Addis Ababa University (AAU)

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IT PROJECT OUTSOURCING RISK MANAGEMENT PROCESS MODEL FROM THE CLIENT AND VENDOR PERSPECTIVE: THE CASE OF ETHIOPIAN BANKING SECTOR

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Declaration

I declare that this thesis is my original work and has not been submitted for any Degree in any other University. I have undertaken the study independently with the guidance and support of the research advisor.

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

Advisor: _____

Tibebe Beshah (PhD.)

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List of Acronyms

HLI - Higher Learning Institution

IS - Information Systems

IT - Information Technology

ITO – Information Technology Outsourcing

NBE – National Bank of Ethiopia

OSC - Outsourcing Consumer

OSP - Outsourcing Service Provider

SLA – Service Level Agreement

SPSS - Statistical Package for Social Science

TOR – Terms of Reference

USI - Universal System Integrator

Abstract

IT outsourcing is global business trend that involves client and vendor. Both client and vendor achieved their goal from successful completion of the outsourced project. However there are risks which affect the project success. Risk identified and managed from either side of client or vendor firms may not guarantee success in the project outcomes. This study aim to identify IT project outsourcing risks from both client and vendor perspective and propose risk management process model to handle those risk factors.

This study involved participants from both client and vendor organizations. Questionnaire and Interview were used to collect the required information which follows qualitative and quantitative data analysis with basis of literature. Some of the risk factors identified in this study were adopted from recent literatures. While other risk factors like employee turnover, fear of losing control, user and management expectation on project implementation and requirement change are risk factors identified by client and vendor participants in the current study.

The client and vendor had significantly different rating towards risks presented here. Lack of knowledge transfer, Lack of experience and expertise with project activities, Lack of team morale, and Lack of schedule and budget management scores the highest percentage rate by client respondents. Whereas the vendor respondent's highest rating resembles towards lack of schedule and budget management, Lack of top management support, client readiness, unclear requirements and failure to consider all costs. This study also intend to present risk management considering both client and vendor firms. Since client and vendor have different objective and interest within a project, the analysis result shows that the identified risk factors by both firms need mutual cooperation. Communication and partnership approach between two parties are essential factors to ensure the sustainability of IT project outsourcing.

Keywords: IT Outsourcing Risk, IT Outsourcing Risk Management

CHAPTER ONE

INTRODUCTION

1.1 Background

Companies choose to outsource their information technology system projects and services due to many reasons. Those reasons are focused on business profitability, efficiency and to expand their business interests in order to reduce risk (Kavanagh, 2014; LP Baldwin, Z Irani & PED Love, 2001). Ethiopian organizations use outsourcing for non-core business functions like maintenance services, security services and information technology services (Meresea, 2007). The main reasons for dominating on the above non-core business functions is that it allows them to focus on core business, improving service level, gaining innovative ideas and cost saving. There are also a variety of benefits for organizations to choose IT outsourcing, including cost reductions, variable capability approach and reduced management time spent on IT (LP Baldwin et al., 2001).

Besides acquiring variety of benefits from IT outsourcing, there are a significant number of risks in IT outsourcing (Nduwimfura & Zheng, 2015). When companies decide on outsourcing it has to carefully measure the associated risks and prepare to minimize or address those risks to achieve the benefits of outsourcing. Outsourcing organizations are minimizing their risks by outsourcing their activities into suppliers, so the risks for IT vendors are rising. Managing client and vendor risks are a key factor that will make the outsourcing arrangement either a success or a failure (Tho, 2005). Since risks may drive the failure of outsourcing project, it affects IT vendors too. Hence, it is crucial for vendors and outsourcing organizations to investigate and manage the risks related to outsourcing (Liu & Yuliani, 2016).

Clients and vendors are two types of organization that involve in IT project outsourcing. The client needs a reliable product to be delivered on scheduled

time, without defects and within budget. The vendor aims to complete the projects with the appropriate time and planned cost (Liu & Yuliani, 2016). Vendor and client might have or represent different interests within projects. Therefore depending on the role they play and the benefits they are intending to gain from the implementation of the project, a diverse level of commitment and involvement is expected. The main thing they have in common is interest of achieving a successful project or at least avoiding failure (Medina, 2016).

The objective of both client and vendor is to complete the projects within a budget, on time and with a good product. They both need to understand, collaborate and manage the risks they face during the process. Outsourcing succeeds only if the vendor, as well as the client, achieves expected benefits. Outsourcing has to be progressed in a planned and strategic way where collaboration between the client and vendor are targeted to the achievement of mutual goals, which is especially valid for IT outsourcing (Alexandrova, 2012).

Organizations which are engaged with IT outsourcing are encouraged to adopt risk analysis and management of those risk to effectively mitigate outsourcing risks. Outsourcing software and system projects have some specific features that need special coordination mechanism from both client and vendor (Sabherwal, 2002). In this study the risks of IT project outsourcing from client and vendor perspective were identified and management process model for those risk's developed.

1.2 Statement of the Problem

Outsourcing companies and IT vendors expect to have advantages like increased availability of resources, higher quality of service and focus on core competencies (Kavanagh, 2014; LP Baldwin et al., 2001; Sharma et al., 2008). But there is a large amount of projects where these advantages are not reached. It's important to realize that IT outsourcing often is a difficult and complex process (LP Baldwin et al., 2001); therefore it is associated with a high amount of risks.

Many organizations in Ethiopia enter to global trend of outsourcing in order to be competitive and meet their strategic plan. Many researchers identify that outsourcing IT projects are not successful in most cases. Most of clients are dissatisfied with some aspects of their vendors on IT projects outsourcing; only half of IT outsourcing agreements is delivered (Tho, 2005). There are risks in both client and vendor side that we should give attention. Benefits that are expected to be achieved from outsourcing may be ruined by these risks, so the risks must be identified and then mitigated to ensure that organizations will meet their outsourcing goal (Ongwattanasirikul et al., 2013).

A number of researches have studied risk analysis and management to analyze IT outsourcing and have provided useful insights into the phenomenon. However much attention has been paid to client oriented IT outsourcing, but much less attention has been given to the viewpoint of the IT vendors. So risks for IT vendors are under explored (Muluneh, 2009; Daniel, 2010). Most research was conducted mainly from the client's perspective because the objective of outsourcing is to self-minimize client's internal resources.

In our context most studies focused on client side instead of including both client and vendor firms (Muluneh, 2009; Daniel, 2010). There were few studies in other contexts that investigate these facts from vendor and client perspective and the result was the client and vendor consider the risk factors in their perspective structure and organizational goals. In connection to this Liu & Yuliani (2016) explored the perception gaps regarding IT project risks between the client and vendor and the findings of the researches revealed that the client and vendor have diverse perception of project risks. Thus it provides the evidence that the clients and vendors perceived the importance of project risks differently; i.e. there were disagreement between client and vendor that some factors which are considered important for client may not be viewed the same from the vendor side. So the results of identifying risk perceptions broaden the understanding of IT project outsourcing risk, and provide insights that may help facilitate the success of IT outsourcing. Similarly some researchers have

suggested successful risk management as a key factor in successful IT projects outsourcing (Didraga, 2013). However risk management from only one side of perspective may omit critical risk from the other side which may affect the whole project. Thus investigating the trends in our context considering both parties is found crucial. And it is also vital to investigate which side of the risks are more important risk factors.

Therefore, based on statement of the problem mentioned above, this study tried to answer the following research questions:

- What are the important risk factors on IT projects outsourcing?
- What are the risk factors from client perspectives?
- What are the risk factors from vendor perspectives? and
- How to develop risk management process model to those risk factors?

