ADDIS ABABA UNIVERSITY

COLLEGE OF NATURAL SCIENCES

SCHOOL OF INFORMATION SCIENCE

INFORMATION SYSTEM OUTSOURCING RISKS IN BANKING SECTOR OF ETHIOPIA

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BY KENNO LEMESSA

October 2016

Addis Ababa, Ethiopia

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A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDISABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN INFORMATION SCIENCE

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Declaration

I declare that this thesis is my original work and has not been presented for a degree in any other university.

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This thesis has been submitted for examination with my approval as a university advisor.

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October 2016

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List of Abbreviations

BPO- Business Process Outsourcing

ERP- Enterprise Resource Planning

ECAR-EDUCAUSE Center for Applied Research

HLI- Higher Learning Institutes

IS-Information System

IT-Information Technology

ROI- Returns on Investments

SLA-Service Level Agreement

Abstract

Outsourcing, a management practices strongly consolidated within the area of Information Systems, is currently going through a stage of unstoppable growth. The aims of this research are to determine the IS services that are currently being outsourced and to describe the main reasons which may lead banks to adopt Information Systems Outsourcing, analyze the associated risks that IS clients are likely to face and risk management practice in the case of the banking sector in Ethiopia. The researcher used a quantitative research method and as data collecting instrument questionnaires. The findings from this research showed that network service is the major common IS Services' activity that is being outsourced, and ATM maintenance is the second highly outsourced IS services. Website hosts are the third mostly outsourced IS services in the banking sector. Help desk support is the least outsourced services with none of the respondents indicating that their banks are outsourcing the services.

Improve service quality was cited by the respondents as the major reason for outsourcing IS services and the second major reason was to access better skill and expertise. Reduce the cost was the least rated of the reason to IS outsourcing. From the findings' access and security risk was major risk that rated by the respondents. The second risks rated by the respondents were loss of control risk, and the third risk was a loss of innovative capacity, i.e. the bank, loss capability of creativity on new things. Reputational risk was the least considered as a risk in IS outsourcing. As risk management in the banks, it was revealed by most of the respondent in the banks have structured risk management procedures or guidelines for the outsourcing of IS in place. Banks have a controlling mechanism to check the performance and service quality of the service provider and also have the procedure that follows to measure the success/failure of outsourced information systems.

In the bank, the IS manager has a poor communication to their employees, i.e. the risks they faced or challenged by outsourced IS recognition are not appropriately communicated to employees in the banks. The bank has not a properly process to audit the service provider to assess its compliance with the policies, procedures, security controls and regulatory requirements. Protecting confidential data and access management in the banks was considered to be important, so according to the respondents, there is a high protection of the sensitive data and there were proper access managements are reviewed regularly basis in the banks and the risk that appropriate exit strategies are in place.

Keywords: outsourcing, IS outsourcing, reason to outsourcing, risks associated to outsourcing and risk management

Chapter one

Introduction

1.1 Background

Today's business environmental, organizational, and technological factors require businesses to operate efficiently and effectively in order to be competitive. Toward those goals, managers employ many strategies to improve productivity, including standardization, automation, and business process reengineering. Additionally, they restructure the business organizations to be lean and flat so that they can become flexible in responding quickly to changes in environment and customers' needs. Outsourcing is another valuable strategy managers use to achieve the above goals (Carpenter and Agrawal, 2007).

The term "Outsourcing" is the process of shifting or externalizing tasks and services previously performed in-house to outside vendors (Beaumont and Sohal 2004). "Outsourcing refers to the use of an external provider of goods or services instead of having recourse to internal resources to provide the same goods or services" (radu and Ramona, 2010) ". In the IT world, outsourcing means turning over a firm's computer operation , network operations, or other IT functions to a provider for a specified time " (McNurlin and Sprague, 2006). It reflects the use of external agents to perform one or more organizational activity (Kehal and Singh, 2006), and it is not specific to Information systems. As a result, numerous definitions for the term "outsourcing" have been stated in the past. However, outsourcing in its most basic form was conceived as, contracting out the procuring of service or products from an outside supplier or manufacturer rather than having them provided by in-house facilities (Aubert et al. 1998).

In the case of Information Technology/Information Systems (IT/IS), outsourcing concerns turn over all or part of an organization's IS operations to outside contractors (O'Brien, 1996; Yang & Huang, 2000). Benefits of outsourcing are cited as including reduced costs, better service and access to new technology, as well as enabling staff to focus their efforts on higher-value work thus improving output (Ketler & Walstrom, 1998; Lacity &

Willcocks, 1998). As organizations strive towards greater competitiveness, flexibility and to improve their overall performance, emphasis has shifted from other (non-core) corporate activities to greater focus on business processes likely to bring competitive advantage (Ngwenyama & Bryson, 1999; Quinn, 1999). Outsourcing is thus increasingly seen as a strategy that can be used by organizations to leverage skills and competencies of a definable pre-eminence. Consequently, organizations are able to choose to outsource activities for which they do not have a critical need, or for which they lack the special capabilities to do themselves (Quinn & Hilmer, 1994).

Outsourcing has emerged as the most powerful tool for companies seeking to stay in today's competitive business environment. Its concept and practice is an infant in the Ethiopia context but a few years ago some organizations in Ethiopia tried to outsource some of their non-core functions, and commercial bank of Ethiopia is one of these organizations (Maru,2015). Analyzing outsourcing risk and taking appropriate risk mitigation actions in any outsourcing project is important (Lin et al., 2007). The absence of proper risk management plans organization and project managers spend time and effort in correcting avoidable problems, expectations around success and failure remain arbitrary, and decisions are not circumspect or holistic in terms of long term impacts (Smith, McKeen, Staples, 2001).

According to Slaven and Damir (2015), Outsourcing of banks' information systems has become well established and globally spread, but beyond benefits, it carries risks which are of importance to banks and their clients as well as to banking regulators and supervisors. Risk analysis is the first important contributor towards outsourcing success (Aubert et al. ,2002) . The researcher is interested in the aspect of information systems outsourcing risks and management as appreciated.

1.2. Statement of the Problem

The last few years have brought significant changes to the functioning of banks. One of the most important ways of adaptation to the changing economic environment that reduces operational costs is outsourcing. Outsourcing of business processes is one of the key outcomes of the technological advancement (Peritah, 2014). Business Process Outsourcing (BPO) has been suggested as one of the biggest area of growth in the outsourcing market

and has been a rising trend in outsourcing since the end of 1970s. Even so, many organizations are still reluctant to outsource business processes that are part of their core business (Kakabadse and Kakabadse, 2002). Most common type of business process outsourcing, information technology outsourcing, started to become more popular in the 1980s. Due to its IT-intensive business processes the potential for outsourcing appears to be particularly high in the banking industry. This is further enhanced by the fact that most of the data in the banking sector are in digital form coupled with increased use of internet (Gewald and Dibbern, 2005)

Outsourcing is one of the most common trends in today's world business environment even though it is a new practice in Ethiopia. Organizations have different reasons for outsourcing the parts of functions in their operation. In many cases, the aim is to outsource non-core activities in order to gain competitive advantages by transferring such functions to specialist companies or vendor with the required capabilities and the necessary experience. Hence it allows time and space for the company to plan in the long term and run its core functions of the organization. Even though outsourcing results several benefits for organization, it has also problems or risks if the process is not managed in the proper way.

Information Systems are important for the operation of banking industry in modern society. Moreover, a wide range of research confirms the status of Information Systems outsourcing as a growing, increasingly global phenomenon, which also covers a wide range of IS or IT related functions (Antonio, 2011). Common Information Systems outsourcing practices include IT infrastructure outsourcing (servers, communication networks, etc.), business process outsourcing (data entry, data process, etc), application development outsourcing, system integration outsourcing and so on (Li and Li, 2009). Software development and hardware maintenance constitute a well- established and fast growing industry (Karyda et al., 2006). In spite of that, outsourcing is not a risk free activity. While practicing outsourcing, organizations may face problems and unexpected risks associated with outsourcing. Loss of control over the quality of the software and the project's timetable, reduced flexibility, loss of strategic alignment, and lock-in are some of the notable risks associated with IS outsourcing (Adeleye, 2002).

According to Mulat (2007), one of the main risks that are incurred during outsourcing are clients leave the supply of the product or service in the hands of someone whom they

cannot control, contrary to controlling their own supply. Saravanja (2006), mentioned that other major failures in outsourcing is a breakdown in the overall relationship between the stakeholders in the outsourcing agreement, which includes loss of shared vision , operational concern dominant, lack of good communication and customers are complaining not getting sufficient attention from provider. Therefore, one of the core issues of this research is to identify those risks mentioned in the above and reduced though proper managements within banking industry in Ethiopia while practicing Information System outsourcing.

As noted in a report by Hall (2003), half of all outsourcing agreements fail because firms run risks by not performing appropriate analyses. For example, some organizations consider outsourcing as a means of migrating risk (e.g., the outsource provider takes on the risks of investing in human resources, technology, etc., while the client firm avoids those risks and simply pays a fee for the services). According to Greaver (1999), Chorafas (2003), and Kern and Willcocks (2001) report dozens of differing types of risk and the possible range of concern managers should be mistrustful of in undertaking outsourcing projects. While recognizing that some risks are valid and some are not depending on differing situations (Bahli & Rivard, 2005).

IS outsourcing, as a management strategy, entails both risks and benefits. It is impossible to run a business without taking risks. In order to obtain certain benefits you have to expose yourself to risks and management of outsourcing. We seek, therefore, not to avoid all risks, but to manage those we willingly assume.

The private and government banks are selected for this research because it is a big sectors in Ethiopia and has a good experience in using IS/IT and has better resources for implementing IS/IT outsourcing. Furthermore, the researcher initiated to pick the banks due to some bank is currently involving itself IS/IT outsourcing as IS management strategies. The issue of IS/IT outsourcing and the associated risk is not yet studied in relation to how it is being managed in Ethiopian banking sectors making the area worth studying and needs investigation. The risks and managing associated with outsourcing and their causes are not identified and this study is a step towards this. Specifically, it is meant for identifying how bank is managing its outsourcing tasks, risks, and why they outsource the IS function. This study makes important contribution to financial services research in

banking sector. To the best knowledge of the researcher, there is no adequate empirical research on risk management of information systems outsourcing.

1.2.1 Research Question

- What are the reasons for outsourcing the IS services?
- Which Information system functions are outsourced in Ethiopian banking sector?
- What are the risks or problems associated with outsourcing in the information systems services?
- How do banking sectors in Ethiopia handle risk in relation to IS outsourcing?

1.3. Objective of the study

1.3.1 General Objective

The primary objective of this research is to investigate the risks associated with information system outsourcing and the management of these risks within the context of Ethiopian banks.

1.3.2 Specific Objective

- To identify the reasons of outsourcing information system services in banking sectors
- Identifying those Information system functions that Ethiopian banking sectors are willing to outsource
- To identify the risks or problems of outsourcing information system services in banks.
- To determine handling of risks related to information system outsourcing

1.4. Scope and Limitation of the study

This paper specifically focuses on the risks associated with information system outsourcing and the management of these risks in banking sector. This study considers only the customer's side that is outsourcing banks due to different reasons. One of these reasons is that outsourcing risks occur mostly on the customer's side. To use time and other resources adequately, it was not possible to include all banking sectors in this study. Thus, considering available time and budget, and also to make the research more manageable and controllable only the following nine banks: Commercial Bank of Ethiopia, Dashen Bank, Awash International bank, Wegagen Bank, Nib international bank, Oromia international bank, United bank, Development bank of Ethiopia and cooperative bank of Oromia are considered.

1.5. Significance of the study

The study of this research is to investigate the risks associated with information system outsourcing and the management of these risks within the context of Ethiopian banks. The output of this paper is showed information systems outsourcing risks and the management of these risks in the banking industry. In the banking industry outsourcing information systems may get benefits or face different risks. This study examines such problems in outsourcing information systems; identify the reasons for outsourcing, identifying risks of outsourcing and risk management. Hence the study has showed that bank in general and similar business organizations in particular to learn lessons from the finding and recommendations reported in this study which prevents it from repeating the same mistakes. Furthermore, it was used as a step for anyone who wants to conduct further study in the area of IS/IT outsourcing in the country as the subject is emerging as a new approach for information systems management. In addition to this other organizations in Ethiopia can learn the experiences of IS/IT outsourcing from this research.

1.6 Organization of the Paper

The paper is organized in to five chapters each dealing with different ideas for one common purpose. In chapter one; background of the study, statement of the problem, objective of the study both general and specific objectives, research questions, significance of the study, scope of the study and limitation of the study were included. In chapter two, reviews of theoretical and empirical literatures were included to support the study. In chapter three; research design and methodology was briefly stated including the research type, sampling method, sample size, data collection instrument, pilot test, method of data analysis and research model were included. In chapter four a brief analyses, interpretation and discussion of data were presented. Under chapter five general summary of the paper, final conclusion, possible recommendations and further research area were included.

CHAPTER TWO

LITERATURE REVIEW

The purpose of this chapter is to provide a review of the literature in IS outsourcing and IS outsourcing risk practices and management.

2.1 What is outsourcing?

Different scholars defined the term of outsourcing in different ways based on the type of function outsourced. The following are some of the definitions and terms of outsourcing explained by scholars.

Lei and Hitt (1995) define outsourcing as “reliance on external sources for manufacturing components and other value-adding activities". Perry (1997), focused on employment, defining outsourcing as: “another firm’s employees carrying out tasks previously performed by one’s own employees”.

Outsourcing is “the strategic use of outside resources to perform activities traditionally handled by internal staff and resources’’ (Handfield, 2006). “Outsourcing refers to the use of an external provider of goods or services instead of having recourse to internal resources to provide the same goods or services” (radu and Ramona, 2010).

The term Outsourcing is "the process of shifting or externalizing tasks and services previously performed in-house to outside vendors" (Beaumont and Sohal 2004 cited in Beaumont 2006). The Committee of European Banking Supervisors (CEBS) defines outsourcing as "an authorized entity’s use of a third party to perform activities that would normally be undertaken by the authorized entity, now or in the future". According to Duening and Click (2005), Business process outsourcing is “the movement of business processes from inside the organization to an external service provided”.

According to Aran and Patel (2005), Business outsourcing is “the contractual service of transferring one or more businesses process to a third party provider, where the latter takes over the management, ongoing support and infrastructure of the entire application or process”

Generally, it is clearly found that they come to a common understanding in which they agree that outsourcing could be summarized as transfer of job to a third party. As a result, so that organizations focus on their core business activities while handling non-core activities to others who are specialist in order to increase job efficiency and cost reduction (Maru, 2015).

2.2 Information System Outsourcing

The term “Outsourcing” is the process of shifting or externalizing tasks and services previously performed in-house to outside vendors (Beaumont and Sohal cited in Beaumont, 2006). In its strongest form it means, passing ownership and control of functions previously performed in-house to an outside contractor (Beaumont and Sohal 2004).

IT Outsourcing as an "act of delegating or transferring some or all of the IT-related business processes, internal activities, and specific services to external providers (vendors) who develop, manage, and administer these activities upon agreed performance standards and deliverables according to a contractual agreement" (Alexandrova,2012).

“Outsourcing refers to the use of an external provider of goods or services instead of having recourse to internal resources to provide the same goods or services” (radu and Ramona, 2010). “In the IT world, outsourcing means turning over a firm’s computer operation, network operations, or other IT functions to a provider for a specified time” (McNurlin and Sprague, 2006). It reflects the use of external agents to perform one or more organizational activity (Kehal and Singh, 2006), and it is not specific to IS. As a result, numerous definitions for the term “outsourcing” have been stated in the past. However, outsourcing in its most basic form was conceived as, contracting out the procuring of service or products from an outside supplier or manufacturer rather than having them provided by in-house facilities (Aubert et al. 1998).

IT managers have outsourced a variety of IT-related functions and activities, including development, maintenance, helpdesk activities, storage, database servers, data entry, and even strategic IT planning. According to Goldsmith (2003), the most commonly outsourced functional area is information technology (IT) which included all aspects of management information systems.

