Female	36	30
Total	119	100
Age range		
12-18 (adolescent age)	25	21
20-39 (Early Adulthood)	70	59
40-59 (Middle Adulthood)	18	15
60 and above (Late adulthood)	6	05
Total	119	100
Educational Level		
Certificate	20	17
Diploma	38	32
Degree	41	34
Masters	11	9
Phd	9	8
Total	119	100
Marital status		
Married	67	56
Single	39	33
Divorced	9	8
Widowed	4	3
Total	119	100
Work experience		
6months-1 year	7	5
2 years-4 years	58	49
5 years-7 years	39	33
8 years and above	15	13
Total	119	170

Source: primary data, 2014

In regards to gender, table 4.1 revealed that majority 83 (70%) were male while 36 (30%) were female. This implies that the study was dominated by the male. This could be because in most telecommunication companies in Somalia, the male are still preferred in employment compared to their female counterparts. There is also the aspect of women marginalization in the country hence they are least represented.

In regard to age groups, table 4.1 revealed that majority of the respondents fall in the category of 20-39 years numbering 59% compared to other categories of, 12-18, 40-59 years and 60 and above age brackets, which give percentages of 21%, 15% and 5% respectively, suggesting that young people constitute the majority of employees in the University.

On further scrutiny the results from table 4.1 also showed that in terms of academic level, most of the respondents possess a Bachelor's Degree contributing 34%, followed by diploma holders (32%), while those with certificates were 17%. Those with masters and PhD were 6% and 8% respectively. This indicates that the respondents provided trustable information.

The educational system often determines when a person would normally be available for employment. When people spend too long in school, the supply of labor will be delayed and entrants into the labor market are more likely to be older in comparison to those with early schooling. The findings here indicate that younger people are dominating the telecommunication industry staff at the companies studied in Bosaso Somalia. This could be suggestive of the early adulthood being the most confident generation and thus most wanted generation now in workplaces as stipulated by Glass, 2007 quoted by Oluwakemi et al (2011).

In regard to marital status, the findings as revealed by table 4.1 indicate that majority of the respondents 67 (56%) were married while 39(33%) were single. The rest including the divorced and widowed were 9(8%) and 4(3%) respectively; this suggests that the married people dominate this sector probably because they are considered more self-driven ,enthusiastic, and more responsible with their performance. There single counterparts and other categories including the divorced and widowed are few in this sector probably because they are considered not consistent and dependable enough to be tasked with the responsibilities relating to the telecommunication industry. This is based on the assumption that a married person is much more focused and goal oriented compared to one that does not have a permanent partner.

The research findings in regard to work experience as per table 4.1, revealed that majority of the respondents 58(49%) had worked with the private telecommunication companies for 2-4 years, while 15(13%) had over 8 years of experience with 39(33%) having worked with company for 5-7 and only 7(5%) had been employed for between 6months and one year. This may suggest a high rate of turn-over within the telecommunication companies or increasing numbers of young employees dominating the staff or work force.

4.2 The Level of Information System adoption in Selected Private Telecommunication Companies in Basaso, Puntland-Somalia

The first objective of this study was to determine the level of Information System adoption in selected private telecommunication companies in Bosaso, Puntland, Somalia. The researcher in order to achieve this objective, distributed questionnaire to the employees and managers of three selected telecommunications companies namely: Golis, Telecom and nation link in Puntland. The researcher summarized the findings of this objective in table 4.2 below.

**Table 4.2: Mean Values for the Level of Information System adoption in
Selected Private Telecommunication
N=170**

Indicators	Mean	Interpretation	Rank
Types of activities in which information systems technology is used			
Recruiting			
The adoption of information systems helps the organization to select the right candidate for the right job.	3.69	Very satisfactory	1
The organization adopts information system for recruiting	3.04	Satisfactory	2
Average mean	3.37	Very satisfactory	
Planning			
The organization adopts information system for planning	3.21	Satisfactory	1
The adoption of information system helps the organization to take quicker decisions.	2.74	Satisfactory	2
Average mean	2.98	Satisfactory	
Coordinating			
The organization adopts information system for coordinating	2.41	Fair	
Training			
Trainings offered by the organization are high tech	2.89	Satisfactory	1
Information about trainings are kept in computer for later use	2.67	Satisfactory	2
The organization adopts information system for training	2.50	Fair	3
Average mean	2.69	Satisfactory	
General average mean	2.86	Satisfactory	