1.3 Objective

1.3.1 General Objective

The general objective of this study is to investigate IT project outsourcing risks from client and vendor perspective and to develop a risk management process model.

1.3.2 Specific Objectives

- To identify important risk factors on IT projects outsourcing
- To identify risks from client perspectives
- To identify risks from vendor perspectives
- Develop risk management process model for both client and vendor
- To draw conclusion and forward recommendation for future study

1.4 Significance of the Study

This research contributes to the IT outsourcing domain, risk analysis and management domain. It's quite innovative because the risks in outsourcing researches are most of the time client oriented instead of including vendor oriented too so it provides another view with new insights. Successful project

resulted from the positive approach between client and vendor. It will help organizations to consider the risks from both perspective and mitigate these risks using the appropriate technique. This study could also be used as an input for further studies in this area.

1.5 Scope and Limitation

This study will only investigate IT projects outsourcing. It includes limited no of client and vendor organizations who participate in IT Outsourcing. Thus it may miss risk factors that may arise by other organizations. The client respondents included in this study are also drawn from the banking sector only.

1.6 Organization of the study

This study consists of five chapters. Chapter one presents the introduction background, statement of the problem with research questions, the general and specific objective of the study, significance of the research and scope and limitation. The second chapter is about literature review on theoretical and empirical researches related to IT outsourcing, IT outsourcing risks and risk management for IT projects outsourcing. In Chapter three the research approach, research sampling, data collection procedures, data analysis technique and data validation are discussed. The fourth chapter presents the quantitative and qualitative results of the study. The findings were presented based on the specific objective and research question of the study. It presents the proposed IT project outsourcing risk management process model. It also includes discussion on the findings among previous literatures result. The last chapter presents conclusion of the study and recommendations for future study.

CHAPTER TWO

LITRATURE REVIEW

2.1 Overview

In order to have an in depth understanding of IT project risks from client and vendor side, different research articles are reviewed from various sources. This chapter covers both theoretical and empirical literature review of general and related topics to support this study.

2.2 Outsourcing

To deliver valuable product or services in their market and for supporting their business process, organizations use various technological and managerial solutions. These solutions may be developed using internally –insourcing or externally – outsourcing approach (Filipe de Sá-Soares et al., 2014). But these days outsourcing is dominating and became a growing trend for an organization to remain competitive in a global market (Bosire, 2015) and to reduce overall costs (Kavanagh, 2014).
Outsourcing is defined as:

"Acquiring a product or service rather than producing it yourself"

"The contracting out of a company's non-core, non-revenue-producing activities to specialists"

"Transfer or delegation to an external service provider the operation and day-to-day management of a business process"

The above definition shows that outsourcing is all about passing risks and production process to another external party rather than responsibility.

There are different reasons for the company to decide on outsourcing the most cited reasons for outsourcing are,

Financial factor: - cost is primary reason for outsourcing (Zainuddin, Bassellier & Benbasat, 2012; Kavanagh, 2014). Although there are numerous factors for outsourcing; for client organization cost will be a key factor to influence outsourcing, providing high quality service with low price.

Focus on core competence: - is also popular reason for outsourcing. One of the reason company's desires to outsource is that it enables them to focus on their core business functions. Every company has limited resources and this limited resource may not be enough to control multiple activities that the company needs to address (Onoriode & Ngansi, 2009). Focusing on the core competence also helps to increase companies' competitive advantage.

Quality and Capability: - The vendors specialize on the specific service and functions they intend to give support. The client organization benefits from the quality and performance of the service.

Access to Global talent: - Cope up with current technology and trend in business keeps the organization's competitiveness across the global market. It enables the company to control different location by reaching to the customer end.

An organization's decision making process in its sourcing option and the outcomes supposed to be supported in different stages. Finlay and King (as cited by Attai, Stephen & Innocent 2013) the process of outsourcing consist of six stages;

a) **Strategy:** At this stage the top management decides whether to outsource or not. If the outsourcing decision is done, they will identify core competent areas which need outsourcing.
b) **Selection:** Once the client organization makes decision on outsourcing, selection of suitable vendor is next step by considering price and competence in the area.

c) **Negotiation**: Define scope and timeline of the outsourcing project, negotiating of agreement details and signing the final contract with the selected vendor(s).
d) **Implementation:** preparing a detailed schedule and budget to launch the task, planning of transition of work and knowledge transfer.
e) **Management:** monitoring and managing schedule, risk, quality and customer satisfaction from both client and vendor side.
f) **Completion:** Final phase to formally close the project activities in mutual agreement with both client and vendors.

Dibbern et al. (2004) summarize the outsourcing process as, an organization measure the benefit and drawback of IS outsourcing then address the outsourcing arrangement it requires and make final decision among various outsourcing options. After decision is made on outsourcing, the organizations pass through the selection of the vendor and develop and strengthen client-vendor relationship and manage the relationship. Later the consequence of outsourcing either success or lessons from the outsourcing is revealed.

Gallivan & Oh (1999) classifies outsourcing arrangements based on the no of client and vendor involved in the outsourcing project.

- Simple outsourcing relationship – One Client, One Vendor
- Multi-vendor relationship – One Client, Many Vendors
- Co-Sourcing Relationships – Many Clients, One Vendor
- Complex Relationships - Many Clients, Many Vendors

2.2.1 IT Outsourcing

"When an organization doesn't have the internal IT capabilities required for the provision of all of its IT services, it must look for external organizations able to fill the gap. This practice is named Information Technology Outsourcing - ITO." (Bezerra et al., 2014). Kishore et al (2003) also describe the definition of IT Outsourcing as "the contracting of various information systems functions such as managing of data centers, operations, hardware support, software

maintenance, network, and even application development to outside service provider".

IT infrastructure outsourcing and IT application outsourcing are two kinds of IT outsourcing mentioned by (Joha, 2003).

IT infrastructure outsourcing: - includes developing software, operating and managing operating system, purchasing and maintaining hardware. Network and telecommunication services is also felt under It infrastructure outsourcing category.

IT application outsourcing:- concerns with application development, support and maintenance. Within application development there are defining requirements, developing the code, planning, testing and monitoring application. Application support and maintenance is about ensuring availability and delivery of application, updating the applications with latest version, and giving support for the issues that may arise on the developed application.

Organizations benefited from IT outsourcing if the organization knows why it needs outsourcing and how to managing it. Furthermore, the organization needs to identify the strengths, weaknesses, and the basic needs of its IT department in comparison to the strategic benefits they can achieve through outsourcing.

In addition to the above benefits Onoriode & Ngansi (2009); Harland et.al, (2005) state that outsourcing providers becomes more advanced in IT infrastructure and operations so that it will allow the organization to exploit and benefit from their advanced technologies. The skill, staff and resource of organizations may not be adequate for developing and running some functions; with this fact outsourcing those functions to vendor who is specialized in those functions will enabled the organization to benefit from the technology and to have an access to new skills.

Douglas and Scott (as cited by Onoriode & Ngansi, 2009) describe the four points in which an organizations should consider before adopting IT outsourcing.

• An organization needs to evaluate its current functional business practices and requirements in order to point out what functions to outsource and what functions to perform in house.

• Searching appropriate service provider with an in-depth knowledge including capabilities, delivery process, quality of work and ability to innovate.

• Have expertise on legal and technical aspect to sign contracts and service level agreements (SLA) in order to control over the outsourcing projects. And develop strong relationship with vendors.

• Plan the business activities by considering consequences, then formulate different strategy to manage and mitigate the risks arise during outsourcing process.