Lackow's (2001) survey of the IT outsourcing industry revealed IT provider service categories included user support, voice network management, disaster recovery, software development, data network management, software maintenance, data center operations, IT strategy and planning, support services, application hosting, and business processes. The survey predicted IT outsourcing would continue and grow in importance. This prediction was confirmed by a later follow-up survey by Goldsmith (2003). This latter survey confirmed the prediction by estimating 79% of the U.S. firms outsourced IT and the current outsourcing industry provides a full range of services from small-scale projects to complete business process solutions (Goldsmith, 2003).

However, though there are small different aspects considered in all the definitions, there seems to be a general agreement about outsourcing is a process getting done IT functions by third parties. To list a few of them:

"Information System (IS) Outsourcing means that the physical and/or human resources related to one organization's Information Technologies (ITs) are supplied and/or administered by an external specialized provider" (Enrique et al, 2002).

"Information system (IS) or information technology (IT) outsourcing can be defined as the transferring of an IS/IT function that was previously carried in-house, to a third party provider" (Mulat, 2007).

Information systems outsourcing, or IS outsourcing, is "the practice of turning over part or all of an organization's IS functions to external service providers" (Grover and Cheon 1996 cited in Li and Li, 2009). From the firm's perspective, IS outsourcing offers several advantages, such as reducing or stabilizing overhead costs, gaining cost advantage over the competition, concentrating on core activities and organizational specializations, providing flexibility in response to changing market conditions, and reducing investment in high technology (Kliem, 1999; Lacity & Hirschheim, 1993; Quinn, 1999).

Brandas, Ioan and Brandas, Claudiu (2007) also emphasized that the appeal to an outsourcing operation in order to keep up with the technological innovations is often motivated by a financial reason. Even though, only a small amount of IS outsourcing studies have been conducted and reported in developing countries, a study of IS outsourcing in the public sector in Kuwait has found the reasons for outsourcing to be cost

savings and lack of required skills (Khalfan and Gough , 2001).

2.3 Information Systems Outsourcing Trends In Banks

According to Barako and Gatere (2008), outsourcing of business processes is one of the key outcomes of the technological advancement due to its IT intensive business processes the potential for outsourcing appears to be particularly high in the banking industry. This is further enhanced by the fact that most of the data in the banking sector are in digital form coupled with increased use of internet (Gewald and Dibbern, 2005). Financial and costs benefits are often put forward as the reasons why organisations decide to outsource and finding from a case study of an organization in the UK banking sector suggest that political perspectives, as well as human and organizational issues influenced the bank's strategic decision-making to outsource certain aspects of its business (Baldwin, Irani and Love,2001).

As stated by Slaven and Damir (2015), Outsourcing of banks' information systems has become well established and globally spread, but beyond benefits, it carries risks which are of importance to banks and their clients as well as to banking regulators and supervisors. Risk analysis is the first important contributor towards outsourcing success (Aubert et al., 2002).

"Banks have adapted to changes in the environment, quickly cutting the costs of their activities, Since staff costs are a very important part of the operating costs of banks, during the crisis, these reductions were popular"(Kazmierczyk and Macholak,2014). Another way to reduce operational costs is outsourcing. For some banks, outsourcing has become a means to reduce costs, whereas for others it was used to improve management. As stated by Smojver and Blazekovic (2015) Outsourcing of banks' information systems has become well established and globally spread, but beyond benefits, it carries risks which are of importance to banks and their clients as well as to banking regulators and supervisors.

Outsourcing is increasingly being used as a means of both reducing costs and achieving strategic goals Basle Committee (2005). While IT outsourcing has profound benefits, it equally expose firms to serious risks. Beasley, Bradford and Pagach (2004) summarise

severity of outsourcing risks as follows: "the mere occurrence of one incident, such as an IT shutdown, can exponentially increase the enterprise's risks...". Beasley et al., (2004) suggests that outsourcing poses multitudes of risks to a numbers of firm's functions such as finance, human capital, IT and operations.

Outsourcing part of the banks' operations is of great significance to banking manager as well as to the banks. "Significant problems in the provision of outsourced services might seriously impact key supervisory goals: depositors' protection and reduction of systemic risk that failure of one key institution will significantly disrupt other important institutions" (Smojver and Blazekovic, 2015, pp.260).

According to the survey conducted by European Central Bank in 2004 show that banks are aware of outsourcing risks, including loss of control over the activities or services being outsourced, undesirable dependency on the service provider, loss of internal skills, loss of flexibility, high costs/cost transparency, decline in quality/competitive advantage, cultural-social problems, technical constraints, and information protection failure.

In 1999, Federal Reserve Bank of New York conducted survey on banking industry practices for outsourcing arrangements. Findings suggest that banks outsource financial services for a number of reasons, such as, enhanced performance; costs reduction; access to superior expertise; and strategic reasons. In addition, the study indicates that although there are many benefits derived from outsourcing of financial services, the arrangement give rise to potential risks. The risks identified are: strategic, reputation, credit, compliance, transaction and country risk.

Similarly, in 2004 Federal Reserve Bank of San Francisco, conducted survey on outsourcing by financial service firms and notes a number of motives for outsourcing, namely, operational efficiency; efficient use of resources; and quick and reliable service delivery. Similarly, a survey conducted by European Central Bank in 2004 reveals that although the benefits of outsourcing are evident, in practice, many banks believe that outsourcing introduces new challenges and risks. The study highlights the benefits of outsourcing, suggesting; cost reduction; access to better technology and infrastructure and strategy of focusing on core activities; economies of scale which leads to improvement in synergies achieve diversification benefits or streamline services; focusing on core

activities; free scarce resources; quality services; and flexibility. As with US studies, the European study also reveals several risks associated with outsourcing, namely, operational, legal, strategic risk, country risk, reputational risk, loss of flexibility, loss of control and cultural/social problems.

Pujals (2004) conducted a study on offshore outsourcing in the European Union financial services industry. The study indicates that banking institutions may choose to outsource certain activities for various motives. Some of the motives cited are: cost reduction, access to new technology, focus on core activities, improvement of quality of services and greater flexibility. In addition, the study identified the following risks associated with outsourcing of financial services: loss of control over service, operational risks, loss of internal skills, loss of flexibility, cultural and social problems, technical constraints, decline in quality and competitive advantages.

2.4 Mostly Outsourced Information System Functions

Information system outsourcing has experienced remarkable growth in recent years. The rapid growth of IS outsourcing has received extensive, on-going, worldwide business and information technology attention (Walker 1996). Information systems outsourcing deals have grown in size (Currie 2000), complexity (Marchand and Jacobsen 2001), and significance (Loh and Venkatraman 1992).

According to Monetary Authority of Singapore (2013) Technology risk management guidelines, IT outsourcing comes in many forms and permutations. Some of the most common types of IT outsourcing are in systems development and maintenance, support to DC operations, network administration, disaster recovery services, application hosting, and cloud computing. Outsourcing can involve the provision of IT capabilities and facilities by a single third party or multiple vendors located in Singapore or abroad. Outsourcing started with companies outsourcing physical parts (Quinn, 2009). According to study conducted by Outsourcing Institute in 1997, outsourcing is focused on things like information technology (30%), human resources (16%), marketing and sales (14%), finance (11%) and administration (9%) (Porter, 2000). Call centers, medical diagnosis, financial services, tax preparation and software development services are also prime

candidates for outsourcing (Kumar & Eickhoff, 2005). The Global 2010 survey on financial services outsourcing (The Conference Board and Duke Offshoring Research Network, 2010) shows that financial institutions around the world plan to further proliferate outsourcing especially in the area of IT and that IT operations are the most offshored activity - around 34% of all offshoring. As a comparison, 9% of total offshoring relates to software development.

According to Reid (1996), any part of information system areas can be outsourced including: provision of facilities, utilities, applications software; systems software; personnel; consulting services; systems integration; development of new programs and systems; live system operation, management and control; communications equipment, software and interfaces; daily and periodic processing and reports; responsibility for troubleshooting; physical security; data and program security; disaster recovery capabilities; data entry; maintenance; PC installation of hardware, software, and modifications; and help desk. Though IS/IT outsourcing involves these potential areas (Kini, 2007) the most commonly outsourced functions are application/software development and help desk. Whereas, a more recent survey done by Computer Economics (2009) shows that application development accounts 33% followed by data centre operations (28%) of the organizations investigated, as indicated in the following Figure.

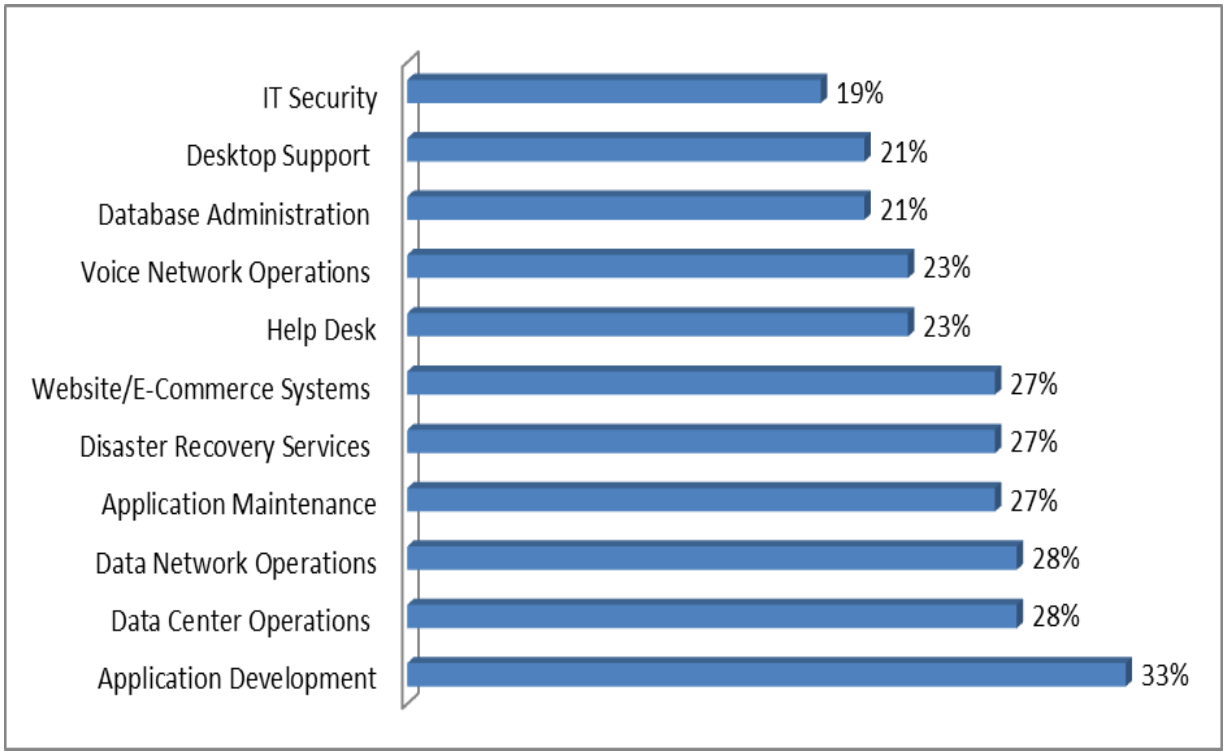


Fig. 1 percentage of organizations that use outside service providers Source: Computer Economics, 2009

Financial cost and benefits are often put forward as the reasons why organizations decide to outsource. According to Baldwin, Irani and Love(2001), case study from an organization in the UK banking sector that was motivated to outsource aspects of its information technology/information system (IT/IS) and his findings from the case study suggest political perspectives, as well as human and organizational issues influenced the bank's strategic decision-making to outsource certain aspects of its business.

The type of IT/IS functions that companies are choosing to outsource continues to both change and develop. Currently in the UK, IT/IS operations dominate the outsourcing market, with hardware maintenance as the most outsourced service (about 70%), followed by mainframe or data center management (38%), and PC support, network management (25%) (Baldwin et al., 2001). Desktop outsourcing or desktop managed services is a highly cost-driven and commodity-like segment that is increasingly addressed by both international and local vendors (Baldwin, et al., 2001).

According to Baldwin et al. (2001), Business process outsourcing remains increasingly popular in the European outsourcing market; however, for the most part, this market is still relatively new. The capabilities and expertise needed to address this market are quite different from traditional IT/IS outsourcing as BPO involves a substantial component of non-IT/IS activities and, accordingly, the transfer of non-IT/IS staff. Outsourcing of IT/IS is currently a pan-European phenomenon as organizations face pressures due to global competition, deregulation, technological innovation and public sector budget cuts(Baldwin et al., 2001). It would also appear that the IT/IS outsourcing phenomenon is being embraced by organizations in other continents such as Southeast Asia as they too seek to become more competitive and flexible in their business operations (Yang & Huang, 2000).

Research suggests that the express reasons for IT outsourcing in Ethiopia are improving service level quality, acquiring innovative ideas, freeing resource and time to focus more on core business, enhancing flexibility to meet changing business conditions, and perceived lack of internal expertise (Mulat, 2007). In general, the most outsourced IT functions in Higher Learning Institutes (HLI) are IT infrastructure, application management, and e-learning, while business process operations and distributed services are the least likely IT functions to be outsourced by the HLIs (ECAR, 2002).

2.5 Information System Outsourcing reasons

Kazmierczyk and Macholak (2014) studies concluded that the main reasons for outsourcing are cost reduction, risk reduction, striving for elasticity of resources, increasing of the quality of resources and access to resources. In 1999, Federal Reserve Bank of New York conducted survey on banking industry for outsourcing. According to the survey suggests that banks outsource financial services for a number of reasons, such as, enhanced performance; costs reduction; access to superior expertise; and strategic reasons.

Karyda et al. (2006) cited in Mulat (2007) argued that, the reasons for which companies turn to IS outsourcing are primarily financial which include expectations of improved rate of returns on investments (ROI), reduced cost and economies of scale .

In Ethiopia, the most cited reason behind IT outsourcing is not cost saving. According to the survey done by Mulat (2007) the most expressed reasons for IT outsourcing are improving service level, acquiring innovative ideas, allowing more focus on core business, increase flexibility to meet changing business conditions, and lack of internal expertise, while cost savings was the least expressed reason for outsourcing IT services.

As stated by Antonio (2011) by outsourcing there IS/IT functions organizations also aim to: have improved access to specialized knowledge and best-practices, receive better quality services, have increased business continuity capability in the case of internal incidents; and achieve flexibility with regard to technology. Moreover, Maria karyda and Evangelia Mitrou (2006) added that companies expect to gain increased competitiveness and a chance to focus their efforts and use their resources on their core competence.

According to Gonzalez, Gasco and Llopis (2008), the possible reasons for leading firms to outsource their IS are the followings:

Focusing on Strategic Issues: The outsourcing of the most routine activities allows computer experts to dedicate their time to key IS activities. so, clients can concentrate on their business and the outsourcing company assumes the responsibility to update both hardware and software and to meet the business requirements specified in the outsourcing contract.

Increasing Flexibility: The great change experienced by technology in recent years gives many firms a chance to obtain a considerable advantage from outsourcing. Business organizations can increase their flexibility through a continuous redesign of their contracts that will allow them to meet their information needs at any given time. Outsourcing provides a large degree of flexibility in the utilization of IT resources and makes it easier to face business level volatility, as the provider is left to deal with fluctuations in IT workloads.

Improve the Quality: Outsourcing can Improve the Quality delivered by IS services. For example, the provider can access more advanced technologies and count on more motivated staff and better management systems in order to be able to achieve a better service coordination or, simply, is more strongly committed than the internal staff.

Get Rid of Routine Tasks : which are very time-consuming in IT management. Outsourcing not only allows firms to get rid of routine tasks, but also, if the IS function is seen as something difficult to manage often regarded by the top management as a 'headache', outsourcing can remove or minimize a function that is considered clearly problematic.

Facilitating Access to Technology: Outsourcing brings client firms advantages related to technology. The efficient use of outsourcing will most probably reduce the need to make investments in mature technology, simultaneously increasing the availability of resources related to new technologies for the client.

Reducing the Risk of Obsolescence: It is precisely the fast pace of change in the field of technology that places firms in front of a problem: making investments on new technologies. This problem can equally be minimized with technological outsourcing, since the technology accessed by the client is owned by the provider, which means that this risk is assumed by the latter and not by the former. Firms can increase their level of flexibility through a process of continuous redesign of the contracts that will help them to cover their information requirements.