Source: Primary Data, 2014

Mean Range	Description	Interpretation
3.26-4.00	strongly agree	Very satisfactory
2.51-3.25	Agree	Satisfactory
1.76-2.50	Disagree	Fair
1.00-1.75	Strongly disagree	Poor

In regard to recruiting, table 4.2 revealed an average mean of (3.37) and was interpreted as satisfactory. This could be because majority of the respondents strongly agreed that the adoption of information systems helps the organization to select the right candidate for the right job (mean=3.69) and that the organization adopts information system for recruiting (mean=3.04).

As for the planning activity, the study as portrayed in table 4.2, revealed an average mean of 2.98, meaning it was satisfactory. This could be due to the fact that majority of the respondents (3.21) agreed that adoption of information systems in the telecommunication companies under study helps the companies to attain enhanced and quicker decision making (2.74) in the companies' planning processes.

In regard to Coordinating, the research showed a mean of (2.41) and was interpreted as fair. This meant that majority of the respondents disagreed that information systems were instrumental in relation to coordination of company activities.

As regards training, table 4.2 revealed an average mean of (2.69) and was interpreted as satisfactory. This meant that a bigger part of the employees of the telecommunication companies under study agreed that information systems play a vital role in the training activities of the company. This is supported by the fact that employees agreed that trainings offered by the organization are high tech (2.89); Information about trainings is kept in computer for later use (2.67); and that the organization adopts information system for training (2.50)

4.3 The Level of Performance in Selected Private Telecommunication Companies in Bosaso, Puntland, Somalia

The second objective of this study was to determine the level of performance in selected private telecommunication companies in Bosaso, Puntland, Somalia. The researcher in order to achieve this objective, distributed questionnaire to the employees and managers of three selected telecommunications companies namely: Golis, Telecom and nation link in Puntland. The researcher summarized the findings of this objective in table 4.3 below

Table 4.3: Mean Values for Level of Performance in Selected Private Telecommunication Companies in Bosaso, Puntland, Somalia
N=170

Indicators	Mean	Interpretation	Rank
Good Reputation			
The organization is praise by customers for good IT services.	3.44	Very satisfactory	1
Population Of Clients			
The organization always strive for business excellence and overall customer satisfaction at all times	3.13	Satisfactory	1
The clients of the organization is increasing after the adoption of the information systems	3.01	Satisfactory	2
Employees Satisfaction			
you as an employee are satisfied with the organizations performance	3.31	Very satisfactory	1
The team members of the organization are allowed to provide suggestions for improvements freely	2.94	Satisfactory	2
Employees Productivity			
The employee productivity has increased after the adoption of the information system	2.73	Satisfactory	1
General average mean	3.09	Satisfactory	

Source: Primary Data, 2014

Mean Range	Description	Interpretation
3.26-4.00	strongly agree	Very satisfactory
2.51-3.25	Agree	Satisfactory
1.76-2.50	Disagree	Fair
1.00-1.75	Strongly disagree	Poor

The findings from Table 4.3 showed a satisfactory level of company performance with an average mean of 3.09. This means that majority of the respondents agreed on the variables measuring company performance in the institutions under study. This can be evidenced by the fact that employees pride in the good reputation of the company as shown by the praise from customers for good IT services (3.44), huge population of clients with employees pointing out that the companies always strive for business excellence and overall customer satisfaction at all times (3.13) and this has led to increase the clients of the organization (3.01).The employees also reported satisfaction with the company performance (3.3). The team members of the organization are allowed to provide suggestions for improvements freely (2.94) and (2.73) employee productivity has increased after the adoption of the information system.

Florida (2002) concur that anyone whose work creates "meaningful new forms" is vital to the success of an organization. According to Florida, creative professionals "work in a wide range of knowledge-intensive industries such as high-tech sectors, financial services, the legal and healthcare professions, and business management. These people engage in creative problem-solving, drawing on complex bodies of knowledge to solve specific problems." This means that employing knowledgeable employees in departments like ICT, finance, planning, human resource etc. in the telecommunication industry in Bosaso can effectively serve its staff, and the outside community.