IT capability is an important aspect that we should think through when we talk about IT outsourcing. Technical and Managerial capabilities, organizational relationship capability and vendor management capability are the main capability role for successful IT outsourcing projects (Bosire, 2015). An organization's IT capability enables to control the vendor's technical expertise and effectively monitor vendor's work. Hyun-Soo et al. (2013) also explored that IT capabilities of client and vendor affected the effectiveness of IT outsourcing. In their findings well matched IT capability levels of both parties leads to higher success.

The decision to outsource IT services is not an easy tasks. It requires understanding organizations core business and strategic approach it follow to achieve its objective. Effective IT outsourcing can lead an organization to better access to global market place while poor IT outsourcing can lead to lose in market share and weaken organization's core activity.

2.2.2 Outsourcing from the Perspective of the Client

The main initiator or supplicant of outsourcing is client organization. Organization classifies its activities as core and support activities. They possess professionals to handle the activities but it's hard to find an expert in all the tasks. From an organizational perspective, they prefer to spend time on doing and improving core activities rather than spending time on other ancillary tasks. On the other side the ancillary activities might thus be performed effectively and efficiently by another organization that are best on doing this tasks. Hence the clients essentially follow best practice for an outsourcing approach starting from selecting the type of tasks and the appropriate vendors to monitoring the outsourcing projects for better outsourcing output.

The client organizations expected to complete a project at the lowest possible cost, as quickly as possible and with the highest quality. They are in charge of vendor selection, relationship management, planning and monitoring evolving technologies and managing its capability to make sure that the resources are suitable to meet organizational needs (Levina & Ross, 2003). The three factors that the success of outsourcing influenced by include executive-level support in the client organization for the outsourcing objective, communication and the client's ability to manage its vendor organization (http://www.sourcingmag.com /what-is-outsourcing/).

One of the challenges from the client organization mentioned by Agrawal (2014) is the assurance of whether the vendor is updating itself with new technologies to keep up with the customer's perception of the business need with latest technology. Despite their experience and reputation vendor must keep technical competence and an understanding of the client business by quiet having the ability to work through future challenges that may arise (Lewis, 2015).

2.2.3 Outsourcing from the Perspective of the vendor

The case study of Levina & Ross (2003) indicates that vendors address client requirements and business conditions, efficient service delivery and decisions on large number of projects. To reduce encountered risks, vendor understanding of client's objective and their needs from outsourcing has brought a chance of succeeding the outsourcing project (Bosire, 2015). Some argued that the vendor's involvement in strategizing meetings associated with the outsourced business function has vital aspect in passing professional decision for accomplishing the task. Though one of the advantages for outsourcing is achieving cost efficiency, delivering poor quality of service using low cost offer is not an option. There should be fair negotiations that would be practical for both parties.

In outsourcing project one of the key features for vendor is ensuring maximum effectiveness during outsourcing process. Service provider can achieve success or be effective in outsourcing project. Effectiveness can be an element which leads to success but success can be achieved without effectiveness, thus not exploiting all benefits and reaching total customer satisfaction is considered as success for vendors (Lewis, 2015).

Case study conducted by Lee (2008) shows three different categories of vendor organizations.

- Pure global vendors - International market
- Pure local vendors - Local and limited international market
- Joint companies between a customer and a vendor - The customer oriented services in local market

Vendor organization also has different sectors to verify the outsourced project's overall process. According to Lee (2008) there are three main parts in vendor's organizational structure. These are,

- A review board- check if the outsourced project is feasible and profitable

- An enterprise outsourcing support group - as a group of independent teams in a cost center division, and
- An actual project group for the existing and potential outsourcing projects - under the supervision of a profit-center division

2.2.4 Outsourcing from the Perspective of the relationship

Involvement of both parties reflecting mutual interest is a crucial aspect. Outsourcing success is viewed as the achievement of strategic, economic, technological or other benefits by both parties (Lewis, 2015). In outsourcing projects there should be a skill from both client and vendor sides to facilitate negotiation, communication, project management, the ability to understand the term and condition of the contract, service level agreements and willingness to be flexible as business demand changes over time. Among these, effective communication between the vendor and the client is the major key in achieving success with outsourcing strategy (Sharma et al., 2008).

From varies aspects of vendor-client relationship Poppo, (2002); Sabherwal, (1999) (as cited by Levina et al.) point out that interpersonal trust and contractual aspects of the relationship are equally important. However the challenges and reasons for failed relationship between the two organizational partnerships includes differences in cultural, geographic and ethical aspects and government regulations (Kavanagh, 2014).

Both the client and vendor need to share their knowledge to create a strong long term relationship with aligned approaches and focus on success for the client allowing to cut costs and maximizes process efficiency and success for the vendor to seeks business growth and long term strategic client retention (Kavanagh, 2014). A partnership approach of sharing risks and rewards may be more effective in bringing both parties to successful project outcomes (Natovich, 2003).

2.3 IT Outsourcing Risks

Risks are defined as uncertainties and un-desirable events that can impose severe consequences on any business. Outsourcing has both benefit and risks. Risks may bring outsourcing project failure if it's not managed properly; hence many researches focused on risk management in IT outsourcing. Identifying and managing risks are considered as a vital part of IS outsourcing (Nduwimfura & Zheng, 2015).

Mirkovic (2007) Classify risks as external and internal risks. An internal risk occurred on strategic and operational business process which mostly depends on peoples actions within the organization. Strategic and operational risks are caused by failure on strategic business decision, internal business process, internal system operations, or management. An external risk occurs beyond the control of the organization. Both external and internal risks have an impact on the objectives or goals of an organization.

The success or failure of an outsourcing contract depends on the risk encountered on the project. The most important risk raised by client organization while outsourcing is dependency on external service provider which brings loss of control and impact on quality (Kavanagh, 2014 ; Sujecki, 2014). In addition to this, loss of knowledge is another risk that client organization could face due to lack of expertise within its firm to perform tasks (Kavanagh, 2014). Beside The most risks from vendor side arise in project management and sales contract and development activities (Mirkovic, 2007). The operational risks are also shifted to the vendor side because in outsourcing deal the technology, tasks processes and people belong to the vendor who is working for the client (Mirkovic, 2007). So to manage these risks the vendor needs to have an adequate risk management. Though organizations choose outsourcing to transfer risk to vendors Natovich (2003) argued that organization may not reduce the traditional IT project risks and driving all risks on vendor is not practical.

Client organizations struggle with the challenges of effectively managing it's IT outsourcing as well as the risk that comes with outsourcing from external vendors. Though it's important to classify risks to be managed in both clients and vendors perspective, there will always be a certain level of risk that is taken by both sides (Lewis, 2015).

2.4 Managing risks in IT Outsourcing

According to the literature on Didraga (2013) the success of IT projects is influenced by risk and risk management. Hidden costs, poor cross-cultural communications, and poor communication between the vendor and client teams are the key reasons for poor management in outsourcing (Sharma et al., 2008).

Although client and vendor organizations face many risks when involving on outsourcing services, they are apparently capable of managing these risks by implement mitigating activities to reduce the risk of reliance (Sujecki, 2014). Based on the empirical study reported in Sharma et al. (2008) effective management of technical communication at every stage of IT outsourcing project helps to reduce and mitigate the associated risks and establish trust in their relationship.

One of a key strategy to minimizing risk is to involve both parties and share the risks to develop better mutual understanding of how to address issues as they arise by increasing the level of understanding of behaviors, goals, and policies between parties. This strategy can help to avoid social, operational, and legal challenges with the outsourcing process (Lewis, 2015).

Many studies point out that IT outsourcing evolved from simple client-vendor decision to complex partnership. This complexity feature of IT outsourcing brought greater concern for the management of outsourcing between client and vendor. Lee et al. (as cited in Bahli, 2010) emphasizes this as the shifting of the nature of information technology outsourcing from contractual to partnership based relationships. The risks and conflict between client and vendor in an

outsourcing project can be addressed by well-defined outsourcing process and effective management of these outsourcing processes (Lee, 2008).