Saving Staff Costs: Outsourcing paves the way to a more specialized IT management, as the provider firm finds itself in a better position to select, train and manage its technological staff; in this way, clients can have at their disposal high-level specialists without them having to be permanent members of their staff. Clients have in mind a staff

reduction which will mean significant cost savings. A permanent workforce with a high-level, up- to-date training is likely to end up becoming too expensive for many companies. This is one of the strongest reasons that have led many organizations to adopt global or offshore outsourcing.

Have Alternatives to the IS staff: It is undeniable that, thanks to outsourcing, a firm does not have to depend exclusively on its internal IS resources.

Saving Technology Costs: this is also one of the reasons that authors have most frequently mentioned. Service providers are exposed to a wider variety of problems and experiences associated with IS, which is why a greater volume of knowledge and skills can be obtained that will help to solve these problems. Likewise, service providers dedicate all their capacity to the provision of IS services, as a result of which greater economies of scale and scope can be obtained. It is assumed that part of these economies are transferred to the client through lower prices in the achievement of the same services through outsourcing and through the work of the IS internal department. Outsourcing equally makes it possible to turn fixed costs (to maintain an IS department) into variable ones (depending on client needs).

Following the fashion: firms decide to adopt outsourcing in order to copy the success of other organizations that have already outsourced.

2.6 Risks Associated With IS Outsourcing

The decision to outsource IS functions involve multiple risks. Researchers increased their focus on the field of risk management in IS outsourcing from 1998 (Dibbern et al., 2004). According to the survey conducted by European Central Bank in 2004 reveals that although the benefits of outsourcing are evident, in practice, many banks believe that outsourcing introduces new challenges and risks.. As with the studies reveals several risks associated with outsourcing, namely, operational, legal, strategic risk, country risk, reputational risk, loss of flexibility, loss of control and cultural/ social problems.

As noted in a report by Hall (2003), half of all outsourcing agreements fail because firms run risks by not performing appropriate analyses. For example, some organizations consider outsourcing as a means of migrating risk (e.g., the outsource provider takes on the risks of investing in human resources, technology, etc., while the client firm avoids

those risks and simply pays a fee for the services). Yet Natovich (2003) reports that while some risks are absorbed by the outsource provider, the client assumes the set of risks inherent in the outsourcing arrangement in addition to outsource provider assumed risks. Greaver (1999) and Kern and Willcocks (2001) report dozens of differing types of risk and the possible range of concern managers should be wary of in undertaking outsourcing projects, while recognizing that some risks are valid and some are not depending on differing situations (Bahli & Rivard, 2005).

Meisler (2004) reports international outsourcing fails 50% of the time because organizations have not considered the risky nature of this type of international business decision. After the fact, some firms today are reversing their international outsourcing decision, bringing it back to the country of origin (Metz, 2004). This is partially due to the perceived failure of outsourcing to achieve the expected gains. When managers set outsourcing goals of 75% cost reduction (Meisler, 2004), and then receive a 30% or 40% reduction, they undoubtedly view the outsourcing strategy as a failure, when in fact it may be a successful strategy for a client firm. It should be noted that in the previously Goldsmith (2003) survey of executives, the top five challenges for off-shore outsourcing include understanding cultural differences and dealing with political uncertainty (rated the top reason), evaluating contract performance, client firm's ignorance of what the outsource provider is doing for them, accountability and the expenses of travel. These reasons, which find their basis in poor analysis and understanding of outsourcing, represent a substantial barrier to growth in outsourcing.

The other reasons of outsourcing project might fail because of poor selection of the vendor, mismanagement of the outsourcing contract, inferior performance by the vendor, lack of acceptance by the end consumer, or other reasons (Quinn & Hilmer, 1995). It might also be that outsourcing may have higher costs than in sourcing the same function (King, 2005; Mears & Bednarz, 2005).

If the company outsources an activities, there is a risk on knowledge and skills i.e. it loses inevitably some knowledge and skill (Aron et al.,2005). When a company stops to conduct an activity, knowledge and skills related to it fade away. However, losing know how does not happen overnight instead it may happen over the years (chen, 2004).

As stated by Gonzalez et al. (2008) together with the multiple reasons, there is also various risks, since it is precisely the same reasons driving a firm to outsource certain that make it also difficult for the provider to perform them, such risks are Provider Staff Qualification, Lack of Compliance with the Contract by the Provider, Dependence, Loss of Technical Knowledge (clients gradually lose their understanding of the service over time), Provider's inability to adapt to the New Technologies, Unclear Cost-Benefit Relationship, Security, Irreversibility of the Decision to outsource IS, Staff Problems, and Possible Opposition of their Staff.

According to Earl (1996), this is probably a sensible approach to balance efficiency and effectiveness in providing IT services. However, the author argues that companies should first ask why they should not insource IT services. His perspective is based on an analysis of eleven risks of outsourcing that he identified in discussions with both buyers and vendors in the IT outsourcing marketplace. the eleven risks of outsourcing are such as Possibility of Weak Management, Inexperienced Staff, Business Uncertainty, Outdated Technology Skills, Endemic Uncertainty **(**IT operations and development have always been inherently uncertain), Hidden Costs, Lack of Organizational Learning, Loss of Innovative Capacity, Dangers of an Eternal Triangle(companies created a new role for intermediaries or interpreters between the user needs and the specialist one), Technological Indivisibility, and finally Fuzzy Focus means Outsourcing is essentially concerned with the supply side of IT. A real problem, then, with outsourcing is that it concentrates on the how of IT, not on the what. It focuses on the supply side, not the demand side. And because it occupies substantial management resources and executive time, it can unwittingly become another form of denominator management rather than revenue creation not a prescription for long-term success.

IS outsourcing is a managerial decision that entails various risks and problems (Gonzalez et al., 2005). That is why numerous authors have identified various risks associated with IS outsourcing practices. Similarly, IS managers and researchers traditionally defining risk only in terms of negative consequences. However, viewing risk as something more than a hazard is highly applicable to risk management in IS (Smith et al., 2001).

The risk of outsourcing has been appropriately classified into five types (Rouse and Corbitt, 2007), which are summarized below:

Types of risk	Possible Outcomes
Financial risks	Risks of cost overrun, resulting in less than expected savings
Performance oriented risks	Non receipt of service or receipt of service of lower quality.
Strategic resource risks	The risk of loss of organizational knowledge and competencies
Lock-in risks	Underperforming relationship with no alternatives to switch
Operational risks	Risks of IT services failure resulting in inadequate or unsatisfactory customer service, or loss of organizational resources

TABLE 1: Risk of Outsourcing and Possible Outcomes (Adapted from: Rouse and Corbitt,2007)

2.7 Risk Management

IS outsourcing, as a management strategy, entails both risks and benefits (Antonio,2011). It is impossible to run a business without taking risks. In order to obtain certain benefits you have to expose yourself to risk. We seek, therefore, not to avoid all risks, but to manage those we willingly assume (Legorreta and Goyal, 2007).

Outsourcing offers the benefits of lower cost, increased quality, and flexibility, but it also exposes an organization to significant vulnerabilities (Legorreta and Goyal,2007). These vulnerabilities, if not managed properly, can eliminate the benefits partially or totally.

Risk assessment should be carried out before the signing of the IS/IT outsourcing contract and risks should be managed carefully throughout the life of the contract (Legorreta and Goyal, 2007).

According to Stoneburner et al. (2002) defines the term risk management as a systematic application of management policies, procedures and practices to the tasks of identifying, analyzing, assessing, treating and monitoring risk. As stated that the Canadian Institute of Chartered Accountants, (Information Technology Advisory Committee, 2003) the process of risk management as the process whereby organizations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities. Therefore, as it can be simply understood from these two definitions, the underlying objective of good risk management is to add

maximum sustainable value to all the activities of the organization.

As stated by Benvenuto (2005) “The product or the service can be outsourced, but the risk cannot”. Therefore, the outsourcing organization should ensure proper controls are in place to deal with the identified risks. The outsourcing organization must ensure that staff involved with the outsourcing contract is able to evaluate and manage outsourcing relationships and performance in order to avoid the embedded contract mentality. Aubert et al. (2001) adopted a managerial perspective of risk and outline that a risk analysis requires questions to be addressed; a) what can happen? b) How likely is this outcome? c) If it does occur, what are the consequences? Using this definition, risk analysis compromises all activities taken to answer these questions. To perform these activities on a high quality level, appropriate staff has to be assigned for risk analysis. This takes up the proposition that building and retaining human resources capabilities is critical when managing risks.

The Monetary Authority of Singapore (2005) guideline publication on outsourcing risk management also stressed that organization's board and senior management would need to be fully aware of and understand the risks in an outsourcing and their impact on the institution. Furthermore, a framework for systematic risk evaluation should be established and it should include the following steps:

- Identification of the role of outsourcing in the overall business strategy and objectives of the institution, and its interaction with corporate strategic goals;
- Comprehensive due diligence on the nature, scope and complexity of the outsourcing to identify the key risks and risk mitigation strategies;
- Analysis of the impact of the arrangement on the overall risk internal expertise and resources to mitigate the risks identified; and
- Analysis of risk-return on the potential benefits of outsourcing against the vulnerabilities that may arise, ranging from the impact of temporary disruption to that of an unexpected termination in the outsourcing, and whether for strategic and internal control reasons.

According to Aubert et al. (2001), risk analysis is also another important contributor

towards outsourcing success. This becomes particularly present when identifying and implementing risk mitigation instruments such as the outsourcing contract. Therefore, a combined view of the activities associated with risk identification and assessment in the design of risk mitigation instruments can be contributed to an enhancement of the overall quality of an outsourcing deal.

Moreover, the risk management process not only includes identifying and assessing the risks in terms of its impact but also involves developing suitable mitigation strategies, monitoring and communicating to control the risks and deal with it proactively.

However, even if risk management is a central part of any organizations strategic management, because of the multi-faced nature of risks associated with IT a 'one size fits all' risk management guideline is not a good practice. This is more specifically difficult in IT outsource project risk management practice (Fabian et al., 2007). On the other hand, most of the literature on risk management is clear and unambiguous about the general steps of risk management and its importance in terms of risk identification, risk assessment and risk control (Smith et al., 2001). For the purpose of this research, these three general risk management steps (i.e. risk identification, risk assessment, and risk mitigation) are considered.

Risk identification determines what might happen that could affect the objectives of the project, and how those things might happen (Antonio, 2011). The risk identification process must be comprehensive, as risks that have not been identified cannot be assessed, and their emergence at a later time may threaten the success of the project and cause unpleasant surprises (Project Risk Management Handbook, 2003). Risk identification entails the determination of the threats and vulnerabilities to the Financials Institution IT environment which comprises the internal and external networks, hardware, software, applications, systems interfaces, operations and human elements stated by Monetary Authority of Singapore (2013). Following risk identification, the Financials Institution should perform an analysis and quantification of the potential impact and consequences of these risks on the overall business and operations.

Risk assessment is the overall process of risk analysis and risk evaluation. Its purpose is to develop agreed priorities for the identified risks (Project Risk Management Handbook, 2003). However, the challenge for IS managers is to determine how much risk they are

facing with an initiative and to assess whether or not this level of risk is appropriate for their business(Antonio,2011). This risk assessment should be updated at appropriate intervals consistent with the financial institution's service provider risk management program. A financial institution should revise its risk mitigation plans, if appropriate, based on the results of the updated risk assessment. Without an effective risk assessment phase, outsourcing technology services may be inconsistent with the institution's strategic plans, too costly, or introduce unforeseen risks (Monetary Authority of Singapore,2013). Furthermore Proper risk assessment and management are critical to minimize the problems of embedded contract mentality. Risk assessment should be carried out before the signing of the IS/IT outsourcing contract and risks should be managed carefully throughout the life of the contract.

There is no silver bullet, no step by step procedure for controlling risks over every outsourcing instance. Each outsourcing instance requires a mental predisposition to think things through and evaluate competing risk management strategies (Legorreta and Goyal,2007).

Once risks have been identified and an appropriate level of exposure agreed on, the final step in risk management is to determine what to do about each risk(Antonio,2011). Thurston and Davis (2000) define the term risk mitigation as: "The process of formulating, selecting and executing strategies designed to economically reduce risk, and monitoring the effectiveness of those strategies". Risk control is mitigation strategy, which requires an action to reduce, eliminate or avert the potential impact of risks (Antonio,2011).

According to Monetary Authority of Singapore (2013) Technology risk management guidelines, when an information system is outsourced to one or more third party service providers, proper security management processes must be in place to protect data, as well as to mitigate any security risks associated with the outsourced IT project and/or service. The following areas should be considered:

1. When preparing an outsourcing service contract, the organization should clearly define the security requirements of the information systems to be outsourced, such as how all personal and sensitive data should be handled throughout the contract. These requirements should form the basis of the tendering process and become an

integral part of the performance metrics.

2. The outsourcing contract should include requirements for all staff of third party service providers and vendors to sign non-disclosure agreements to protect sensitive data in the systems. The contract should also include a set of service level agreements (SLAs). SLAs are used to define the expected performance for each required security control, describe measurable outcomes, and identify remedies and response requirements for any identified instance of non-compliance. In addition to defining SLAs, the contract should include an escalation process for problem resolution and incident response, so that incidents can be handled according to a pre-defined process to minimize any impact on the organization.
3. When engaging IT service providers, an organization should ensure that the vendor employs adequate security controls in accordance with their own organizational IT security policies, wider regulatory requirements (such as requirements from the Hong Kong Monetary Authority for the banking sector) or other industry best practices. Service providers should be subject to the same information security requirements and have the same information security responsibilities as those specified for internal staff.
4. The security control compliance of service providers and users should be monitored and reviewed actively and periodically. The organization must reserve the right to audit responsibilities defined in the service level agreement, and have those audits carried out by an independent third party.
5. The organization should ensure the adequacy of contingency plans and backup processes provided by the service provider.
6. The security roles and responsibilities of the service provider, internal staff and end-users pertaining to the outsourced information system should be clearly defined and documented.
7. It is essential to ensure that all data to be handled by the outsourcing party are clearly and properly classified, and security privileges for access should only be assigned on an as-needed basis for the performance of their work or the discharging of contractual obligations.
8. Although an information system can be outsourced, the overall responsibility and liability of any breach to sensitive or personal data remains entirely with the organization.

According to south Indian bank outsourcing policy (2009), Risk Management practices for outsourced Financial Services on confidentiality and security of the data are the following area will be considered.

1. Public confidence and customer trust in the bank is a prerequisite for the stability and reputation of the bank. Hence the bank should seek to ensure the preservation and protection of the security and confidentiality of customer information in the custody or possession of the service provider.

2. Access to customer information by staff of the service provider should be on 'need to know' basis, i.e. limited to those areas where the information is required in order to perform the outsourced function.

3. The bank should ensure that the service provider is able to isolate and clearly identify the bank's customer information, documents, records and assets to protect the confidentiality of the information. In instances, where service provider acts as an outsourcing agent for multiple banks, care should be taken to build strong safeguards so that there is no commingling of information/documents, records and assets.

4. The bank should review and monitor the security practices and control processes of the service provider on a regular basis and require the service provider to disclose security breaches.

5. The bank should immediately notify in the event of any breach of security and leakage of confidential customer related information. In these eventualities, the bank would be liable to its customers for any damage.

Relationship and contract management: Another key to successfully managing an outsourcing relationship is the ability to communicate status, monitor and evaluate performance, and document results. In addition, a well- managed outsourcing relationship can enhance the outsourcing organization's ability to manage and evaluate the contract. Furthermore, according to Hayes (2011): The SLA defines the boundaries of the project in terms of the functions and services that the service provider will give to its client, the volume of work that will be accepted and delivered, and acceptance criteria for responsiveness and the quality of deliverables.

In general, Outsourcing is a transfer of core or none core activities to other organization

that can able to perform the function better than the outsourcer. Organizations have their own reason to make a decision for some of the functions to be delivered by external bodies. The main reasons are to focus on core functions, improve service quality, minimize cost, and to assist the fast growth situation of an organization. Outsourcing helps to realize these benefits for the outsourcer after the responsibility of managing the day-to-day operations and administrative activities is transferred to the service provider. Despite these advantages, outsourcing may result risks such as loss of direct control, cost escalation, and quality deterioration. On top of this the outsourcer can able to control the quality of the service delivered by the service provider and take a corrective measure on time if there is a deviation of supplier performance with related to the prior service level agreement made between the two parties.