This study agrees with that of Mazlan (2006) where the complexity of ICT technology and lack of knowledge by employees and management capability was a barrier to the adoption and extension of information system. He found out that some CEOs were worried about the introduction of new advanced ICT because of the fear that their employees might be not familiar with it hence affecting the performance of the organization.

4.4 The Relationship between the Level of Information System Adoption and Performance in Selected Private Telecommunication Companies in Bosaso, Puntland, Somalia

- i. The third objective of this study was to determine whether there is a relationship between the level of information system adoption and performance in selected private telecommunication companies in Bosaso, Puntland, Somalia. Table 4.4 presents the summary of the findings.

Table 4.4: The Relationship between the Level of Information System Adoption and Performance in Selected Private Telecommunication Companies in Bosaso, Puntland, Somalia

Variables correlated	Pearson (r) value	Level of Significance	Interpretation	Decision on H₀
Information System Adoption Vs Performance	0.751	0.047	Significant correlation	Rejected

(Sig at 0.05)

The results in Table 4.4 suggest a significant and positive correlation between information system adoption and performance ($r=0.751$, $Sig=0.047$) hence the null hypothesis was rejected and the alternative hypothesis upheld. This therefore implies that a positive change in the level of information system will significantly affect the level of performance.

Table 4.5 Regression Analysis between Information System Adoption and Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.751 ^a	.564	.520	.044124	.004	.009	1	7	0.047

The results in Table 4.5 show that information system adoption significantly affect the level of performance ($F=0.009$, $Sig=0.047$). The results indicate that all the items under analysis in information system adoption together account for up to 56% of the variations in the level of performance ($R^2 = 0.564$). However the remaining 43.6% is explained or accounted for by other factors not mentioned in the study.

CHAPTER FIVE

FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter presents a summary of major findings, conclusions, recommendations and areas of further research.

5.1 Findings

Demographic characteristics of respondents

In regard to gender, the study revealed that majority 83(70%) of the respondents were male while the female were 36(30%). In regard to age groups, majority of the respondents fell in the category of 20-39 years numbering 70(59%) compared to other categories of 12-18, 40-59 years, and 60 and above age brackets, which give percentages of 21%, 15% and 5% respectively. In regard to academic level, the study showed that majority of the respondents possessed a Bachelor's Degree contributing 34%, followed by diploma holders (32%) and those having certificates were 17% while those with masters were 9%, and only 9% had PhD. The research findings in regard to work experience revealed that majority of the respondents 58(49%) had worked with the private telecommunication companies for 2-4 years, while 15(13%) had over 8 years of experience with 39(33%) having worked with company for 5-7 and only 7(4%) had been employed for between 6months and one year.

Adoption of Information and Communication systems Technology

The study showed an average mean of 3.37 for level of adoption of information systems in various types of telecommunication activities which entail company performance. This finding is in agreement with the findings of Mingers (2001, 2003). This according to the analysis revealed a very satisfactory score. Items under the variable measured which scored the highest mean included: application of information systems technology in the recruitment process with a mean of 3.69 to help the company select the right employees for the jobs available.

In regard to planning activity, the study revealed an average mean of 2.98, meaning it was satisfactory. This confirmed that majority of the respondents agreed

that information systems are used in the telecommunication companies under study. This was supported by the following items: it facilitates enhanced and quicker decision making (2.74) in the companies' planning processes. This is in agreement with the findings of Karakanian (2000).

In regard to Coordinating, the research showed a mean of (2.41) and was interpreted as fair. This meant that majority of the respondents disagreed that information systems were instrumental in relation to coordination of company activities. This is in line with the findings of Byrd et al. (2006).

As regards training, the research revealed an average mean of (2.69) and was interpreted as satisfactory. This meant that a bigger part of the employees of the telecommunication companies under study agreed that information systems play a vital role in the training activities of the company. This argument is supported by such indicators like; Trainings offered by the organization are high tech (2.89); Information about trainings is kept in computer for later use (2.67); the organization adopts information system for training (2.50). This is in agreement with the findings of Todd, McKeen, and Gallupe's (1995).