To manage and mitigate risks, both clients and vendors need to identify and understand risks. There are many researches and risk assessment models. Mirkovic design a model that categorizes the overall process of risk management into five steps as described below.

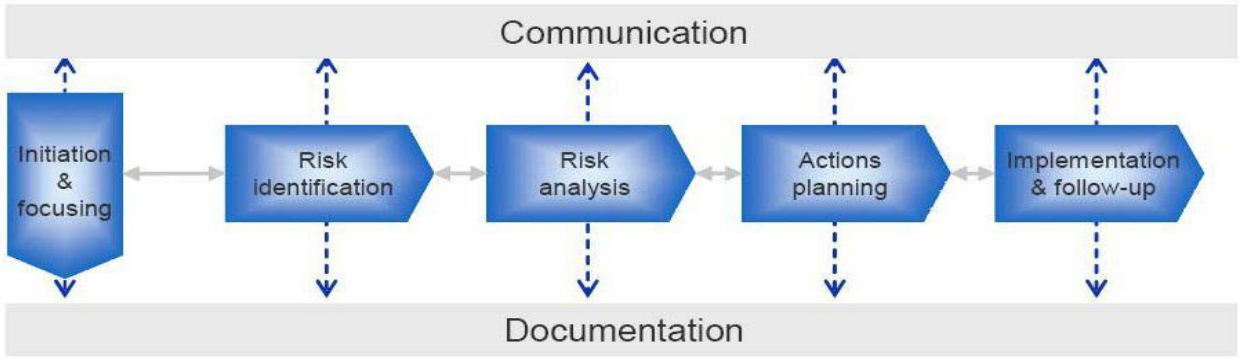

Figure 1: Risk Management Approach (DNV) (Mirkovic, 2007)

2.5 Related Literatures

Most studies on IT outsourcing focuses on client side. There is no local study which address IT outsourcing risks from both client and vendor side. However there are studies conducted that include some aspects of this study.

Liu, Yuliani & Chen (2014) on their research entitled "IT Outsourcing Project Risks: From Client and Vendor Perspectives", identify risk factors of IT outsourcing project from client and vendor perspective and the author also analyze (compare) their difference. As reported in this study the different perception of project risks among two parties create a gap on the risk expectation and impact on planning risk control.

The researcher uses Delphi study to produce a rank order list of risk factors. The researcher participate the experienced IT project managers from the client side and other participants from vendor side which are familiar with IT outsourcing project and let the vendors and clients to rank risk factors from

the lists. The finding of the research shows out of 20 risk factors the clients and vendors agreed on only 5 risk factors. Lack of communication between the client and vendor, lack of top management support of the project, incomplete outsourcing contract, lack of schedule and budget management and inadequate project planning are the five mutual risk factors agreed by both parties. There were different perceptions on some risk factors to rank it as important or not. The clients' ranked lack of vendor commitment to the project, and client's poor vendor selection criteria and process as important factors. On the contrary, the vendor's most important risk factors were requirement misunderstanding, and lack of experience and expertise with project activities. The study concludes that the client and vendor perceived the importance of project risks differently. In this study the author participate both client and vendor. However, the researcher uses only ranking to identify risk factors. It only prioritizes IT outsourced project risks.

Similarly Taylor (2004) conducted research in title "risk factors in vendor-driven IT projects", he identify risk factors of IT vendor managers while implementing software package on specific project. Identifying risk factors for IT projects support the managers in decision making process. Though there are many identified risk factors, the practical risk factors presented in projects are not revealed. The author pointed out that software packages are highly associated with risks and some of the risks are unique risks. Instead of simply list out all the possible risk factors, the study explore specific risks which appeared in software package implementation and management of these risks were also presented.

To understand the decision making process of possible risks contextual information is needed. Thus the research has exploratory and descriptive property. The participants are experienced project managers drawn from 12 different organizations with in Hong Kong. Semi structured interview was used as data collection method. The data were analyzed with qualitative approach using NVivo software. The analysis done in two different ways the first analysis

was based on the responses by project managers and the other was based by project basis.

The author developed new framework based on the data collected through interview and data analysis. From the result key risk factor at project manager level is presented from three different perspectives. He expands the risk categories as vendor risks, client risks and third party risks. From vendor perspective the risk factors includes top management support, project management time and cost documentation, competition in the marketplace and pressures to their own firm's status on the technological aspects. From clients perspective the risks related to business changes on future, experts for their firms, staffs poor performance on the project, lack of technical knowledge, and client readiness for the new system are the main risks that vendor project manager must manage. The third party perspective is integration between the third party and vendor, and between vendor and client. Cooperation and Compatibility issue among two parties is required.

In addition, Liu & Yuliani (2016) distinguished that the vendor and client have diverse perception on project risks, which may lead them to misunderstanding and conflicts. Considering this fact the researchers attempt to identify the agreements and disagreements between clients and vendors on risk factors in IT outsourcing projects and also address the approaches to reduce disagreements and mitigation of those risks.

On their literature they noted that hidden cost is mostly occurred problem from client side. Lacks of information sharing, working relationship between client and vendor and monitoring vendors are main risks in IT outsourcing projects. They emphasize that risk identification and risk management are important points for IT outsourcing projects. They also proposed project partnering as a tool to reduce inconsistent risk perception between the two parties and also as a management strategy to mitigate risks, thus to enhance project performance.

They used Delphi survey method. 26 from client side and 20 from vendor side with total of 46 experienced project managers were participated in this study. The study conducted two phases. The first phase was to collect IT outsourcing project risks and the second phase was to rank those identified risks. In the first phase 34 risk factors were identified from literatures. In the second phase the participants allowed to rank the risk factors in 3 rounds to rank their top 20 and top 10 most critical risk factors out of 34 risk factors.

As a result, out of 20 risk factors, only 75 % were chosen important by both vendors and clients. Risk factors agreed by both parties were lack of communication between client and vendor, incomplete outsourcing contract, lack of schedule and budget management and inadequate project planning. Client ranked lack of vendor commitment to the project and poor vendor selection criteria and process as important risk factors that are not considered important by the vendor. While the vendors ranked unclear requirements and lack of experience and expertise with project activities as important factors.

Alexandrova (2012) applies empirical approach to explore key factors that affect success of IT outsourcing partnership. It uses survey data to collect key factors for successful partnership between client and vendor organization in IT outsourcing. Companies transfer IT services to other vendor organization to get access to advanced technology. IT outsourcing become a strategy to enter to global competitive world. The motivation behind outsourcing has extended from simple tasks to complex analytical tasks and development process. Thus in order to achieve the targeted advantage of outsourcing both client and vendors required to have collaboration and partnership, though many organizations failed to practice successful partnership. From this study the outsourcing partnership is directly related the satisfaction with the benefit from outsourcing i.e. satisfaction attained when the objective and expectation from the partnership meet.

The main focus area of this study was on central and eastern European countries. These countries showed a growing demand to IT outsourcing in

recent years. As compared to Asian IT outsourcing companies Central and Eastern Europe has better availability of experts, advanced technology and high quality of services.

The factors influencing the success of partnerships include team working, clear responsibilities of both parties, and flexibility. From the vendors perspective technical competencies, understanding of client's requirement and operation, management of client relation knowledge of subject area and ability to deal with the involving change of technology are the main factors.