2.8 Related Works

Atinaf M. (2009) have studied information systems development outsourcing management in Ethiopia: the case of the Ethiopian Telecommunications corporation The researcher used a case study approach as research design and also used interviews, documentation, observations and artifacts to collect the data. The finding from the research has highlighted that the outsourcing organization has failed to meet its schedule, cost, requirements, and customer service objectives. The major causes for these problems were lack of detailed requirements from the beginning, lack of detail in the SLAs, lack of previous experience in software outsourcing management. The researcher didn't study the whole information system functions and not included the financial sectors in Ethiopia.

Beyene (2010) and Antonio (2011) have studied on information system outsourcing risk and risk management practice in some selected Higher Learning Institutions in Ethiopia. Both researchers used to follow a qualitative research method. There finding shows that higher learning institutions in the country understand what outsourcing information system is about and also HLIs have no documented and structured outsourcing strategy and policy program and as well as risk management for IS outsourcing projects. The researchers focus on higher learning institutions in Ethiopia but not studied about banking or financial industry in Ethiopia. Even if not considered the security issues risk management like confidential data protections and access management in higher learning institutions.

Peritah (2014) and Gatere & Barako(2008) have studied on business process outsourcing strategy and performance of commercial banks in Kenya and outsourcing practices of the Kenyan banking sector respectively. The researchers used to follows a quantitative research method. Both of the researchers finds that the most commonly outsourced business operations include the ATM, card processing, debt collection and IT systems. Customer account processing is the least outsourced activity. Further the study found out that the outsourcer's financial performance in terms of profitability and cost efficiency was increased significantly compared to industry peers without BPO. The researcher studied on the generally outsourced business process strategy and performance, not focused on the IS functions on the banks and risk management of the outsourcing including access management, confidential data and risk assessment management.

According to Mulat (2007), has studied on outsourcing in Ethiopian, the objectives of the research was identify of the outsourcing in Ethiopia, identify of those business function in Ethiopian organizations are willing to outsource and identify the reasons to outsource and not outsourced business function in Ethiopia. The researchers used to follow a quantitative research method. The researcher finding confirm that Ethiopian organizations are willing to outsource non-core business functions, such as maintenance and janitorial services, security services and information technology services. Conversely, the research found out that accounting and administration outsourcing service providers will face great challenges form Ethiopian organization to deliver their services. This is mainly due to the fact that Ethiopian organizations fear the risk of loss of confidential information and loss of control in outsourcing these business functions. The researcher recommends that the research is very general which require further investigations both in breadth and depth. Thus, recommends as future researches should consider an in depth study on the outsourcing of each business functions.

The local researches mentioned in the above focused on that outsourcing in Ethiopian organizations and higher learning institutions in Ethiopia. It didn't try to show the banking industry in Ethiopia. IS outsourcing risk in the banking sector in Ethiopia is not fully covered by those local researchers. This research covered those risk faced on the banking sectors and the managements of the risk including the risk assessments, protections of confidential data in the banks and access management of the important or core functions in the banking sector. That is why this research is conducted after preliminary survey and observation of the actual situation in the country's context.

CHAPTER THREE

Research Design and Methodology

3.1 Introduction

This paper focuses on the risks associated with information system outsourcing and the management of these risks in banking sector. This chapter presents the methodology that is used to achieve the objective of the study. First, the nature of the study and research design is described. Then, the population of the study and source of data are presented. Next, sampling method and techniques, sample size, data collection instrument and data analyses are discussed. Finally, reliability and validity and also research model is presented.

3.2 Research Methodology

3.2.1 The nature of the study

The purpose of this study is to describe the reason for why information systems are outsourced, identify the risks of IS outsourcing, risk management, and see the perception of the banking industries towards those reasons and risks, therefore quantitative research are used. Because of it provides the potential to mine large amounts of information from large populations with adequate level of accuracy

3.2.2 Research Design

The study design is one of the main parts of a research. Therefore, it is important to choose the appropriate research design in order to achieve the study objectives. Researcher can use different types of design depending on the type of problem, the knowledge already available about the problem and the resources available for the study. Accordingly, in this study quantitative research design was used. Quantitative approach is convenient to reach more people with optimized time than qualitative approach. Hence, it provides the potential to mine large amounts of information from large populations with adequate level of accuracy. For the purpose of quantitative analysis, a survey is conducted through a

questionnaire to investigate reasons, risks and management of the risk issues of information system outsourcing in Ethiopian banks.

3.2.3 Sources of data

The study was used questionnaire as a primary data source to collect data from the banking sectors which is helps to answer the research questions.

3.2.4 Study population

The total population in the study is the banking sectors organized and licensed under national bank. Since it is unlikely to address all 18 banks in Ethiopia as private and government banks, only 9 are taken to represent all of the banks. The samples of the study were the Ethiopian banks information systems managers and middle level management members.

The respondents of the survey were information system manager and information system functions managers i.e. application managers/team leader, infrastructure manager/ team leader, help desk manager/team leader, network and server manager/team leader, security manager/team leader and E-payment technical manager/team leader members who makes a decision on information systems outsourcing.

3.2.5 Sampling method and techniques

Non-probability sampling, incorporating judgment samplings were used to identify the banks for the study. In order to determine the sample population for this study, a purposive/Judgmental sampling technique were used. The motivation for using purposive sampling technique, as opposed to any other sampling techniques comes from the observation that, not all banks have equal experience with regard to information systems outsourcing and some of the banks have not practice any information system outsourcing at all. Since one of the basic advantages of purposive sampling technique is that it enables the researcher to neglect the non-significant representatives of the population under study (Palys, 2008), after collecting pre-information about each banks; nine banks has been selected purposely to conduct this research.

3.2.6 Sample size

According to national bank of Ethiopia current website[1] there are a total of 18 banks in Ethiopia out of which 9 are taken as sample which means 50% from total population. Creswell (2013), in survey research, it is logical to take 10% of the population as a sample but the researcher picks nine (half) of the population for the sample from all banks. The participants in this research were the strategic managers of IS and different IS functions manager who are involved in the outsourcing decision-making process in the banks. In order to determine the sample population for this study, a purposive/judgmental sampling technique was used. Barreiro and Albandoz (2001, p. 4) define purposive sampling as follows*: "It is the one in which the person who is selecting the sample is who tries to make the sample representative, depending on his opinion or purpose, thus being the representation subjective"*. Thus, the samples were selected from bank managers of information systems and different information system departments as data source.

Therefore, a total of 63 samples were taken from both private and government banks to represent total population. Thus, 16 questionnaires were returned from two government banks and 47 from private banks were returned.

3.2.7 Instrument for Data Collection

The data collecting instrument are questionnaires with closed-ended items to gather data from the respondents to determine reasons, risks and risk management of information systems outsourcing in banks. The instrument was mainly developed from a synthesis of literatures that are relevant to meet objective of this study and Monetary Authority of Singapore technology questionnaire for outsourcing (2015). A 5-point Likert scale questionnaire was used to obtain data from information system manager or team leader of Ethiopian banks. Accordingly, the scales were ranging from 1= strongly disagree to 5=strongly agree.

Minor customizations were made to some of the questions in order to reflect the objective of the study. Moreover, some questions were newly developed based on the reviewed

[1] http://www.nbe.gov.et/financial/banks.html

literatures. The questionnaires are designed and pilot tested to ensure its clarity and understandability before it was distributed to the respondents. To increase the clarity of the questions for respondents understanding and to ensure the appropriateness of the questions, before launching the full scale study a pilot test was carried out on four respondents of commercial bank of Ethiopia and Dashen bank. Based on the feedback obtained changes also were made on the questionnaires, and the questionnaires were distributed to respondents, and a close follow-up also done to maximize the rate of return and to obtain the reliable data.

3.2.8 Data analysis

After data were gathered and coded, Statistical Package for Social Sciences (SPSS), among the various computational techniques was used for the analysis. The data collected through different instruments were analyzed based on the nature of questionnaire. Appropriate methods of data analysis were employed; and responses' was also being categorized using frequency tables. In this study risks associated with IS outsourcing practices were analyzed. On the other hand, analyses of how risks associated with IS outsourcing practices are managed by the banks in IT/IS outsourcing was carried out.

Findings were tabulated and represented in descriptive figures where felt necessary. The figures are presented inside the body where close reference to them is compulsory. In the end, analysis, interpretations and implications of information systems outsourcing reasons and risks are discussed and to avoid repetition of ideas gathered from the sample population, the researcher of this study was summarized the response gather from the collected data. Data on the information system outsourcing risks, reasons and management was analyzed using SPSS and different reports generated like mean, frequency and graph. To calculate the mean of Likert Scale this is the formula:

Weighted Mean=$\sum fx/n$

Where: $\sum$=Summation

F= Frequency

X=Weight of the response

n=Total number of Respondents

In addition, data reliability conducted using Cronbach's Alpha test to measure the consistency of the questionnaire. And also correlation and regression analysis were applied to analysis the data.

3.3 Reliability and Validity

To measure that quality, both reliability and validity were applied. Reliability is used to measure the consistency of the survey, whereas validity is used to measure the degree to which a scale or set of measures accurately represents the construct (Hair et al., 1998).

To measure the reliability of the questionnaire, Cronbach's alpha is applied. From the study, the Cronbach's alpha result became (0.81) which is greater than (0.7) and this showed that the questionnaire is reliable.

On the other hand, validity is used to measure the correlation of the items and this measure the construct of the survey. The other one is content validity which helped to show the questionnaire items solved the problem according to the need.

3.4 Research model and variables

There are two main variables, independent and dependent variable. On this research the independent variables are those that risk associated to outsourcing these are: Strategic risk, Financial risk , Performance oriented risk , Reputational risk , Compliance risk, Operational risk, Contractual risk, Access and Security risk, loss of control risk, Inexperienced Staff, Loss of Technical Knowledge and Loss of Innovative Capacity. The risk management and the reasons to outsource are also independent variables. A dependent variable is the variable that represents the output or outcome whose variation is being studied. The dependent variable is 'dependent' on the independent variable. The dependent variable on this research is the success of IS outsourcing projects. The success of IS outsourcing project is dependent on the risk associated to outsourcing and risk managements. If the risks are reduced and properly managed, there is a success of outsourcing and if it is not properly managed and the risk is very high, there is a high failure of IS outsourcing. Therefore, the success of IS outsourcing was dependent on the risk and proper management of IS outsourcing.

The research model in Figure 2 is built based on the combination of several past literatures

instead of a single research model. The research model discusses the risks, reasons and risk management in IS outsourcing.

The twelve risks associated to IS outsourcing Strategic risk , Financial risk , Performance oriented risk , Reputational risk , Compliance risk, Operational risk, Contractual risk, Access and Security risk, loss of control risk, Inexperienced Staff, Loss of Technical Knowledge and Loss of Innovative Capacity. The reasons of IS outsourcing are focus on core competences, reduce cost, access better skill and expertise, improve flexibility of the service, improve service quality and acquire new technology. And also the risk management or controlling was included in the research model. Based on the tasks proposed by the different authors a generalized research model was developed.

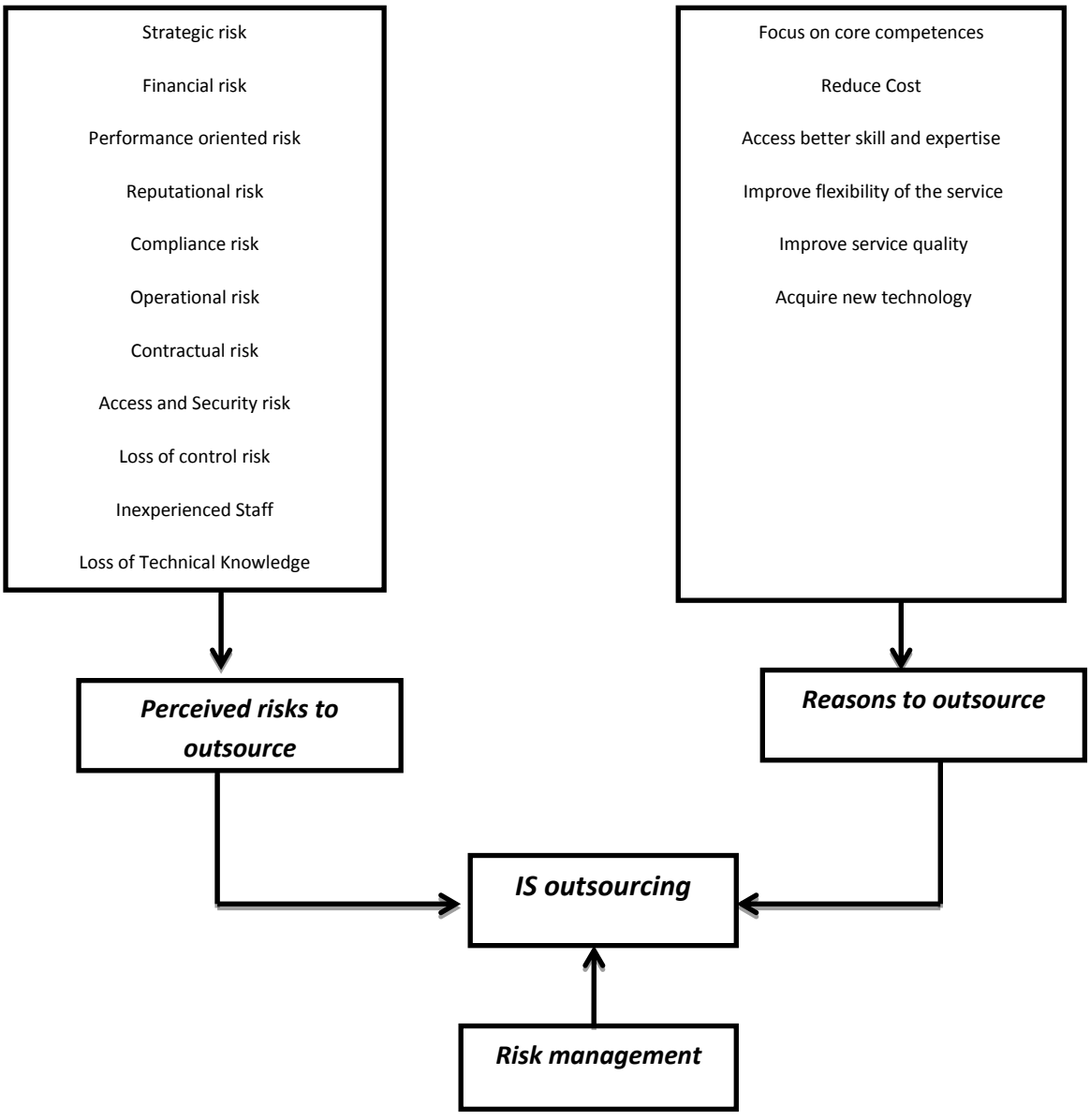


Fig.2 Research model

The variable constructs are further described as below.

Reasons to outsource

The main reasons for outsourcing are cost reduction, focus on core competences, access to better skill and expertise, improve service quality, improve flexibility of the service and acquire new technology.

Reducing cost still remains the number one reason that organization to outsource. Cost reduction outsourcing can be utilized to get lower cost base of external service providers, which allows reduction in IT operation cost or total cost of IT ownership. This enables the company to free additional finances for use in other areas with strategic values (Putra, 1998. p.4). Outsourcing paves the way to a more specialized IT management, as the provider firm finds itself in a better position to select, train and manage its technological staff; in this way, clients can have at their disposal high-level specialists without them having to be permanent members of their staff (Gonzalez et al., 2008). Clients have in mind a staff reduction which will mean significant cost savings.

Saving Technology Costs: this is also one part of the reducing cost. Service providers are exposed to a wider variety of problems and experiences associated with IS, which is why a greater volume of knowledge and skills can be obtained that will help to solve these problems (Gonzalez et al., 2008). Likewise, service providers dedicate all their capacity to the provision of IS services, as a result of which greater economies of scale and scope can be obtained. It is assumed that part of these economies are transferred to the client through lower prices in the achievement of the same services through outsourcing and through the work of the IS internal department.