The Level of Performance in Selected Private Telecommunication Companies in Bosaso, Puntland, Somalia

The research showed a satisfactory level of organizational performance with an average mean of 3.09. This meant that majority of the respondents agreed on the variables measuring organizational effectiveness in the institution under study. This finding is in line with the findings of (Applegate & King, 1999; Benbasat&Zmud, 1999; Boudreau, Gefen, & Straub, 2001; Davenport & Markus, 1999; Dube& Pare, 2003; Lee, 1999; Lee, 2000; Lee, 2001; Lee & Baskerville, 2003; Lyytinen, 1999; Massetti; 1998). This could be evidenced by the fact that the organization always strive for business excellence and overall customer satisfaction at all times (3.1 The clients of the organization are increasing after the adoption of the information systems (3.01), The team members of the organization are allowed to provide suggestions for improvements freely (2.94) and (2.73) employee productivity has increased after the adoption of the information system.

Relationship between Adoption of Information and Communication Technology and company performance

The results suggested that the level of adoption of information and communication technology is not correlated with the level of organizational effectiveness and efficiency ($r=0.388$, $Sig=0.124$).

Regression analysis showed that adoption of information and communication technology significantly affects the level of company performance ($F=0.009$, $Sig=0.047$). The results indicate that all the items under analysis in information system adoption together account for up to 52% of the variations in the level of performance (adjusted $R^2 = 0.520$). This is in line with the findings of Charles Wiseman (1984).

5.2 Conclusions

On the basis of the above findings, the following conclusions were made for influence of information and communication technology on the performance of the private telecommunication companies in Somalia.

The study found that, the use of information system services which the telecommunication companies have adopted in a large extent has improved its performance. Some of the ways in which information systems has improved efficiency in the departments include; increased productivity and efficiency; faster processing of Customers hence greater customer satisfaction; immediate dissemination of information throughout the company; faster sharing of data between different departments; processing of enormous amounts of data; easy accessibility of information at any time; enforced checks and balances across the different sections in the department in terms of well-defined workflows thus enhancing accountability and efficiency in carrying out the day to day tasks at the departments; accuracy, speed and volume of work done; improved process management; improved lead times in service delivery; improved communication flow access to real time information; reduced communication costs; data accuracy through the use of industry standard communication platforms and using applications that validate against business rules; use of a website and related

website technologies has assisted in increasing sales, reduced fraud cases and paperless environment reduces costs robust systems to support operations.

The study asserts that; diversification into new markets, additional destinations, positive cash flows, increased number of Customers , increased number of business opportunities , customer loyalty, low employee turnover, large number of employees and large number of assets owned are perceived indicators of how well an telecommunication companies is performing in which the study found that information systems (devices, applications and networks) affects the indicators of telecommunication companies performance positively.

The study affirms; ease of using applications, website with full information needed, feeling safe when using information systems, accuracy of the information provided, convenience, prompt response to customer enquiries, time efficient and help in making informed choice to be factors that have led to use of information systems in the telecommunication companies.

The study further found that: slow speed of user adoption, systems failure while enquiring, there is skills/competence gaps among its staff, system taking long to respond, cost of the systems, management not committed, information available not clear, and fraud cases are perceived challenges faced while using information systems services in the telecommunication companies industry.

From the study findings the study concludes that information systems and communication technology which includes communication networks, mobile phone technology, and handheld devices such as iPads and Internet applications positively influence the performance of the private telecommunication companies in Somalia to a large extent.

5.3 Testing of Hypotheses

The hypothesis of this study assumed a significant relationship between the level of adoption of Information systems in telecommunication companies and the level of organizational performance in Bosaso Somalia.

The results suggested that the level of adoption of information and communication technology is correlated with the level of organizational effectiveness and efficiency ($r=0.388$, $Sig=0.124$).

Regression analysis showed that adoption of information and communication technology significantly affects the level of organizational performance ($F=0.009$, $Sig=0.047$). The results indicated that all the items under analysis in adoption of information and communication technology together accounted for account for up to 52% of the variations in the level of performance (adjusted $R^2 = 0.520$).