There were 11 hypotheses formulated to estimate the degree of success of outsourcing partnership. Case study and survey research conducted on organizations having more than one IT outsourcing projects. Purposive sampling is used to select participants from managerial and expert position. 57 participants involved in a semi structure interviews. From the survey nature of IT outsourcing relationship like motivations, evaluations, problems, reasons and causes have been considered during the interview.

From the findings achievement of contracted goals score the highest valued correlation, Commitment of top management and effective communication between partner organizations has a strong positive correlation to the success of IT outsourcing partnership while establishment of common aims and objectives, Effectiveness of the bidirectional transfer of knowledge, Degree of mutual trust and Competence and expertise of human resources has moderate positive correlation. However security assurance, the interdependence of partner organizations operation and sharing common value are not factor for the success of IT outsourcing partnership. The study provides an empirical evidence for the degree of key factors impact on the success of IT outsourcing partnerships.

Rajiv Sabherwal (2002) conducted a research entitled "The evolution of coordination in outsourced software development projects: a comparison of client and vendor perspectives". Its main focus was on understanding

coordination mechanism and evolution of outsourced IS development projects from client and vendor perspectives. The coordination mechanism of Clients and vendors differs as their concern on the project varies.

The researcher used qualitative approach with case study of seven projects from vendor perspectives and four projects from clients' perspectives. The coordination mechanism facilitate in projects using standard, plan, formal and informal mutual adjustment. The project management plans by communicating through reports and personal visit at client location are used as a mechanism in projects coordination. Uncertainty, efficiency, equity, and relational quality are the factors that influence coordination mechanism. Thus the author emphasize that the coordination mechanism of Clients and vendors differs as their concern on the project varies.

Daniel (2010) on his thesis entitled "Information System Outsourcing; risks and risk management practices: An Investigation into some selected Higher Learning Institutions (HLIs) in Ethiopia." discuss Information system outsourcing risk and risk management practice in selected HLI in Ethiopia with the general research question "How do Higher Learning Institutions in Ethiopia handle risks in relation to information systems outsourcing projects?". From the literature he point out loss of strategic alignment, reduced flexibility, software quality and lack of skilled technical staff are some of the risks associated with IS outsourcing.

The researcher used qualitative research method. Interview and observation for case study is used for collecting primary data. For the case study 3 HLIs which have experience on IT outsourcing has been selected. Total of 10 respondents are chosen among 3 HLIs. The interview address major issues about outsourcing strategy, the effect of outsourcing and the risk management approach.

The author follows the basic step in qualitative research analysis which is data collection, note taking, coding, sorting, and writing. The result and findings

were presented in the form of concept map. Each question is interpreted and the information gathered was summarized in the form of concept map.

From the result all the 3 HLIs participated in this study use selective outsourcing. The result shows that there is poor involvement of top level management whereas the participation of users in outsourcing project is high. Outsourcing has both benefits and risks. The benefits of outsourcing are improved quality service, access to new technologies, Knowledge transfer, and improved management information system. The risks of IS outsourcing are security, understanding users requirement, and dependency on the providers. None of the HLIs has organized risk management techniques of IS outsourcing. This study give insight to the risks and risk management practice in our country, but the author focuses only on client perspective of outsourcing risk.

Table 1: Summary of related works

Author (Year)	Objective of the research	Methods/ Approaches	Findings
Liu et al. (2014)	Examines the risk factors of IT outsourcing projects from client and vendor perspective	Delphi Method	Client and vendor perceived the importance of project risks differently
Taylor (2004)	Identify risk factors of IT vendor managers while implementing software package on vendor driven project	Qualitative Research	Categorize Risks into vendor risks, client risks and third party risks
Liu & Yuliani (2016)	Identify IT outsourcing project risk factors from client and vendor side and mitigation of those risk factors	Delphi Method	IT Outsourcing project risks can be reduced by using partnering relationship approach. And partnering approach can be used as mitigation approach

Alexandrova, M. (2012)	Identify key factors for successful partnership between client and vendor organization in IT outsourcing	Qualitative Research	Identify factors that influence success of IT outsourcing partnership
Sabherwal (2003)	Discuss on kinds of coordination mechanism and how do these mechanisms evolve over the project process	Qualitative Research	Coordination mechanism of Clients and vendors is different
Daniel (2010)	Discuss Information system outsourcing risk and risk management practice in selected HLI in Ethiopia	Qualitative Research	There is no organized risk management techniques

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

The research methodology is a systematic approach to find things out based on the research questions and objectives of research (Hancock et al., 2009). At this point decision are made considering what kind of data to be collected, how they will be collected, the invited participants and how the data will be analyzed.

This chapter presents research approach, sampling technique, data collection and analysis procedure. It also presents the methods that have been used to maintain the reliability and validity of the research.

3.2 Research approach

According to Kothari (2004) depending on the research questions and the type of the research conducted, one can follow qualitative approach, quantitative or mixed approach. Qualitative approach is used to gain an understanding of basic reasons, causes, opinions and drivers. Quantitative approach is used to quantify opinions, behaviors, and attitudes to generalize the result into figure. This study follows both qualitative and quantitative approach. In this study several reasons make both qualitative and quantitative research the most suitable approach. The first reason to select qualitative approach is that there is no study conducted in our context that identifies risks from both vendors and clients' perspective. Therefore, qualitative approach is regarded to be the most suitable option for such investigation. Creswell (2014) emphasizes that when little is known about the research area, qualitative approach can be used to understand phenomenon. And the second reason is, it also allows gaining views of participants when issues are shared between two or more parties. Mirza (2012) point out that to understand view point of phenomenon from the points of view of participants in its particular context, qualitative approach is

more preferable approach. Whereas quantitative approach is selected because it is suitable approach to reach more people and it also provides a statistical measurement that enables comparing distinct perspectives of client and vendor organization.

Therefore in order to clearly articulate risks of IT project outsourcing from both client and vendor perspective, these mixed approaches were determined to be appropriate for the reason that the results of both quantitative and qualitative analyses supplemented each other which offers more understanding of research problem to meet the objective of study (Creswell, 2014).

The study follows inductive approach. As a result of data analysis, theory is developed based on the collected data.

3.3 Data source and Sampling

There are a number of organizations involved in IT projects outsourcing. Moreover financial institutions are greatly outsourced their core banking system to an external third party vendor.

According to the National Bank of Ethiopia NBE (2015), currently there are 19 Banks. The researcher found bank sectors appropriate for this study because this sector is highly involved in IT outsourcing activities. They outsourced their core banking system and other functions to vendors in this country and outside this country. So the sector's experience on outsourcing and technological access made them suitable to represent client organization. Based on the data obtained from Ministry of Trade there are 252 software developer company registered. Vendor participants were drawn from those registered companies.

Purposive sampling was used to select four vendors and three clients' organizations. NIB International Bank, Abyssinia and Wegagen Bank are selected from the client side for the purpose of this study. From vendor side Universal System Integrator (USI) is selected in this study. The second and

third selected organizations are Marakisoft and cybersoft; local vendors also known in software development for government and private sector organizations. The fourth selected vendor is Techno Brain. These organizations are chosen for the purpose that they comprehended outsourcing from vendors within this country and outside this country to broaden the identification of risks in various aspects. Convenience and the access to experts within these firms also promised quality information would be shared in the study.

The target population for the research was drawn from project manager and experts of selected client and vendor companies. The selected respondents also supposed to participate in one or more IT projects outsourcing. Purposive sampling specifically expert sampling was used to select project managers, and expertise from all companies to participate in the study. The research approach used was intensive, and as such placed limitations on the sample size, therefore, a sample of 62 respondents from client firms and 40 respondents from vendor firms with total of 102 respondents were planned, as this was considered adequate to cover the objective of the study.