Focus on core competency: IT outsourcing allows the company to focus on its core business by offloading operational aspects to service providers with expertise in IT fields. Companies can focus on optimizing their supply chain; meeting client's needs and improve contribution toward business objectives. (Putra, 2006). Outsourcing frees management from having to worry about the inner-workings of a non-core activity. The customer focuses on their core competence, the outsourcer focuses on theirs

Improve service quality: Often, better educated or skilled people perform the task, and thus perform it better (Maynard, 2006). Outsourcing can improve the quality delivered by IS services. For example, the provider can access more advanced technologies and count

on more motivated staff and better management systems in order to be able to achieve a better service coordination or, simply, is more strongly committed than the internal staff (Gonzalez et al., 2008).

.Access to better skills and expertise / specialist resources: Specialists are important in outsourcing because training and development of your employees is expensive (Gonzalez et al., 2008). If it's not training and development then it's employing of specialist. Running a venture of employing when it's not budgeted for is expensive. Therefore, careful selection of service provider with cutting-edge technologies and skills can provide access to world-class capabilities and specialist resources, which can reduce the risk of failure, while at the same time overtake competitors on the technological front (Ho, 2006). Obtain expert skills: An outsource firm is allegedly an expert in that particular activity, and thus should be able to do it better than the customer (Maynard, 2006).

Increasing Flexibility: The great change experienced by technology in recent years gives many firms a chance to obtain a considerable advantage from outsourcing. Business organizations can increase their flexibility through a continuous redesign of their contracts that will allow them to meet their information needs at any given time. Outsourcing provides a large degree of flexibility in the utilization of IT resources and makes it easier to face business level volatility, as the provider is left to deal with fluctuations in IT workloads (Gonzalez et al., 2008).

Facilitating Access to Technology/acquire to new technology: Outsourcing brings client firms advantages related to technology. The efficient use of outsourcing will most probably reduce the need to make investments in mature technology, simultaneously increasing the availability of resources related to new technologies for the client (Gonzalez et al., 2008).

Perceived risks to outsource

Strategic risk: The risk that the bank will lose its ability to react flexibly and unconstrained to changing market conditions (Mitchell, 1992). The risk of loss of organizational knowledge and competencies (Rouse and Corbitt, 2007)

Performance risk: The risk that the service provided by the outsourcing vendor will not be delivered as expected by the bank (Mitchell, 1992). Non receipt of service or receipt of service of lower quality (Rouse and Corbitt, 2007)

Operational risk: Risks of IT services failure resulting in inadequate or unsatisfactory customer service, or loss of organizational resources (Rouse and Corbitt, 2007).

Reputational risk: The risk that the company loses customers, key employees, or it ability to complete due to perceptions, impacting the company's reputation in the market. These risks arise when actions or poor performance of service provider causes the public to form a negative opinion about a financial institution (Guidance on managing outsourcing risk, 2013).

Financial risk: The risk that the actual costs may exceed the planned/budgeted costs of the outsourcing engagement. In other words: the fear of the manager that he will have to pay more for the service than originally anticipated (Mitchell, 1992). Risks of cost overrun, resulting in less than expected savings (Rouse and Corbitt, 2007)

Lack of expertise risk: It can often be difficult to find third parties with a proven team of experts who are experienced and knowledgeable in a particular industry being serviced or in specific computer applications, programming languages, or system platforms. Vendors should provide lists of their staff along with their resumes as part of the outsourcer's proposal.

Compliance risks: Events may occur which will impact the company's ability to comply with the rules and regulations to which it is obligated. Risks arise when the services, product, or activities of a service provider fail to comply with applicable laws and regulations.

Loss of Technical Knowledge: When a service is outsourced, clients gradually lose their understanding of the service over time (Gonzalez et al., 2008). Even if the provider delivers innovative services to the client, a large proportion of the new knowledge required remains in the hands of the provider and cannot be transferred to the client. What is more serious, the firm may lose its capacity to stay up to date with the technological breakthroughs (Clark, Zmud and McCray, 1995).

Furthermore, the *innovation capability* of the firm itself can be reduced, since every innovation requires a sufficient availability of technical and economic resources, something that is not precisely flavored by outsourcing (Earl, 1996).

Security risk: They are important when a provider attends to several direct competitors, which is why the confidentiality for the information related to all of them must be strictly kept (Grover, Cheon and Teng, 1994; Lacity and Hirschheim, 1993a). Security in the IS externalized services will depend on the provider firm and, therefore, a negotiation must take place within the framework of the outsourcing contract for the purpose of establishing policies and procedures to ensure that IS security aims (effectiveness, efficiency, adequacy, integrity, validity, authorization and privacy) continue to be achieved (Fink, 1994). *Access risk* is also the risk that system and processes do not sufficiently safeguard access to information.

Loss of Control risk: An organization which uses the vendor's proprietary services over time may become wedded to that technology and lose the flexibility to update its computer applications (Martinsons, 1993). Organizations which choose outsourcing without negotiating a detailed contract may also encounter hidden costs or dramatic increases upon renewal. Vendors who are hit with heavy license transfer fees from software houses or escalating operating costs will invariably pass them on to their clients.

An associated risk in giving up IS management control is the reduced ability to monitor or adjust information management activities and their resulting outputs. At the operational level, there may be difficulties in supervising and assessing the quality and cost-effectiveness of the contracted work. The inter-organizational coordination and communications which are required even after outsourcing can become more difficult to facilitate. If the vendor does not have an intimate understanding of your business, customer relations may be damaged by inappropriate task priorities and inadequate provisions for data security and recovery from hardware disasters. It may also be risky for the client to reveal its strategic business plan to the vendor who may be simultaneously providing services to competitors. If the vendor and client's outsourcing partnership subsequently encounters difficulties and turns sour, the vendor could even use the organization's proprietary information to effectively become a direct competitor.

Risk management

According to Aubert et al. (2001), risk analysis is also another important contributor towards outsourcing success. This becomes particularly present when identifying and implementing risk mitigation instruments such as the outsourcing contract. Therefore, a combined view of the activities associated with risk identification and assessment in the

design of risk mitigation instruments can be contributed to an enhancement of the overall quality of an outsourcing deal. Moreover, the risk management process not only includes identifying and assessing the risks in terms of its impact but also involves on:

- Developing suitable mitigation strategies
- Monitoring and communicating to control the risks
- Risk management procedures or guidelines for the outsourcing
- Fully consider risks in determining the best course of action
- Follows to measure the success/failure of IS outsourced
- Formal channel of communication with the service provider
- Monitor the performance of the Service Provider
- Appropriately communicated to employees
- Audit the Service Provider to assess its compliance
- protection of sensitive/confidential information
- Access management and
- Exit strategies and deal with it proactively.

Chapter Four

Data Presentations, Analysis and Discussions

This part of the thesis deals with the result and discussion of the data collected from the sample respondents to search for appropriate answers to basic questions raised at the beginning of the research study. To this effect, a total of 63 questionnaires were distributed to the nine banks in Ethiopia, 63 were filled in and returned. This implies that the rate of return of the questionnaires is 100 percent. The chapter began with an analysis of the features of sample population i.e. demographic variables. Next analysis of major variables using descriptive statistics with respect to reasons and risks of information system outsourcing and risk management's will be described.

4.1 Reliability analysis

As can be seen in table 2, the Cronbach's alpha test result is .807 which indicates that there is high level of consistency among the items.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.807	.828	39

Table 2: Overall reliability test. Source- Survey data (2016)

It is possible to get a large value of alpha by having large number of items instead of the reliability of the scale (Field 2005, p. 668). Hence, investigating the reliability of each of the IS outsourcing i.e. the reasons to outsource, the risk and the risk management is crucial to get a more reliable result. In view of that, further reliability analysis is conducted for each of the item as indicated in table 3. The result indicated that the survey is internally consistent for each of them (reasons, 0.737; risks, 0.842; risk management, 0.867) confirming that principal component analysis can be appropriate for this study.

Reliability Statistics			
Factors	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Reasons	.737	.749	6
Risks	.842	.844	12
Risk Management	.867	.867	21

Table 3: Reliability test of Reasons, Risks, and Risk management of IS outsourcing. Source- Survey data (2016)

4.2 Respondents Profile

The demographic characteristics such as age, sex, educational background, position and the nature of the business will help to assess whether there is a representation in sample population who are supposed to be studied. Accordingly each demographic variable of sample respondents are presented in the following way.

Sex/Gender Profile	Frequency	Percent
Male	51	81.0
Female	12	19.0

Table 4: Gender profile. Source- Survey data (2016)

From the summary of the table presented above, it can be seen that the majority of respondents are male 51 (81.0%) and the remaining 12 (19.0%) are female.

Age Profile	Frequency	Percent
20 & below	-	-
21-30	12	19.0
31-40	41	65.1
41-50	10	15.9
51 & above	-	-
Total	63	100.0

Table 5 Age profile. Source- Survey data (2016)

From the summary of the table presented above, it can be seen that regarding to the age the majority of respondents are between 31-40 years of age that constitute 41 (65.1%), 21-

30 years of age that constitutes 12 (19.0%), 41-50 years of age that constitutes 10 (15.9%) and none of the respondents were 20 and below, and above 51 years of age.

Educational Level Profile	Frequency	Percent
Certificate/Level I-III/Diploma(IV)	-	-
BA/BSC/BED	42	66.7
MA/MSC and Above	21	33.3
Others	-	-
Total	63	100.0

Table 6: Educational level profile. Source- Survey data (2016)

From the summary of the table presented above, it can be seen that regarding to the educational level profile. The respondents are well educated with 42 (66.7%) holding at least a first degree and 21 (33.3%) of them were second degree and above holder and none of the respondents were certificate/level I-III/Diploma (Level IV) holder. Therefore, as a result in the banks the top and middle level managements have a minimum degree and above in the educational level.

The respondents are well educated with 100% based on the analysis of the educational level and all the respondents occupying management positions. This suggests that all the respondents were well versed with the policies and operations of the bank, and involve in outsourcing decisions. Thus, the survey response can be relied upon to the extent that all respondent are bank top level management positions (directors, managers and team leader).

Position Profile	Frequency	Percent
Director	3	4.8
Manager	27	42.9
Supervisor/Team Leader	33	52.4
Total	63	100.0

Table 7: Position profile. Source- Survey data (2016)

From the summary of the table presented above, it can be seen that with respect to respondents work position the sample constitutes the majority is Team Leader/Supervisor 52.4% of the respondents and 42.9% are Manager of different information system

functions in the banking sectors. The rest 4.8% of the respondents are Directors of information system in the banks. Therefore the result shows that majority of respondents are team leader.

4.3 General information related to IS outsourcing

The last few years have brought significant changes to the functioning of banks. One of the most important ways of adaptation to the changing economic environment that reduces operational costs is outsourcing. Outsourcing of business processes is one of the key outcomes of the technological advancement (Peritah, 2014). Due to its IT-intensive business processes the potential for outsourcing appears to be particularly high in the banking industry. This is further enhanced by the fact that most of the information system/information technology services are outsourced in the banking sector.

4.3.1 IS outsourcing practice in Ethiopian banks

Accordingly the study to assess the current outsourcing practice of Ethiopian banks, respondents are asked to answer whether they have ever outsourced any IS/IT function or not.

	Frequency	Percent
Yes	60	95.2
No	3	4.8
Total	63	100.0

Table 8: Bank has outsourced any IS services. Source- Survey data (2016)

As the result, 95.2% of the respondents replied “Yes” this means the banks have outsource the IS functions to the third parties and the remaining 4.8% replied “No”, the result is the banks have not outsource the IS functions i.e. every tasks are done by in-house employees of the banks.

4.3.2 Information system functions that Ethiopian banks have outsourced

In this section respondents are inquired to select the IS functions that their banks are willing to outsource if there are reliable outsourcing service providers in the country. The respondents' answers outsource the information system services or function, the figure below indicates us which information system functions are mostly outsourced.

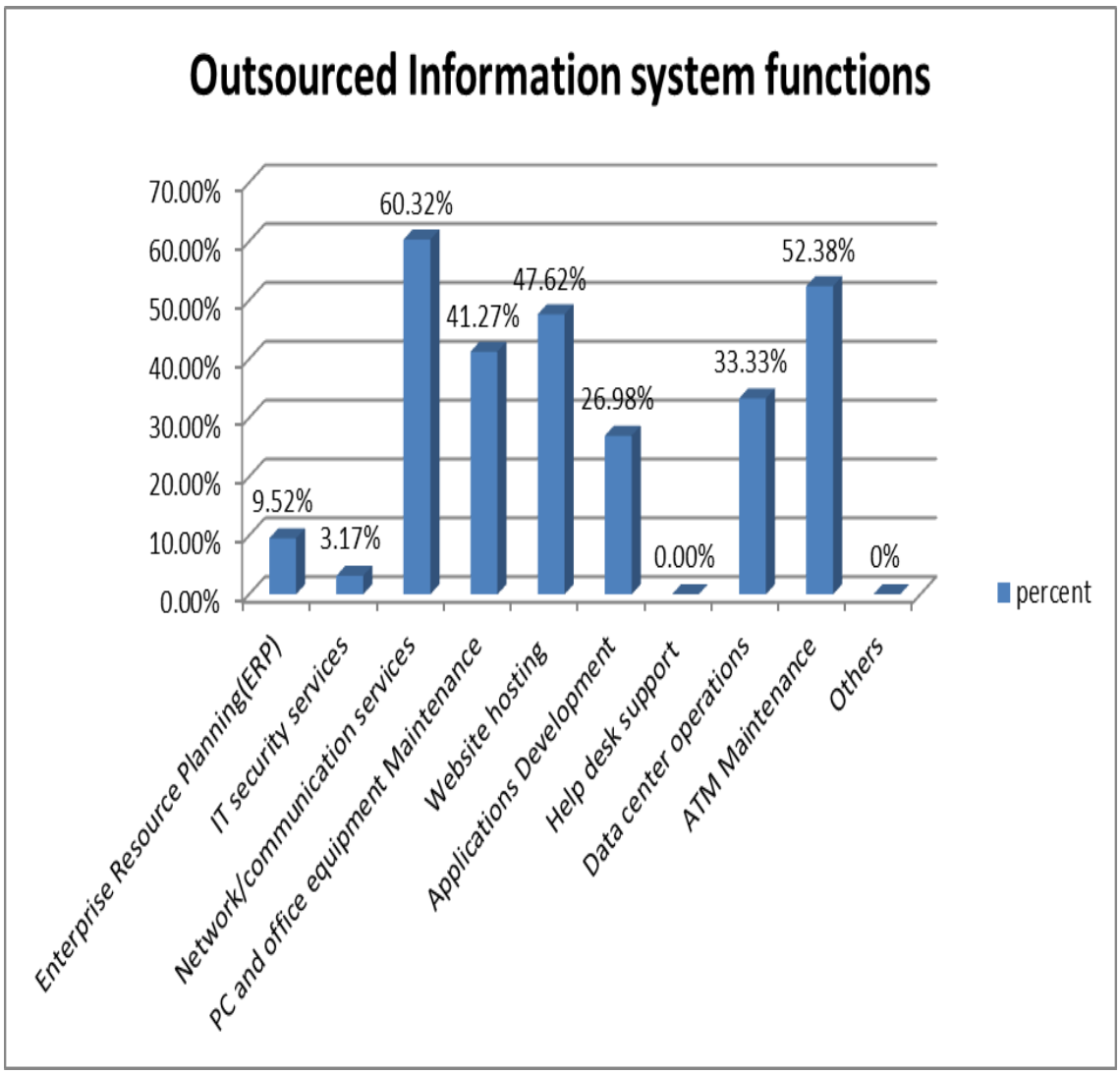


Fig.3 Outsourced information system functions. Source- Survey data (2016)

From the summary of the figure presented above, it can be seen that the majority of respondents rated the most outsourced information system service are network services/ communication services. Analysis of this graph indicates that network service function is the most widely outsourced in the banking sector with 38(60.32%) of the respondents

indicating that their banks have already outsourced the function. ATM maintenance is the second highly outsourced IS function with 33(52.38%) of the respondents confirming that their banks have already outsourced the function. Website hosting is the third highly outsourced IS functions with 30(47.62%) of respondents confirming their banks have already outsourced the function. PC and Office equipment maintenance is the fourth outsourced IS function with 26 (41.27%) of respondents that choice their banks have already outsourced the function. Help desk support is the least outsourced function with none of the respondents indicating that their banks are outsourcing the function. IT security service the second least outsourced function with 2 (3.17%) of the respondents indicating that their banks outsourcing the function. This is probably explained by the seriousness the banks attach the principle of confidentiality and is consistent with the security. Data center operations, Application development, Enterprise resource planning and IT security services are respectively, 21(33.33%), 17(26.98%), and 6(9.52%). As a result most of the banks are outsources network installation or communication services to the third parties. Especially when the banks open a new branch in the country at any place they outsource every installation of the networks.