5.4 Validation of Theory

The contingency theory of performance of Donaldson, (2001) was proven in relation to information systems adoption and performance effectiveness based on the research findings. Research found out that the theory was valid by the regression analysis of the study. The results in Table 4.5 show that information system adoption significantly affect the level of performance ($F=0.009$, $Sig=0.047$). The results indicate that all the items under analysis in information system adoption together account for up to 56% of the variations in the level of performance ($R^2 = 0.564$).

5.5 Contribution to knowledge

Adoption of information and communication technology guarantees enhanced telecommunication performance.

5.5 Recommendations

On the basis of the above conclusions, the following recommendations were made for influence of information and communication technology on the performance of the private telecommunication companies in Somalia.

From the findings the study recommends that; the telecommunication companies industry should make use of information systems that have been put in place; various products must be presented to this industry meaning that information

systems security must not be compromised at all cost, products to curb fraud and money laundering should be put in place and always safe guard all the processes from interference from the terrorist; the private telecommunication companies should adopt new technology and solutions as they emerge, and not look at information and communication technology as a cost, but an investment which in the long run will contribute to increase in the efficiency of the different departments of the telecommunication companies.

From the findings the study also recommends that telecommunication companies should; embrace information systems thus having competitive edge and customer satisfaction; change management should be handled for employees using computers; have more self-service enabled services to improve customer service; automate all critical processes to achieve efficiency, reliability and control in the organization; build in house capacity to handle IT systems policies and procedures that attempt to retain IT staff; backup plans as well as alternative options are a good fallback as well as looking to keep some human aspects for interaction to be relevant; management should develop an information systems strategic plan.

5.6 Areas for further research

This study sought to assess the influence of information systems and communication technology on the performance of the private telecommunication companies in Somalia with particular reference to Somalia private telecommunication companies attempting to bridge the gap in knowledge that existed. Although the study attained these, it mainly focused on only telecommunication companies in Puntland. There is need to replicate the study using many other telecommunication companies in different parts of the country so as to find out if there are any other factors influencing information and communication technology on the performance of the private telecommunication companies in Somalia.

There is need to conduct a similar study which will attempt to find out if the use of information systems in attaining competitive advantage in the private telecommunication companies of Somalia.

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APPENDIX IA
TRANSMITTAL LETTER

OFFICE OF THE DEPUTY VICE CHANCELLOR (DVC)
SCHOOL OF POSTGRADUATE STUDIES AND RESEARCH (SPGSR)

Dear Sir/Madam,

RE: INTRODUCTION LETTER FOR Mrs. Maymuna Abdulkadir Mohamed.
REG. NO. MBA/38159/123/DF, TO CONDUCT RESEARCH IN YOUR
INSTITUTION

The above mentioned candidate is a real student of Kampala International University pursuing a Masters of Business Administration in Information Technology.

She is currently conducting a field research for her thesis entitled, **Information System adoption and Performance, a Case Study in selected private telecommunication companies in Bosaso, Puntland, Somalia**

Your institution has been identified as a valuable source of information pertaining to her research project. The purpose of this letter then is to request you to avail her with the pertinent information she may need.

Any data shared with her will be used for academic purposes only and shall be kept with utmost confidentiality.

Any assistance rendered to her will be highly appreciated.

Yours truly,

Principal CHDR

APPENDIX IB

TRANSMITTAL LETTER FOR THE RESPONDENTS

Dear Sir/ Madam,

Greetings!

I am a Masters of Business Administration in Information Technology candidate of Kampala International University. Part of the requirements for the award is a thesis. My study is entitled, **Information System adoption and Performance in selected private telecommunication companies in Bosaso, Puntland, Somalia**. Within this context, may I request you to participate in this study by answering the questionnaires? Kindly do not leave any option unanswered. Any data you will provide shall be for academic purposes only and no information of such kind shall be disclosed to others.

May I retrieve the questionnaire within five days (5)?

Thank you very much in advance.