For qualitative study, six interviews were planned but it was felt that sufficient information had been collected from the first four interviews. So saturation concept was followed to decide on the number. According to Fusch & Ness (2015), data saturation is reached when there is enough information to cover the study and when there is no new insight added from further data collection. Hence interview session include 2 participants from client organization and 2 participants from vendor organizations. The participants were selected based on their awareness, position and experience on the issue under investigation. The experts were chosen to identify the important risk factors that influence outsourced IT project outcomes.

Interviews were all face-to-face with interview times ranging from 40 minutes to one hour per person. Some follow up questions were discussed with the participants.

3.4 Data Collection Method and Procedure

Both primary and secondary sources were used in the study. The primary source was collected through e-questionnaire, and interview. The researcher approached respondents to decide on the convenient option to disseminate the questionnaire. As a result questionnaires prepared using online Google form https://docs.google.com/forms/u/0/. It is found to be easy and interactive for the respondents. Consequently, continuous follow ups and additional notifications were conducted through phone to increase response rate.

The questionnaire development was done by reviewing from literatures and reviewed by experts. Some of the questionnaire items were adopted from the literatures (Liu & Yuliani, 2016; Liu et al., 2014). These literatures are recent and use Delphi study approach. It has list of IT outsourcing risk factors that are collected from vendor and client panelist. Risk factors which are found important for this study were included in the questionnaire.

The questionnaires were developed separately considering both client and vendor organizations. They shared most of the questions; there is slight difference on the content and the questions with in the two questionnaires. The questionnaires have three parts. The first part is about personal information. General questions such as work of experience, and organization's general activities were included to recognize the summary of research situation. The second parts include questions subjected to the respondents to identify risk factors with respect to the 5 point likert scale option ranging from Very High Risk to Very Low Risk. The final part is about Risk management practice and relationship approaches among the client and vendor organization. It also presented in 5 point likert scale type with an option ranging from Strongly Disagree to Strongly Agree.

Along with questionnaire semi-structured interview was designed for collecting data. Qualitative research provides a deeper understanding about the

phenomena under deeper investigation, using tools like open interviews (Hancock et al., 2009). So the primary data was collected through semi-structured interviews in order to provide the flexibility necessary to obtain valuable qualitative data, while focus on the problem and objective of research. In the semi-structured interview the researcher has some pre-determined questions derived from the specific objective, which can later be modified and can insert new questions during the conversation based upon the response or conversations.

The secondary data were collected from systematic literature review. A review of literature is used to gain knowledge and understanding on different concepts of outsourcing with respect of client and vendors.

3.5 Data Analysis Technique

The data collected were analyzed as per the objectives of the study. There are many different methods of analysis in qualitative research, the common thread is that all qualitative method of analysis is concerned primarily with textual analysis whether it's verbal or written (Patton, 2003). Thus the data analysis procedure for this research followed the five basic steps of qualitative research analysis, which was proposed by Beverly and Wong (as cited by Demaria, 2011). They propose, data collection, note taking, coding, sorting and writing are the basic steps in any qualitative research analysis.

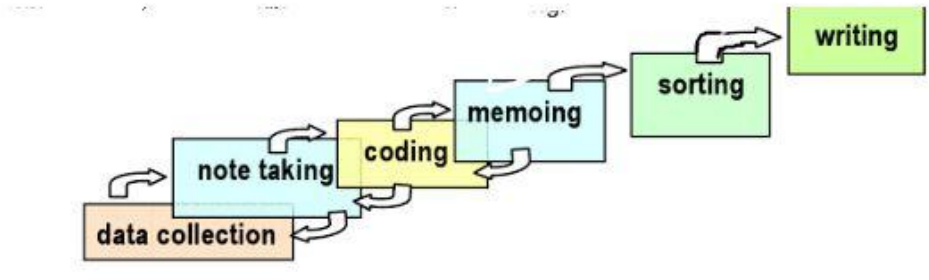

Figure 2: Grounded Theory (Fadul, 2007)

Data collection: the researcher understands the study phenomenon through several data collection methods including interview, observation, and questionnaire. In this study primary data were gathered from selected vendor and client organizations through questionnaire and semi structured interview. Questionnaires are distributed through email address.

Note taking: After each data collection, the researcher note down the key issues in order to get the main ideas of the results.

Coding: Categorize identical themes or relationship between themes to answer the research questions and meet the specific objectives of the study.

Sorting: After getting enough data, concepts were combined and arranged to explain the findings and the result of the study.

Writing: writing the final report which is guided by the above sorted data.

Data collection, note taking, and coding occur simultaneously. Sorting is done when all the above phases are saturated then writing followed at final stage.

The quantitative data which were collected through e-questionnaire was analyzed with descriptive statistics methods using statistical package for social scientists (SPSS). To analyze and summarize the collected data frequency distribution, percentage, and mean calculation were used. Some of the responses were also analyzed using Google form analysis. From the Google form summary, responses summarized with graphical representations and percentages of responses were in use.

3.6 Validity and Reliability of the research technique

The data collection is valid because the data collection tool is well prepared and the appropriate questions are identified related to the specific objectives. The documents referred related to this study, the questionnaire, and interviews from the respondents are placed in this document. Al-Salti (2011) mentioned in

his study “Adopting various data collection methods and multiple sources of evidence helps to gain full picture of what is happening.” Instead of using response from single data, using multiple sources on an issue allow cross checking of data from one source to another which enable to reduce inappropriate uncertainty of response. Therefore, in this study triangulation, which is questionnaire, and interview were used for data collection technique. Thus triangulation of data from different sources improves the quality of data and also helps to obtain rich data on the study area. The researcher directly contact with the respondents while conducting interviews and collecting questionnaires to avoid any ambiguity.

3.6.1 Pilot Study

The pilot study was conducted on sample of ten purposively selected respondents and examines the interview questions with two experts to test the validity and reliability of the questionnaire and interview designed; then the feedback was noted and included in the final set of the questionnaire and interview questions. Furthermore Cronbach's alpha was calculated using SPSS software to determine the internal consistency or average correlation of items in a survey instrument to measure its reliability.

The value of alpha expressed as a number between 0 and 1 (Tavakol & Dennick, 2011). The closer the Cronbach’s alpha coefficient to 1 indicates high level of consistency between items while the closer alpha coefficient to 0 could be due to poor interrelatedness between items. Bland J & Altman D. (as cited by Tavakol & Dennick, 2011) report that the acceptable values of alpha is ranging from 0.70 to 0.95. As shown on Table 2 and 3 the Cronbach’s alpha value for client and vendor questionnaire are .906 and .933 respectively. Therefore, it confirms the survey questionnaire’s reliability and internal consistency to use for this study.

Table 2: Reliability statistics for client based on the pilot test data (Source: Own Survey, 2017)

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.906	.895	24

Table 3: Reliability statistics for vendor based on the pilot test data (Source: Own Survey, 2017)

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.933	.927	24

3.7 Summary of the Methodology

The researcher explores different literatures to select the appropriate technique. Quantitative and qualitative approaches were found suitable to conduct the study. Thus the research method combined quantitative research method with e-questionnaire and qualitative method with semi-structured interviews. The quantitative data which was collected using e-questionnaire was analyzed using SPSS and Google form analyzer. The analysis result of both quantitative and qualitative data were triangulated and presented in a manner to address the research questions and achieve the objective of the study.

CHAPTER FOUR

DATA PRESENTATION, FINDINGS AND DISCUSSION

4.1 Overview

In this chapter findings obtained from different sources were presented and interpreted. The analysis and interpretation of data were carried out by combining two phases. The first part deals with a quantitative analysis of data based on the results of the questionnaire. The second part is about a qualitative interpretation based on the results of the interview.