4.3.3 Overall outsourced information system projects success

To evaluate the satisfaction of the banks regarding the outsourced IS service, respondents are asked to select their level of satisfaction from the list that contains satisfaction levels ranging from very satisfied to very unsatisfied.

The result is summarized in Table 9. According to the respondents about overall outsourced IS projects success, the table below shows overall success.

		Frequency	Percent
	Very satisfied	5	7.9
	Unsatisfied	4	6.3
	Satisfied	51	81.0
	Total	60	95.2
Missing	System	3	4.8
Total		63	100.0

Table 9 Overall outsourced information system project success. Source- Survey data (2016)

From the summary of the table presented above, it can be seen that the majority of respondents 81.0% are satisfied on outsourced information system service and 7.9% are very satisfied, 6.3% are Unsatisfied on outsourced and none of the respondents are not very unsatisfied on the outsourced IS services. And 4.8% of the respondents have not rated the overall outsourced IS project success because the missing system is due to there is no outsource any IS services in the banks. As the results the overall outsource of IS services success in the banks are satisfied. As Table 9 indicates, there is a variation in the satisfaction level of banks regarding the outsourced services. This might be due to the variation in the quality of service provided by different outsourcing service providers.

4.4 Reasons to IS outsourcing

An attempt was made to elicit the factors considered by the respondents for reasons to outsource IS services, suggestion from the review literature taking six factors in to consideration and the results are as shown below.

	N	Mean
To focus on core competences	63	4.16
To reduce cost	63	3.08
Access better skill and expertise	63	4.19
Improve flexibility of the service	62	3.92
Improve service quality	63	4.30
Acquire new technology	63	3.89
Others	0	

Table 10 Descriptive statistics of the reasons to outsourcing. Source- Survey data (2016)

Table 10 shows common factors or reasons to outsourcing information system services. While preferring a improve service quality is the major reason to outsource IS function with a mean value is 4.30. The results of the questionnaires on perceived reasons of outsourcing are shown in the above table. The respondents are generally in agreement that outsourcing process brings benefits to a bank. Improve service quality was cited by all the respondents as one reason derived to outsourcing IS function. A second important reason was access better skill and expertise with the mean value 4.19, this mean the banks

outsource the IS function because they need to obtain special skills or access to better skill and expertise. This is especially true in IT field where the banks would prefer to outsource due to rapid changes in technology. To focus on core competences is the third highly rated reason to outsource IS function with mean value 4.16 of the respondents confirming that their banks have outsourced the function. Improve flexibility of service was ranked as fourth reasons 3.92, Acquire new technology was ranked fifth 3.89; this is also true in IT filed where the banks would prefer to outsource due to rapid changes in technology .To reduce cost was rated lowest with only the mean value 3.08 of the respondents citing it as one of the reason that is derived to outsource the IS function.

4.5 The perceived risk associated to IS outsourcing

An attempt was made to elicit the factors considered by the respondents for the risk associated to outsource IS functions, suggestion from the review literature taking twelve risks in to consideration and the results are as shown below.

	N	Mean
Strategic Risk	63	3.49
Financial Risks	63	3.46
Performance oriented risks	63	3.13
Reputational risk	63	3.05
Compliance risk	63	3.19
Operational risk	63	3.41
Contractual risk	63	3.43
Access and security risk	63	3.97
Loss of control risk	63	3.67
Inexperienced staff(lack of expertise of the vendor)	63	3.38
Loss of technical knowledge	63	3.43
Loss of Innovative capacity	63	3.59
Others	0	

Table 11 Descriptive statistics of the perceived risks to outsourcing. Source- Survey data (2016)

From the summary of table 12 presented above, presents findings on risks associated with IS outsourcing. Banks cite access and security risk, loss of control risk, loss of innovative

capacity, loss of technical knowledge, strategic risk, and financial risk as the most likely risks in IS outsourcing, with the group of mean value 3.97, 3.67, 3.59, 3.49 and 3.46 respectively of the respondents ranking the risks as very high or high based on confirming that their banks will have face the risk associated with outsourced IS function. Access and security risk is perceived as high given the fact that the quality of service and the security being offered by the third party may not meet the banks expectations, thereby damaging the security of the bank. Reputational risk is the least considered as a risk in outsourcing with the group mean value of 3.05 of the respondents ranking the risk.

4.6 The risk management of outsourcing

4.6.1 Risk assessment and management

Once the outsourcing decision has been taken it becomes necessary, to justify the decisions; identify the risks, assessment of the risk, risk management procedures, measure the success/failure , plan for evaluate the performance of the vendor, set the criteria for resolving the differences and as well as define how to manage the contract afterward . These activities are important as they help in finding out the possible difficulties that may arise during implementation and the definitions of strategic objectives.

To examine these aspects, data were collected from Ethiopian banks in different areas of risk management practice in IS outsourcing projects.

4.6.1.1 Risk assessment

In the table 12 below that provides finding regarding there was not consider a risk assessment of the outsourcing arrangement available in the banks. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	28	44.4
No	35	55.6
Total	63	100.0

Table 12 Risk assessment of outsourcing arrangement. Source- Survey data (2016)

As can be seen from the above table, the majority of respondents were not consider a risk assessment of the outsourcing arrangement, including security risk assessment against the latest security threats, which constitute 35 (55.6%) and only 28 (44.4%) respondents were reported to be considering the risk assessment of the outsourcing arrangement. This means there were performed a risk assessment of the outsourcing well including risk assessment of security against the latest security threats. Therefore, Management shall nominate a suitable banks owner for each IS function/process outsourced. The top manager, with help from the local Information Risk Management Team, shall assess the risks before the function/process is outsourced, using bank's standard risk assessment processes. The data shows majority number of banks makes not performed the risk assessment preference before outsource the IS function.

4.6.1.2 Risk management procedures or guidelines for the outsourcing

Table 13 provides finding regarding the risk management procedures or guidelines were available in the banks. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	36	57.1
No	27	42.9
Total	63	100.0

Table 13 Banks have risk Management procedures. Source- Survey data (2016)

The respondents answered that 57.1% replied "Yes" based on the respondents answered that there is an explicitly structured risk management procedures or guidelines for the outsourcing of IS services in place. And only 27 (42.9%) respondents were reported to be not considering the risk management procedures or guidelines of the outsourcing arrangement. Thus, 42.9% of banks should be prepared the risk management procedures or guidelines for the outsourcing arrangement.

4.6.1.3 Management fully considers risks in determining the best course of action.

In the table 14 below that it indicates there is management fully considers risk in determining the best course of action was available in the banks.

		Frequency	Percent
	Yes	49	77.8
	No	13	20.6
	Total	62	98.4
Missing	System	1	1.6
Total		63	100.0

Table 14 Management fully considers risk. Source- Survey data (2016)

As can be seen from the above table, the majority of respondents were consider that a management fully determined the best course of action were available in the banks, which constitute 49 (77.8%) and only 13 (20.6%) respondents were reported to be no risk consider in the management course of action. 1.6% of the respondents are missing system by the top managements of the decision maker for outsourcing arrangement.

4.6.1.4 The procedure that the bank follows to measure the success/failure of IS outsourced

In the table 15 below that it indicates to measure the success or failure of any outsourced information systems were available in the banks.

	Frequency	Percent
Yes	33	52.4
No	30	47.6
Total	63	100.0

Table 15 bank has a procedure to measure the success/failure of outsourced. Source- Survey data (2016)

The respondents answered that 33 (52.4%) replied "Yes" and only 30 (47.6%) respondents were reported to be no considering to measure the success or failure of outsourcing management. Regarding IS outsourcing projects the research shown both

success and failure stories. According to the respondents answered that there is a procedure to measure the success and failure of the outsource project.

4.6.1.5 Formal channel of communication with the service provider

Table 16 provide findings regarding there is formal communication with the service providers were available in the banks. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	56	88.9
No	7	11.1
Total	63	100.0

Table 16 banks have channel of communications with service provider. Source- Survey data (2016)

As can be seen from the above table, the majority of respondents were channel of communications with service provider were available in the banks, which constitute 56 (88.9%) and only 7 (11.1%) respondents were reported to be no formal communication between the service providers. The respondents were very clear about the importance of managing the relationship with the service provider for discuss to the performance and the service quality. However, respondents argued that there is detail communication mechanism that of the SLA and the contract negotiation. Everything will be resolved and managed based on the agreement they have during the contract negotiation. However, Sweet et al (1999) stressed the importance of strong relationship management and issues resolution approach. After the client decides to outsource a specific IS function, client and provider together should design an approach to govern the relationship.

4.6.1.6 Vendor management process to monitor the performance of the service provider

In the table 17 below that it indicates weather there is to monitor the performance of the service provider were available in the banks or not.

	Frequency	Percent
Yes	32	50.8
No	31	49.2
Total	63	100.0

Table 17 Vendor management process to monitor the performance of the provider. Source- Survey data (2016)

As can be seen from the above table, the majority of respondents were consider a vendor management process, including the performance of the provider, which constitute 32 (50.8%) and the rest 31 (49.2%) of the respondents were reported to be no considering the vendor management process to monitor the performance of the provider. Beyond the vendor management process there is also monitoring of the performance of service provider and should focuses on proactive and collaborative management of the relationship, the evolution of services provided, communication processes, performance review standards, and overall relationship management.

4.6.1.7 The risks and management's recognition are appropriately communicated to employees

Table 18 provide findings indicates that there were not appropriately communicated between IS managers and employees in the banks. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	30	47.6
No	33	52.4
Total	63	100.0

Table 18. The risk appropriately communicated to employees. Source- Survey data (2016)

As it can be seen from the above table, the majority of respondents were consider the existence of the risk was not appropriately communicated to employees of the banks, which constitute 33 (52.4%) of the respondents were replied “No” and the rest 30(47.6%) of the respondents were reported to be considering the risk appropriately communicated to the employees of the bank.

4.6.1.8 A process to audit the service provider to assess its compliance

In the table 19 below that it indicates a process to audit the service provider to access its compliance with their policies in the banks.

	Frequency	Percent
Yes	29	46.0
No	34	54.0
Total	63	100.0

Table 19 they have a process to audit the service provider. Source- Survey data (2016)

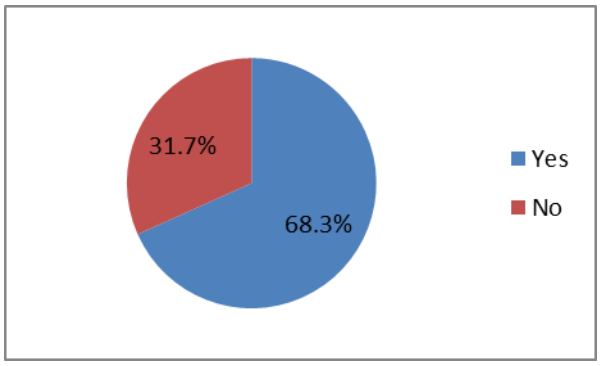
As can be seen from the above table, the majority of respondents were consider the existence of a process to audit the service provider to assess its compliance with your policies, procedures, security controls and regulatory requirements was not appropriately analyzed within banks, which constitute 34 (54.0%) of the respondents were replied “No” and the rest 29(46.0%) of the respondents were reported to be considering to analyzed a process to audit the service provider to access its compliance with the policies ,procedures, security control and regulatory requirements in the banks. This 46.0% of the respondents of the banks shall audit the service provider physical premises periodically for compliance to bank’s security policies, ensuring that it meets the requirements defined in the contract.

4.6.2 Protection of sensitive/confidential information

At some point in their work with the banks, all personnel will deal with sensitive information, that is, information that requires a level of confidentiality. Sensitive documents need to be handled appropriately in order to protect them from loss, damage, unauthorized disclosure, or modification.

4.6.2.1 Protect and maintain the confidentiality of the sensitive data

Figure 4 depicted below indicates a written undertaking to protect the confidentiality of sensitive data were available in the banks. The percentage presented below in the figure based on the questionnaire ratings.



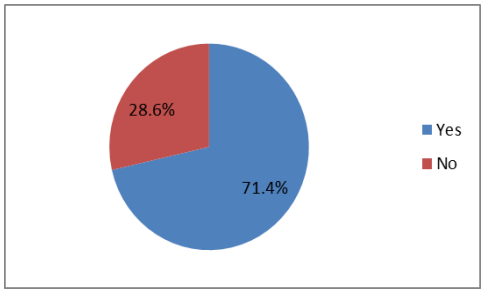
Source- Survey data (2016)

Fig.4 A written undertaking to protect the confidentiality of sensitive data

The above figure shows that the majority of respondents have a written undertaking document to protect and maintain the confidentiality of the sensitive data of available in the banks, which constitute 68.3% and the rest 31.7% of the respondents were reported to be haven't a written documents to protect and maintain the sensitive data in the banks. So this 31.7% of the banks have not considered the risks of access and security of the confidentiality of sensitive data of the banks.

4.6.2.2 The service provider able to isolate and clearly identify the sensitive data

Figure 5 depicted below indicates that the provider has clearly identified the sensitive data were available in the banks. The percentage presented below in the figure based on the questionnaire ratings.



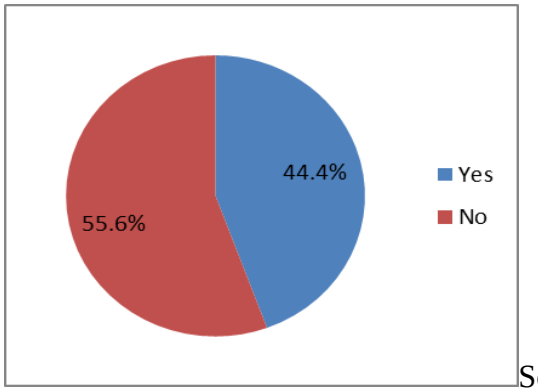
Source- Survey data (2016)

Fig.5 the provider has clearly identified your sensitive data.

The above figure shows that the majority of respondents consider that the service provider a clearly identify of the banks sensitive data like customer data, documents, records and assets to protected their confidentiality, which constitute 71.4% and the others 28.6% of the respondents were reported to be haven't consider a clearly identify of the banks sensitive data to protected their confidentiality.

4.6.2.3 The Service Provider has privileged access or remote access

Figure 6 depicted below indicates that the provider have privileged or remote access perform systems for the outsource service were available in the banks. The percentage presented below in the figure based on the questionnaire ratings.



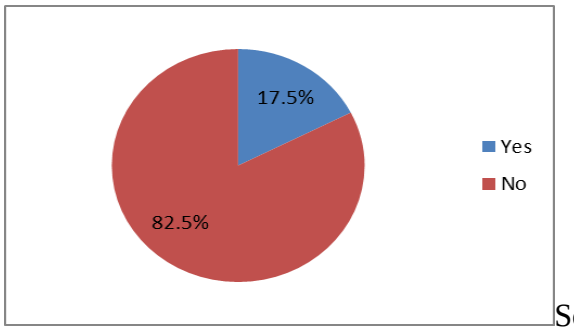
Source- Survey data (2016)

Fig.6 The provider have privileged or remote access perform systems for the outsource service

The above figure shows that the majority of respondents consider that was not gave privileged or remote access to performed systems for the outsourced services, which constitute 55.6% and the others 44.4% of the respondents were reported to be have privileged access or remote access to performed systems/user administration for the outsourced service in the banks. This means the bank was opened to the risk or for the attacker of confidential sensitive data. But 55.6% of the banks have not remotely accessed by the third parties, so they protect itself from the risks of the loss of confidential sensitive data of the banks.