Yours faithfully,

Mrs. Maymuna Abdulkadir Mohamed

APPENDIX II

CLEARANCE FROM ETHICS COMMITTEE

Date_____

Candidate's Data

Name_____

Reg. # _____

Course _____

Title _____ of _____ Study

Ethical Review Checklist

The study reviewed considered the following:

- ___ Physical Safety of Human Subjects
- ___ Psychological Safety
- ___ Emotional Security
- ___ Privacy
- ___ Written Request for Author of Standardized Instrument
- ___ Coding of Questionnaires/Anonymity/Confidentiality
- ___ Permission to Conduct the Study
- ___ Informed Consent
- ___ Citations/Authors Recognized

Results of Ethical Review

- ___ Approved

___ Conditional (to provide the Ethics Committee with corrections)

___ Disapproved/ Resubmit Proposal

Ethics Committee (Name and Signature)

Chairperson _____

Member's _____

APPENDIX III

INFORMED CONSENT

I am giving my consent to be part of the research study of Mrs. Maymuna Abdulkadir Mohamed that will focus on information system adoption and performance, a case study in selected private telecommunication companies in Bosaso, Puntland, Somalia.

I shall be assured of privacy, anonymity and confidentiality and that I will be given the option to refuse participation and right to withdraw my participation anytime.

I have been informed that the research is voluntary and that the results will be given to me if I ask for it.

Initials: _____

Date _____

APPENDIX IVA

FACE SHEET: PROFILE OF THE RESPONDENTS

Gender

- i. ____ Male
- ii. ____ Female

1. Age

- a) ____ 20-29 years
- b) ____ 30-39 years
- c) ____ 40-49 years
- d) ____ 50-59 years
- e) ____ 60 years and above

2. Marital Status

- a) ____ Single
- b) ____ Married
- c) ____ Widow

3. Educational Level

- a) ____ Certificate
- b) ____ Diploma
- c) ____ Bachelors
- d) ____ Masters
- e) ____ PhD

4. Years of Experience

- a) ____ 0-1 years
- b) ____ 2-3 years
- c) ____ 4-5 years
- d) ____ Above 5 years

APPENDIX IVB **QUESTIONNAIRES**

Direction: Please respond to each item by using the scoring guide below. Kindly write your best choice on the space before each item. Be honest about your options as there are no rights or wrong answers.

Score	Response Mode	Description
4	Strongly Agree	You agree with no doubt at all
3	Agree	You agree with some doubt
2	Disagree	You disagree with some doubt
1	Strongly Disagree	You disagree with no doubt at all

INFORMATION SYSTEMS ADOPTION

	SDA	DA	N	AG	SAG
RECRUITING					
The organization adopts information system for recruiting					
The adoption of information systems helps the organization to select the right candidate for the right job.					
PLANNING					
The organization adopts information system for planning					
The adoption of information system helps the organization to take quicker decisions.					

COORDINATING					
The organization adopts information system for coordinating					
TRAINING					
The organization adopts information system for training					
Trainings offered by the organization are high tech					
Information about trainings are kept in computer for later use					

PERFORMANCE

GOOD REPUTATION					
The organization is praise by customers for good IT services.					
POPULATION OF CLIENTS					
The clients of the organization is increasing after the adoption of the information systems					
The organization always strive for business excellence and overall customer satisfaction at all times					
EMPLOYEES SATISFACTION					
you as an employee are satisfied with the organizations performance					

The team members of the organization are allowed to provide suggestions for improvements freely					
EMPLOYEES PRODUCTIVITY					
The employee productivity has increased after the adoption of the information system					

RESEARCHER'S CURRICULUM VITAE

To document the details of the researcher, his competency in writing a research and to recognize his efforts and qualifications, this part of the research report is thus meant.

Personal Profile

Name: Maymuna Abdulkadir Mohamed

Gender: Female

Nationality: Somali

Date of Birth: 1992

Educational Background

Bachelor of Computer Sciences (E.A.U: East Africa University), Punt land. (2011)

Secondary (Hamdan Bin Rashid Secondary School) Bosaso, Puntland, Somalia (2008)

Primary (Shafici Primary School) Bosaso, Puntland, Somalia (2005)



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