For this study 102 online survey questionnaires were sent to three client organizations and four vendor organizations to collect data. At first three vendors were selected, however the number of experts in the vendor organizations is found to be less in number. Due to this the number of response was not satisfactory for quantitative analysis. Then the researcher decided to add one vendor organization. From the survey 54 and 32 questionnaires were returned from client and vendors respondents respectively. Total of 86 useful responses were achieved. This shows the response rate of 84%.

To supplement the results, to fill the gaps left in the questionnaire and to get more detailed information on IT project outsourcing risks, qualitative approach was used. Data collection was conducted through individual interviews consisting of 4 experts, 2 from client and 2 from vendor organizations. The interviewee participants were project managers and senior staffs from project office, which are believed to offer detail information of the organizations experience on IT projects outsourcing. The information and data collected from the interview and questionnaire was presented in a narrative form that includes the description and analysis of data.

Furthermore, the result is discussed using triangulation validation mechanisms of the quantitative and qualitative analysis results obtained.

4.2 Client and vendor participants Demographic data

4.2.1 Distribution of client Respondents by work experience

The participants in this survey are supposed to participate in one or more projects. Their participation and experience in IT projects allow gathering valuable information regarding risks in IT outsourcing.

From the client perspective project team is formulated from different sector units or departments within the company. This ensures quality, and enable to provide the thoughtful information that keeps the client in control and able to provide instant feedback based on business needs. Whereas from vendor side all team members are graduated in IT related fields. In these study project participants from IT department is chosen to participate in survey questionnaire and interview.

The work experience of client respondents as summarized on the below table shows that 83.9% of the respondents have more than one year experience. Whereas the work experience of vendor respondents have shown 64.5% as more than one service year in their organizations. Though the table shows the service year in their current organization, some of the respondents have additional experience in IT projects outsourcing from their previous working experience. Their involvement in IT projects has favorable impact to achieve desired reliable data.

Table 4: Distribution of client respondents by working experience (Own survey 2017)

Service year of the client respondents in the organization		
Service Year	**Frequency**	**Percent**
< 1 year	3	5.6
1-5 years	37	68.5
>5 years	14	25.9
Total	54	100

Table 5: Distribution of vendor respondents by working experience (Own survey 2017)

Service year of the respondents in the organization		
Service Year	**Frequency**	**Percent**
< 1 year	11	34.4
1-5 years	13	40.6
>5 years	8	25.0
Total	32	100

4.2.2 Outsourcing and implementing IS functions

There are different IS functions that clients perform outsourcing. Organization's may choose outsourcing for one or more IS functions. In this survey most of the client and vendor organizations participate in software development projects. Hardware maintenance, networking, web design and security are also IS functions that the organization's outsourced and implement. In addition giving IT training and implementation of ERP system are cited as function performed by the vendor organizations. The diagram (Figure 3) shows information system services outsourced by client organizations. Similarly figure 4 show the information system functions or services that the vendor organizations implement to client organization.

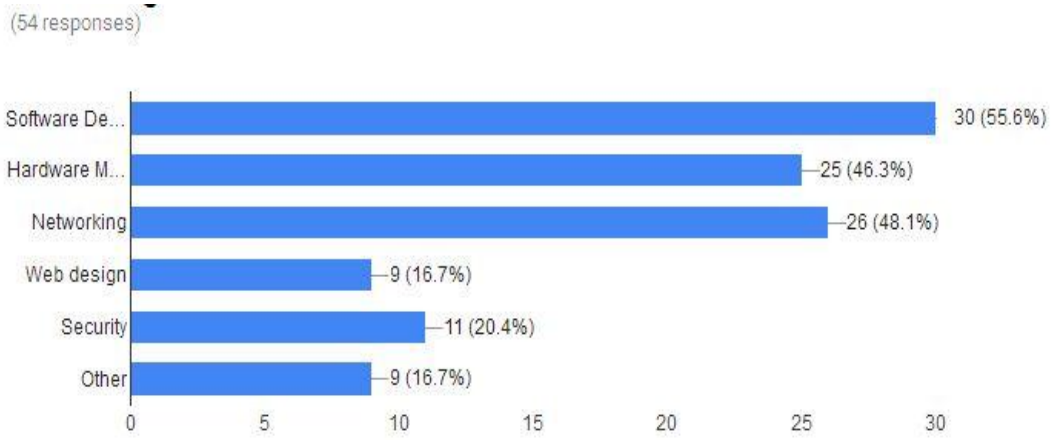

Figure 3: IS functions or services outsourced by client organization (Own survey 2017)

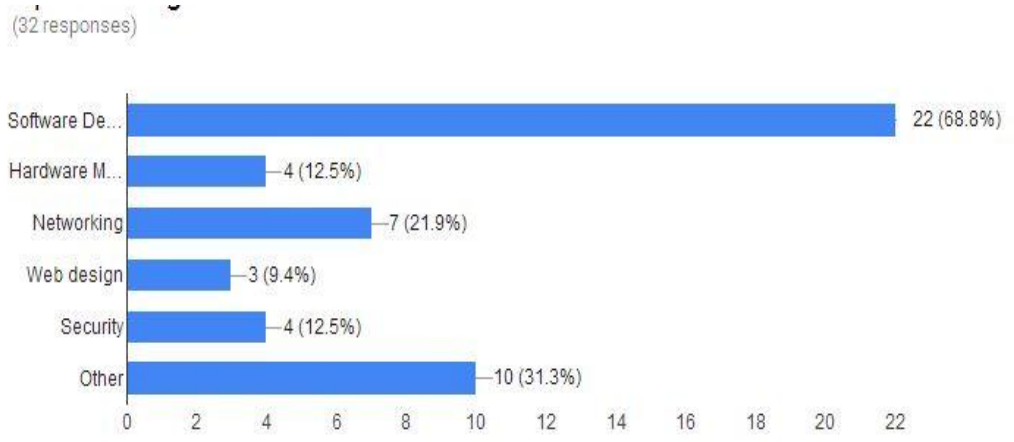

Figure 4: IS functions or services implemented by vendor organization (Own survey 2017)

Most of the vendor respondents participate in integrating different services. They are working as partners for Core banking system, HP, SAP, ORACLE, IBM, Microsoft and ERP system integrator. All of the client respondents were from bank sector.

4.3 Findings on important risk factors

Risk may lead to project failure (Medina, 2016; Tho, 2005). It has an impact on project progress as well. From the interview all respondents emphasize that most of the projects have failed to meet the planned time to accomplish tasks. Interview respondents from client organizations said that time delay happen in most of the projects. Undesirable outcomes may result from an IT outsourcing deal and these undesirable outcomes are linked to different risk factors. Similarly one interview respondent from vendor organization said that *"… more than 80% of projects did not meet the time line. The reason behind this outcome may vary depending on the type of project planned."*

As noted earlier, the first objective of this study is to identify most important risk factors in IT projects outsourcing. Some of the risk lists were generated based on the literature that followed Delphi approach. Besides, the questionnaire and the interview were designed to find important risk factors from both client and vendor aspect. As a result the lists of risk factors are

presented on table 6. Other than the risks listed on this table fear of job security, unavailability of domain experts (from the client organization) to cooperate with vendor's IT staff, Lack of innovative skills, fear of losing control, inadequate technology development before implementation and poor management expectation were identified by respondents as an important risk factors.