4.6.2.4 The providers have access to your bank's sensitive data

Figure 7 depicted below indicate whether the service providers have access to your banks sensitive data are available. The percentage presented below in the figure based on the questionnaire ratings.



Source- Survey data (2016)

Fig.7 the providers have access to your bank's sensitive data

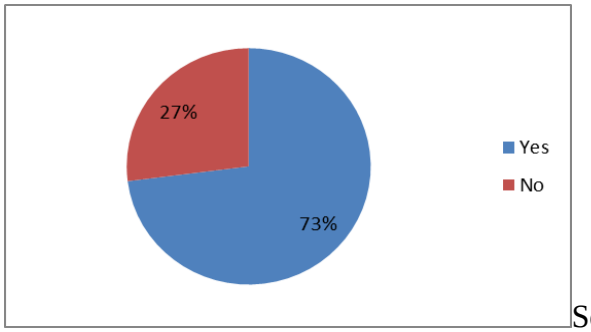
The above figure shows that the majority of respondents consider that was not gave privileged or remote access to performed system for the outsourced services, which constitute 82.5% and from the above figure 6. 44.4% of the respondents were reported to be have privileged access or remote access to performed system/user administration for the outsourced service in the banks. But from this 44.4% of the respondents, 17.5% does the Service Provider have access to the bank’s sensitive data. This means that the service provider access remotely what they needs about the confidential sensitive data.

4.6.3 Access management

In order to prevent unauthorized access to bank's information assets by the outsourcer or sub-contractors, suitable security controls are required as outlined in this section. The details depend on the nature of the information assets and the associated risks, implying the need to assess the risks and a suitable control.

4.6.3.1 The activities of privileged accounts are logged and reviewed regularly

Figure.8 depicted below indicates that the privileged accounts are logged and reviewed regularly basis in the banks based on the questionnaire ratings.



Source- Survey data (2016)

Fig.8 Privileged accounts are logged and reviewed regularly

As can be seen from the above figure, the majority of respondents were consider the activities of privileged accounts are logged and reviewed regularly were done in the banks, which constitute 73% of the respondents were replied "Yes" and the rest 27% of the respondents were reported to be no considering to checked of a privileged accounts are logged and reviewed regularly in the banks.

4.6.3.2 Audit and activity logs are protected against tampering by privileged users

Table 20 provides finding regarding audit and activity logs are protected against damaging by privileged users received from the ratings of the respondents. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	47	74.6
No	16	25.4
Total	63	100.0

Table 20 Audit and activity logs are protected. Source- Survey data (2016)

As can be seen from the above table, the majority of respondents were consider the activities logs and audit protected against tampering by privileged users were done in the banks, which constitute 74.6% of the respondents were replied "Yes" and the rest 25.4% of the respondents were reported to be no considering to audit and activities logs are protected against tampering by privilege users in the banks. This means the banks protected itself from the risks of privileged users damaging the data or information.

4.6.3.3 Access to sensitive files, commands and services are restricted and protected

In the table 21 below that it indicates that accesses to sensitive files, commands and services are restricted and protected were available in the banks.

	Frequency	Percent
Yes	53	84.1
No	10	15.9
Total	63	100.0

Table 21 Accesses to sensitive files, commands and services are restricted and protected. Source- Survey data (2016)

As can be seen from the above table, the majority of the respondents were replied the access to sensitive files, commands and services are restricted and protected are available in the banks, which constitute 84.1% of the respondents were replied "Yes" and the others 15.9% of the respondents were reported as no considering to restricted and protected of the sensitive files and commands. This replies that 84.1% of the banks in Ethiopia were protected sensitive files, commands, services and important information from the service provider

4.6.3.4 Detect of unauthorised changes to databases

In the table 22 below that it indicates the integrity checks are implemented to detect unauthorized changes to databases were available in the banks.

	Frequency	Percent
Yes	48	76.2
No	15	23.8
Total	63	100.0

Table 22 Integrity checks are implemented to detect unauthorized changes to databases. Source-Survey data (2016)

As can be seen from the above table, the majority of respondents were consider to detected unauthorized changes to databases, files, programs and system configuration were done in the banks, which constitute 48(76.2%) of the respondents were replied "Yes" and the others (15)23.8% of the respondents were reported to be no considering to detected unauthorized changes to databases, files, programs and system configuration in the banks. This means that the banks protected it from the risks of unauthorized persons to changes to the systems.

4.6.3.5 Password controls for the outsourced systems and applications are reviewed

In the table 23 below indicates that a password controls for the outsourced systems and applications are reviewed were available in the banks.

	Frequency	Percent
Yes	47	74.6
No	16	25.4
Total	63	100.0

Table 23 Password controls for the outsourced systems and applications are reviewed. Source-Survey data (2016)

The above table shows that the majority of respondents were consider to reviewed of password controls and application for the outsourced systems were available in the banks, which constitute 74.6% and the others 25.4% of the respondents were reported to be no considering to reviewed of password controls and application in the banks. This means that the banks reviewed password controls of the outsourced systems from the risks of unauthorized persons to changes in the systems.

4.6.3.6 Access rights for the outsourced systems and applications are reviewed

Table 24 provides finding regarding access rights for the outsourced systems and applications are reviewed regular basis received from the ratings of the respondents. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	47	74.6
No	16	25.4
Total	63	100.0

Table 24 Access rights for the outsourced systems and applications are reviewed regular basis.
Source- Survey data (2016)

The above table shows that the majority of respondents were consider to reviewed regular basis of access right and application of the outsourced systems were available in the banks, which constitute 74.6% and the others 25.4% of the respondents were reported to be no considering to reviewed regular basis of access right and application of the outsourced systems in the banks. This means that the banks reviewed regularly basis of access right of the outsourced systems from the risks of unauthorized persons.

4.6.4 Exit Strategy

4.6.4.1 Contingency plan

The need for drawing up contingency plans emerges from a thorough analysis of the risks that your organization faces. It's also useful in thinking about new and ongoing projects: what happens when 'Plan A' doesn't go as expected? Sometimes Plan A simply means 'business as usual.' Other times, with more sophisticated risk management plans, Plan A is

your first response to deal with an identified risk – and when Plan A doesn't work, you use your contingency plan.

4.6.4.1 .1 A contingency plan in the event of the unexpected cessation of the Service Provider

Table 25 provides finding regarding a contingency plan in event of the unexpected cessation of the service provider received from the ratings of the respondents. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	41	65.1
No	22	34.9
Total	63	100.0

Table 25 A contingency plans in the event of the unexpected cessation of the service provider. Source- Survey data (2016)

As can be seen from the above table, the majority of respondents were consider to a contingency plan in the event of unexpected stop of the service provider were available in the banks, which constitute 65.1% and the others 34.9% of the respondents were reported to be no considering to a contingency plan in the banks.

4.6.4.2 The right to terminate the SLA in the event of default

Table 26 provides finding regarding that the right to terminate the SLA in the event of defaults in the banks received from the ratings of the respondents. It is also further discussed in the subsequent paragraphs.

	Frequency	Percent
Yes	49	77.8
No	14	22.2
Total	63	100.0

Table 26 the right to terminate the SLA in the event of defaults. Source- Survey data (2016)

The above table shows that the majority of respondents have consider the right to terminate the SLA in the event of default, change of security or serious deterioration of the service when available in the banks, which constitute 77.8% and the others 22.2% of the respondents were reported to be not considering to the right terminate the SLA in the event of defaults happen in the banks.

4.6.4.3 Contract termination with the service provider

In the table 27 below that it indicates whether able to have all IT information and assets promptly removed or destroyed when the contract terminations were available in the banks.

		Frequency	Percent
	Yes	36	57.1
	No	26	41.3
	Total	62	98.4
Missing	System	1	1.6
Total		63	100.0

Table 27 Able to have all IT information and assets promptly removed or destroyed when the contract terminations. Source- Survey data (2016)

As can be seen from the above table, the majority of respondents were consider able to have all IT information and assets promptly removed when the contract terminations available in the banks, which constitute 57.1% and the others 41.3% of the respondents were reported to be not considering to have all IT information and assets quickly removed or destroyed when the contract terminates happened between the service provider and in the banks.

4.7 Correlation and Regression Analysis

4.7.1 Correlation Analysis

Pearson's correlation analysis was used to assess the relationships among the variables (Sekaran, 2003). Table 28 indicates the correlation result between the dependent variable and the independent variables

		Overall success of outsourcing project	Reasons to outsource	Risks to associated to outsource	Risk management
Overall success of outsourcing project	Pearson Correlation	1	.533**	.732**	.916**
	Sig. (2-tailed)		.000	.000	.000
	N	60	63	63	63
Reasons to outsource	Pearson Correlation	.533**	1	.261*	-.388**
	Sig. (2-tailed)	.000		.039	.002
	N	63	63	63	63
Risks to associated to outsource	Pearson Correlation	.732**	.261*	1	.338**
	Sig. (2-tailed)	.000	.039		.007
	N	63	63	63	63
Risk management	Pearson Correlation	.916**	-.388**	.338**	1
	Sig. (2-tailed)	.000	.002	.007	
	N	63	63	63	63

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

*. Correlation is significant at the 0.05 level (2-tailed) Source- Own Survey data (2016)

Table 28: Correlation analysis of overall success of outsourced information system

According to the result, overall outsourced information systems project success is positively correlated with the risk management with r=.916**, p<0.01, risks associated to outsourcing positively correlated with overall success of outsourcing with r=.732**,

p<0.01, the reasons to outsourcing positively correlated with overall success r=.533**, p<0.01. Also there is a negative correlation value is r=-.388** between the risk management and the reasons to outsourcing. This indicates there is a positive relation between them compare to other variables.

4.7.2 Regression Analysis

In addition to correlation, regression analysis also conducted to assess the success of IS outsourcing in the banking sectors. Table 29 shows the regression analysis of overall success of outsourcing model summary.

The multiple regression analysis show that the model is satisfactory because $R^{2=}0.729$. Table 30 shows the regression coefficients and p-values. The result indicated that two of the independent variables have positive effects toward overall success of outsourcing rate. The remaining one independent variable has a negative effect toward overall success of outsourcing. Also the p value indicated that the reliability of the independent variables on the dependent variable. This value should be less than 0.05. The result indicted that risks associated to outsourcing and risk management factors when regressed against overall success of outsourcing rate are significant. However, reasons to outsourcing has an insignificant influence overall success of outsourcing rate regression analysis (p>0.05).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854(a)	.729	.108	.572

Table 29: Model Summary (Source: Own Survey, 2016)

Table 30: Multiple regression analysis for overall success of outsourcing rate

	Unstandardized Coefficients		Unstandardized coefficients		
Independent variables	B	Std error	Beta	t	Sig.
(Constant)	-.506	1.859		-.272	.789
Reasons to outsource	-.237	.130	-.304	-1.823	.074
Risks associated to outsource	-.267	.088	-.434	-3.016	.004
Risk Management	-.540	.234	-.449	-2.306	.027

Note: Dependent Variable: Overall success of IS outsourcing. (Source: Own survey, 2016)

4.8 Discussions

To find the major of the study and to give important recommendations, the collected data should be analyzed and discussed. Accordingly the analysis and important findings from the collected data are discussed below.

As the study shows, majority of respondents 95.2% outsource information system functions to the third parties. The researcher finds that almost all of the Ethiopian banks outsource the information system functions and the remaining 4.8% shows that the banks have not outsource the IS functions.

As shown from the analysis, the most outsourced Information system functions in the banking industry of Ethiopian were Network services. This most widely outsourced function with 60.32% of the respondents indicating that their banks have already

outsourced. Especially when the banks open a new branch in the country at any place they outsource every installation of the networks. ATM maintenance is the second highly outsourced IS function with 52.38% of the respondents confirming that their banks have already outsourced the function. Website hosting is the third outsourced IS functions with 47.62% of respondents confirming their banks have already outsourced the function. Web hosting is a service that allows banks/organizations and individuals to post a website or web page on the internet. Web hosting service provider, is a business that provides the technologies and services needed for website or webpage to be viewed in the internet. So the banks outsourced this website hosting to the third parties. Banks cite PC and office equipment maintenance, Data center, Application development, Enterprise resource planning and IT security with the percent value of 41.27%, 33.33%, 26.98%, 9.52% and 3.17% respectively of the respondents ranking as confirming that their banks were outsourced IS function.

Help desk support is the least outsourced function with none of the respondents indicating that their banks are outsourcing the function.

According to the respondents' answered that the overall outsourced of IS services successes in the banks are satisfied. 81.0% of respondents confirming that their banks have already satisfied on the outsourced functions. 7.9 are very satisfied and 6.3% are unsatisfied on outsourced projects.

The reasons to outsourcing information system services, while preferring to improve service quality is the major reason to outsourcing IS function. Improve service quality was cited by all the respondents as one reason to outsourcing IS function. This is most rated by the respondents of IS manager because of almost all banks needs to improve the service qualities to their customers and highly competent in the market. The second major reason was access better skill and expertise; this is especially true in IT field where the banks would prefer to outsource due to rapid changes in technology because of them needs to be obtained specially skills or access to better skill and expertise. To focus on core competences is the third highly rated reason to outsource IS function, the respondents confirming that their banks have outsourced the function because of one of the reasons.

To reduce the cost was rated lowest with only the mean value 3.08 of the respondents citing it as one of the reasons to outsource the IS function. In Ethiopia, banks outsource the IS the function because of, they need service improvement but not highly rated by the

respondents as a big factor to reduce the cost. This finding confirms that Mulat (2007) findings. His findings on the reasons to outsourcing the IT in Ethiopian organizations are to improve the service level and to focus on core competency.

As it shows in table 11, risks with regard to outsource the IS function, access and security with the mean value of 3.97. Access and security risk is highly rated by the respondents of IS managers because of almost all banks fears the access and security risk issues of the banks. Banks outsource the IS functions because of to need improve the service qualities for their customers but their challenges on the security risk. The second mostly rated by the respondents are loss of control risk. There was a loss of control the system because everything was controlled by the third parties. So, IS managers of the banks faced/challenged by one of this risk. The third risk associated to IS outsourcing was loss of innovative capacity. The banks IS staff they loss capability of creativity on new things. This innovative capacity was taken over by service provider. The strategic risk and financial risk as the most considered risks in IS outsourcing, with the group of mean value of the respondents ranking risks as very high or high based on confirming that their banks will have face the risk associated with outsourced IS function. The strategic risk is the main risk for the competencies of the bank because of loss of bank/organizational knowledge and competencies were affects the banks strategic plan.

Reputational risk is the least considered as a risk in outsourcing with the group mean value of 3.05 of the respondents ranking the risk. The risk that the company loses customers, key employees, or it ability to complete due to perceptions, impacting the company's reputation in the market is not highly rated in the bank will face associated with outsourced IS function but it was one of the factors that affect the bank's strategy.

According to Barako and Gatere (2008), findings on risks associated with outsourcing, Kenyan banks cite reputational risk, strategic risk, operational risk and contractual risk as the most likely risks in outsourcing. His findings was general on outsourcing practices of the Kenyan banking sector, not focused on the information systems outsourcing practice. But in Ethiopian banks access and security risk is highly rated by the respondents because of almost all banks fears and challenged by access and security risk issues.

The data shows majority number of banks (55.6%) makes not performed the risk assessment preference before outsource the IS function and only (44.4%) of the banks were to be considering the risk assessment of the outsourcing arrangement. Therefore,

Management shall nominate a suitable banks owner for each IS function/process outsourced. The top IS manager, with help from the local Information Risk Management Team, shall assess the risks before the function/process is outsourced, using bank's standard risk assessment processes. And the majority of the banks top managers were not established the local information management team to assess the risks before the function was outsourced.

The respondents answered (57.1%) that there are explicitly structured risk management procedures or guidelines for the outsourcing of IS in place. And only 42.9% respondents were reported to be not considering the risk-management procedures or guidelines of the outsourcing arrangement. When compares to beyene (2010) findings, there are no-risk management procedures or guidelines for the outsourcing of IS in general within higher learning institutions. However, now in this research finding there are structured risk management procedures or guidelines to the banks. However, some of the banks haven't the risk management procedures or guidelines for the outsourcing arrangement so, may the National bank of Ethiopia forces to create a powerful policy would help those banks to have a good outsourcing strategy. It is therefore necessary that managers in the banks develop the IS outsourcing procedures or guidelines.

The banks were very clear from the importance of managing the relationship with the service provider to discuss the performance and the service quality. However, respondents argued that there is detail communication mechanism that of the SLA and the contract negotiation, which constitute 88.9% and only 11.1% respondents were reported to be no formal communication between the service providers. The banks have a good communication channel to controls the whole outsourced functions and service. And also banks have a controlling mechanism to check the performance and service quality of the service provider.

The bank has taken fully the best course of actions when management fully considers the risk on the service provider. Banks have the procedure that follows to measure the success/failure of outsourced information systems by top IS managers and some of the banks haven't the procedure to measures the success or failures.

According to the IS manager respondents, banks were manages the performance of the service provider and monitors the vendors but some banks were not manages the performance and monitors of the Service Provider. In the bank the top IS manager has a

poor communication to their employees i.e. the risks they faced or challenged by outsourced IS recognitions are not appropriately communicated to employees in the banks. The bank has not a properly process to audit the Service Provider to assess its compliance with the policies, procedures, security controls and regulatory requirements.

According to respondents about the confidential data, the banks have a written undertaking document of the policy to protect and maintain the confidentiality of sensitive data in the banks which constitute 68.3%, and the others 31.7% of the banks were reported to be haven't a document. As the IS managers responds highly rated that the service provider considered about a clearly identified of the banks sensitive data like customer data, documents, records and assets to protect were their confidentiality.

According to the respondents of the banks were not given privileged access or remote access to performed systems for the outsourced services, which constitute 55.6% and the rest 44.4% of the banks were reported to be have privileged access to perform system for outsourced service in the banks. However, from this 44.4% of the respondents, 17.5% do the service provider have access to the bank's sensitive data, which is open for an attacker to do any things on the sensitive data.

Banks have controlled the access activities of privileged accounts are logged and reviewed regularly basis, audit and activity logs are protected against tampering by privileged users to protect what the service provider doing on the systems. To protect and manage the banks properly integrity checks are implemented to detect unauthorized changes to databases, files, programs and system configuration from attackers of the banks.

In the banks, they have a properly management of access rights and password controls for the outsourced systems, and applications are reviewed for compliance on a regular basis to protect the service of the banks from attackers of the service provider and external attackers.

As it can be seen from the above information's, the bank of IS manager respondent consider able to have all information about measure and controls the details of the nature of information access managements were in the banks properly managed.

According to the study, banks have a contingency plan in the event of unexpected stop of the service provider, which constitute 65.1% and only 34.9% of the bank was not considered to a contingency plan. And not only a contingency plan, banks have the right to terminate the SLA in the event of default, which constitute 77.8% and the rest 22.2% did not consider the right to terminate the SLA. When the SLA or contracts are terminated with the service provider, bank has considered to have all IT information and assets promptly removed, which constitute 57.1% and others 41.3% were reported to be not considering to have all IT information and assets quickly removed or destroyed.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with the major findings of the study and forwarded recommendations based on the findings and conclusion.

5.1 Summary

The main purpose of this research was to investigate on information system outsourcing risk and risk managements. Therefore; the finding was summarized from the analysis of the paper were taken as the following.

The researcher finds that almost all the Ethiopian banking sectors were outsourced the information system functions to the third party. As shown from the analysis, the most outsourced Information system functions in the banking industry of Ethiopian were network services. According to the respondents indicating that their banks have already outsourced network installations to the third parties. ATM maintenance is the second highly outsourced IS function and Website hosting is the third outsourced IS functions in the banking sectors. Help desk support is the least outsourced function with none of the respondents indicating that their banks are outsourcing the function.

Improve service quality is the most reason to outsourcing IS function. Improve service quality was cited by all the respondents as one reason derived to outsourcing IS function. The second important reason was access better skill and expertise, to focus on core competences is the third highly rated reason to outsource IS function, the respondents confirming that their banks have outsourced the function because of one of the reasons. The respondents were confirmed that reduce the cost was rated the lowest reason which is derived to outsource the IS a function in the banking sector. In Ethiopia banks outsource the IS a function because of, they need service improvement but not highly rated by the respondents as big factors to reduce the cost.

According to the survey data of the risks with associated to outsource the IS function, access and security risk is highly rated by the respondents of IS managers because of

almost all banks feared the access and security risk issues of the banks. The seconds mostly rated by the respondents are loss of control risk. The third risk associated to IS outsourcing was the loss of innovative capacity. The bank IS staff loss capability of creativity on new things. This innovative capacity was taken over by the service provider.

Reputational risk is the least considered as a risk in outsourcing of information systems. The risk that the company loses customers, key employees, or it the ability to complete due to perceptions, impacting the company's reputation in the market is not highly rated in the bank will face associated with outsourced IS function, but it was one of the factors that affect the bank's strategy.

The study shows that majority of number of banks makes not performed the risk assessment preference before outsource the IS function and only minority of the banks were to be considering the risk assessment of the outsourcing arrangement. However, there are an explicitly structured risk management procedures or guideline and policy for the outsourcing of information systems in place. The banks have a very clear about the importance of managing the relationship with the service provider to discuss the performance and the service quality. However, respondents argued that there is detail communication mechanism that of the SLA and the contract negotiation. And also banks have a controlling mechanism to check the performance and service quality of the service provider. Banks have the procedure that follows to measure the success/failure of outsourced information systems by top IS managers.

According to the IS manager respondents, banks manages the performance of the service provider and monitors the vendors. In the bank, IS manager has a poor communication to their employees, i.e. the risks they faced or challenged by outsourced IS recognition are not appropriately communicated to employees in the banks. The bank has not a properly process to audit the service provider to assess its compliance with the policies, procedures, security controls and regulatory requirements.

According to the survey about the confidential data, the banks have a written undertaking document of the policy to protect and maintain the confidentiality of sensitive data. As the IS managers responds that the service provider considered about a clearly identifies of the banks sensitive data like customer data, documents, records and assets to protect were

their confidentiality. As reported by the respondents the banks were not gave privileged access or remote access to performed systems for the outsourced services.

To prevent unauthorized access to bank's information assets by the outsourcer or sub-contractors, suitable security controls are required in the banks. According to survey of the data banks have controlled the access activities of privileged accounts are logged and reviewed regularly basis, audit and activity logs are protected against tampering by privileged users and protecting and managing the banks properly integrity checks are implemented to detect unauthorized changes to databases, files, programs and system configuration from attackers of the banks. Properly management of access rights and password controls for the outsourced systems and applications are reviewed for compliance on a regular basis to protect the service of the banks from attackers of the service provider. According to the study, banks have a contingency plan in the event of unexpected stop of the service provider and have the right to terminate the SLA in the event of default. When the SLA or contracts are terminated with the service provider, bank has considered to have all IT information and assets promptly were removed properly.

5.2 Conclusion

The purpose of this research was to investigate that information system risks and risk management of banking industry in Ethiopia. As a result, the research investigates that the outsourcing process reasons, associated risk and risk management practices being followed by banks in Ethiopia. Concerning the IS outsourcing strategy as it was exposed by most of the respondents, the Ethiopian banks does have an explicit outsourcing strategy for IS outsourcing projects. On the other hand, most of the respondents revealed that there is a high intention to improve service quality through IS outsourcing. Outsourcing decisions are strongly influenced by the expected benefits in the banks because the reason to IS outsourced is to improve service quality, to access better skill and expertise, to focus on core competences, to acquire new technology, to improve flexibility of the service and reduce the cost. In line with this, there were also a number of problems or risk mentioned by respondents due to access and security risk, loss of control risk or lack of proper control, strategic risk, loss of innovative capacity, financial risk etc.

As risk management in the banks, it was revealed by most of the respondent in the banks have structured risk management procedures or guidelines for the outsourcing of IS in place. However, the majority of the bank has not documented risk assessment of the outsourcing well including risk assessment of security against the latest security threats and in the bank the risks and management's recognition are not appropriately communicated to employees. Banks have a formal channel of communications between service providers to resolve issues related to outsourcing and identify the issue of the vendor's performance being measured. However, in the banks the existence of a process to audit the service provider to assess its compliance with your policies, procedures, security controls and regulatory requirements was not appropriately analyzed. In general control of vendor performance and deliverables was done through the SLAs and communication was done through formal documents.

Protecting confidential data and access management in the banks were considered to be important, so according to the respondents there is a high protection of the sensitive data and there was a proper access managements are reviewed regularly basis in the banks. In general there was a risk management practice in banks.

Finally, banks have a contingency plan in the event of unexpected stop of the service provider i.e. the risk that appropriate exit strategies are in place and not only a contingency plan, they have a right to terminate the SLA in the event of default.

5.3 Recommendation

- A powerful policy would help banks to have a good outsourcing strategy since the policy is more likely to be followed in the outsourcing process. It is therefore necessary that managers in the banks develop the IS outsourcing policy. And Government or national bank of Ethiopia should also indicate policy directions for IS/IT outsourcing procedures in the banking sector.
- Furthermore, the banks must create efficient and effective communication with and between service provider to secure continued support from all stakeholders, to balance their interests and to make the IT outsourcing arrangement so that all service providers achieve their objectives.

- Banks should have a documented risk assessment of the outsourcing well including risk assessment of security against the latest security threats are very important before they outsource the functions.
- Bank has to make the decision for outsourcing involving the top level managements at the information systems department in general. In addition, a strong communication and relationship between the management and the employees needs to be maintained when outsourcing is considered as an IS/IT management strategy and risk was recognized.
- Bank should consider the future growth of customers and the growth that the technology will show as well as ongoing projects in the near future during the decisiontooutsource.

5.4 Future studies

- This research is conducted considering a nine banking sector found in Addis Ababa Head Office that doesn't represent the whole banks. Hence other studies can be made considering all the other uncovered banks and financial sectors for understanding the similarities and differences of the experiences, problems, and causes for the problems across the banks/financial sector in Ethiopia.
- This research is conducted considering the customers' side of the parties involved in outsourcing. So future studies can be made considering both the vendor and the customer to overcome the limitation of this study.

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APPENDIX:

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

COLLEGE OF NATURAL SCIENCE

DEPARTMENT OF INFORMATION SCIENCE

Questionnaire to be filled by bank Staff

Dear Respondent

The purpose of this questionnaire is to gather information related to information system outsourcing risks in the banking industry. The data to be collected through this questionnaire will be used only for the purpose of educational research. Your responses will be kept confidential and you will not be asked to disclose your identity.

The success of this study largely depends on your honest and sincere responses that you make to each question items. Therefore, we kindly request you to provide the required information as much as possible.

Thank you in advance for your cooperation!

Section 1

Demographic Information

Instructions:

You will be asked a few demographic questions. Please respond by putting '✓' in boxes or write the answer in the space provided (if any other).

1. Sex Male ☐ Female ☐
2. Age: ☐ 20 and below: ☐ 21-30 ☐ 31-40
   ☐ 41-50 ☐ 51 and above
3. Educational Level:

   ☐ Certificate/level I-III Diploma (Level IV) ☐ BA/BSc/BEd
   ☐ MA/MSC and Above

   If any other, please specify_____

4. What is your position in the bank?

   ☐ Director ☐ Manager ☐ Supervisor/Team Leader

   Other (please specify) _____

5. Which one of the following categories best describe the nature of your bank?

   ☐ Government
   ☐ Private

Section 2

General information related with the topic

1. Does your bank outsource any IS/IT services? Yes ☐ No ☐

2. Which types of Information system functions are outsourced in your bank?

☐ Enterprise Resource Planning (ERP)
☐ Applications Development
☐ IT security services
☐ Help desk support
☐ Network services/Communications services
☐ Data center operations
☐ PC and office equipment Maintenance
☐ ATM
☐ Website hosting

Other (please specify) _____

3. How do you rate the overall outsourced information system projects success?
(Put /Mark)

☐ Very satisfied
☐ Unsatisfied
☐ Satisfied
☐ Very unsatisfied

Section 3

The Reasons to outsource

1. Below are some of the factors or reasons that drive a company to outsource its IT/IS functions. Please indicate the importance of each factor or reasons by putting a tick (/)mark at the corresponding column from strongly agree to strongly disagree(i.e. Strongly Agree=5, Agree=4, Neutral=3, Disagree=2, strongly Disagree=1)

No	The reasons to outsourcing	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	To Focus on core competences					
2	To reduce Cost					
3	To access better skill and expertise					
4	To improve flexibility of the service					
5	To improve service quality					
6	To acquire new technology					
	Other justification: (Please list and rate them):					

Risks to outsource

2. Please indicate that the Perceived risks of information systems outsourcing by putting a tick (/) mark at the corresponding column from strongly agree to strongly disagree (i.e. Strongly Agree=5, Agree=4, Neutral=3, Disagree=2, strongly Disagree=1)

No	Perceived risks to outsourcing	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Strategic risks (The risk of loss of organizational knowledge and competencies)					
2	Financial risks (Risks of cost overrun, resulting in less than expected savings)					
3	Performance oriented risks (Non receipt of service or receipt of service of lower quality.)					
4	Reputational risk (the risk that the company loses customers, key employees, or it ability to complete due to perceptions, impacting the company's reputation in the market)					
5	Compliance risk(Events may occur which will impact the company's ability to comply with the rules and regulations to which it is obligated)					
6	Operational risk(Risks of IT services failure resulting in inadequate or unsatisfactory customer service, or loss of organizational resources)					
7	Contractual risk					
8	Access and Security risk					
9	loss of control risk					
10	Inexperienced Staff(lack of expertise of the vendor)					
11	Loss of Technical Knowledge					
12	Loss of Innovative Capacity					
	Other justification: (Please list and rate them):					

Section 4

Risk Assessment and Management

1. Has your bank performed a risk assessment of this outsourcing arrangement, including security risk assessment against the latest security threats?

   Yes ☐ No ☐

2. Does the bank have risk management procedures or guidelines for the outsourcing of information systems?

   Yes ☐ No ☐

3. Management fully considers risks in determining the best course of action.

   Yes ☐ No ☐

4. The existence of risks and management's recognition of this is appropriately communicated to employees.

   Yes ☐ No ☐

5. Do you have the procedure that the bank follows to measure the success/failure of any outsourced information systems?

   Yes ☐ No ☐

6. Is there any formal channel of communication with the service provider to discuss the performance and service quality?

   Yes ☐ No ☐

7. Is there a vendor management process to monitor the performance of the Service Provider?

   Yes ☐ No ☐

8. Does your bank have a process to audit the Service Provider to assess its compliance with your policies, procedures, security controls and regulatory requirements?

   Yes ☐ No ☐

Section 5

Protection of sensitive/confidential information and Access management

1. Have you obtained from the Service Provider a written undertaking to protect and maintain the confidentiality of your sensitive data?
   Yes ☐ No ☐

2. Is the Service Provider able to isolate and clearly identify your sensitive data (e.g. customer data, documents, records and assets) to protect their confidentiality?

   Yes ☐ No ☐

3. Does the Service Provider have privileged access or remote access to perform system/user administration for the outsourced service?

   Yes ☐ No ☐

   If so, does the Service Provider have access to your organisation's sensitive data?

   Yes ☐ No ☐

4. Are the following controls and measures put in place at the Service Provider?

   a. The activities of privileged accounts are logged and reviewed regularly.

      Yes ☐ No ☐

   b. Audit and activity logs are protected against tampering by privileged users.

      Yes ☐ No ☐

   c. Access to sensitive files, commands and services are restricted and protected from manipulation.

      Yes ☐ No ☐

   d. Integrity checks are implemented to detect unauthorised changes to databases, files, programs and system configuration.

      Yes ☐ No ☐

   e. Password controls for the outsourced systems and applications are reviewed for compliance on a regular basis.

      Yes ☐ No ☐

   f. Access rights for the outsourced systems and applications are

reviewed for compliance on a regular basis.

Yes ☐ No ☐

Section 6

Exit Strategy

1. Is there a contingency plan in the event of the unexpected cessation of the Service Provider?

   Yes ☐ No ☐

2. Do you have the right to terminate the SLA in the event of default, ownership change, insolvency, change of security or serious deterioration of service quality?

   Yes ☐ No ☐

3. In the event of contract termination with the service provider, either on expiry or prematurely, are you able to have all IT information and assets promptly removed or destroyed?

   Yes ☐ No ☐