Table 6: Identified risk factors with description

Risk Factors	Description
Lack of communication between the client and vendor	Risk related with relationship (collaboration) approach and Failure to consider optimal way to conduct communication
Failure to consider all costs	Includes hidden costs that are invisible before and during the initial project launch. It also includes measurement problem and complex activities within a project.
Lack of top management support	Risk associated with getting necessary support from client's and vendor's top management. This includes increasing budget, resources and giving recognition for the team and achieved goals of the project
Lack of schedule and budget management	Risk associated with schedule and budget. This includes failure to develop work breakdown structure and failure to monitor tasks progress.
Lack of experience and expertise with project activities	Lack of knowledge or experience in technology and business functions
Inadequate planning	No or inadequate skill to plan project.
Inadequate staffing	Risk associated with number of staff, employee skill and staff turnover. Regardless of availability, failure distribution of a skilled workers to the project activities
Lack of team morale	Risk of failing to acknowledge project team contribution to the project
Lack of knowledge transfer	Associated with knowledge transfer mechanism from vendor to client.
Conflict between the client and vendor	Conflict between two firms while trying to accomplish their own goals.
Poor cultural fit between client and vendor	Associated with cultural difference between two firms including language
Lack of knowledge of the new technology	Risk associated with using new technology that has not been used at other organization.

Business uncertainties or technical change	Associated with dealing dynamic and rapid change of technology and business requirements.
Lack of vendor commitment	Associated with vendors commitment during and after project implementation
Poor vendor selection criteria and process by the client	Risk associated with selection criteria it may be based on cost consideration or may strictly base on the need for quality service
Requirements misunderstanding	Not understanding the requests, skill and technology to support business function
Client Readiness	Site preparation, client collaboration with vendor to perform projects
Customization of the product	Associated with require customization of product based on the client request. It also includes difficulties in integrating package of module and functionality during implementation process.
Unclear Requirements	Inadequate knowledge of requirements, high level or unclear requirements.

Client and vendor participants were asked to list risk factors that were not mentioned on the questionnaire. Some of the factor they listed presented on the above list except some naming difference in representing it. However some unique IT project outsourcing risk factors were identified. These are fear of losing control, employee turnover, requirement change, user and management expectation on project implementation.

In the current study, the most mentioned risk from client and vendor respondents is employee turnover. Employee turnover have been found to have significant negative effects on project performance (Parker & Skitmore, 2005). One of the interviewee from client organization commented

"…I can say most of the projects were not completed on time and the major risks we faced here is employees familiar with project tasks left in the middle and this affects experienced employees' productivity levels. This implies that employee turnover negatively affects the performance of the project team, and the project which results in affecting competitive advantage of organizations."

In order to help decision makers aware and understand IT project outsourcing evolvement, varies risk factors that may influence IT outsourcing operation

needs to be revealed. The above risk factors are important risk factors in IT project outsourcing. It doesn't mean that it comprises all factors, but it presents major and basic risk factors that influence the outsourcing project.

4.4 Risk factors from client organization

From the survey conducted major risks are presented for client organization to classify as very high risk, high risk, medium, low risk and very low risk. Respondents in this study were not asked to rank risk factors in order of importance. The questionnaire designed to tease out risks that are specific and more important risk factors. As shown in table 7, Lack of knowledge transfer, Lack of experience and expertise with project activities, Lack of team morale, and Lack of schedule and budget management scores the highest percentage rate of 70, 68, 61 and 61 respectively. These risks categorized as high risk and very high risk factors by client respondents.

Table 7: Risk factors from client organization (Own survey 2017)

Risk Factors	Very Low Risk	Low Risk	Medium	High Risk	Very High Risk
Lack of communication between the client and vendor	9.3	9.3	44.4	18.5	18.5
Failure to consider all costs	3.7	14.8	35.2	29.6	16.7
Lack of top management support	3.7	13.0	24.1	42.6	16.7
Lack of schedule and budget management	5.6	9.3	24.1	44.4	16.7
Lack of experience and expertise with project activities	1.9	11.1	18.5	42.6	25.9
Inadequate planning	3.7	7.4	29.6	40.7	18.5
Inadequate staffing	3.7	11.1	29.6	33.3	22.2
Lack of team morale	3.7	9.3	25.9	42.6	18.5
Lack of knowledge transfer	1.9	3.7	24.1	38.9	31.5
Conflict between the client and vendor	5.6	18.5	29.6	25.9	20.4
Poor cultural fit between client and vendor	5.6	22.2	38.9	22.2	11.1

Lack of knowledge of the new technology	7.4	13.0	27.8	27.8	24.1
Business uncertainties or technical change	7.4	22.2	25.9	35.2	9.3
Lack of vendor commitment	5.6	20.4	25.9	24.1	24.1
Poor vendor selection criteria and process by the client	7.4	11.1	24.1	29.6	27.8
Requirements misunderstanding	5.6	11.1	27.8	22.2	33.3

From the empirical analysis result, one of the most serious risk categories that concerns client organizations is Lack of knowledge transfer rated 70% of response as high risk and very high risk category. It scores 95% when medium category included. And these allies with the explanation provided by (Mohamed, Arshad, & Abdullah, 2009). They define IT outsourcing as "the use of an outside company's (vendor's) professional to manage or develop a function or system formerly carried out inside a company, to manage a client organization's information technology assets, people and/or activities to a required standards over an agreed time period". Considering the above definition they described that fundamental risk in IT outsourcing is when the outsourcing consumer (OSC) are left with little or no knowledge on the product developed, implemented and maintained by the outsourcing service provider (OSP).

The interview analysis also showed the same concern. One interviewee said that:

"…during and after the implementation phase one of the organization's concern is on how to carry out knowledge transfer mechanism to enable internal experts administer the system. In some cases the vendor will probably not be supportive of such an exercise, since it is in their interest to keep clients dependent on them."

The cost of not maintaining a knowledgeable team of internal staff can be considerable in the long run. The impact can include loss of negotiating power

in terms of costs and services (Tho, 2005). The consequence is quite difficult which results of being totally dependent on an external provider.

Though client organizations shifts risks to vendors by outsourcing its internal activities, the area of organizational competencies such as loss of IT expertise, loss of innovative capacity, and loss of control of the activity appears to be quite vulnerable. Lack of experience and expertise may impact the ability of the client to adequately manage the project activities since the client will have difficulty in assessing the quality of work done. It has also an impact on clients to clearly communicate its needs and to set requirements for vendors with a complete description of the task to be carried out.

About 61% of client respondents rated Lack of team morale as a high risk factor. Failure in managing this risk may results staff turnover which was mentioned on the analysis before. It can also be the outcome of other listed factors such as lack of top management support.

Lack of top management support, inadequate planning, Poor vendor selection criteria and process by the client, Inadequate staffing, Lack of knowledge of the new technology are also risk factors with an average rate. Lack of client top management support to initiate change and develop change management practice is considered as an influencing factor of outsourcing project activities. Lack of knowledge of the new technology got the average rate of 52% responses. Though clients desire to evolve their systems up to date state, they may be unwilling to implement new technology due to fear of degree of uncertainty and lack of new technology literacy. Client respondent also confirmed that "*…Technology that nobody successfully used it may take time to learn. In this case managers prefer to keep everything stable with the existing one."* Due to such reason lack of knowledge of the new technology considered as a risk for client organization.

From the empirical analysis the client organization rate business uncertainties or technical change 45 % which is categorized as low risk comparing with the

other listed risk factors. However the qualitative analysis shows that technological change is also one of the main challenging tasks they encounter. One respondent from the client organization states *"… due to rapid change of technologies, the vendors keep changing the system and versions. Though the improvement made has positive effect on the performance and competitive advantage of the organization but the cost required for such improvement is not easy.*" similarly the other interviewee from the same organization confirm the above statement by saying " *…interfaces and other additional technologies needed for supporting business emerged rapidly and integrating those features in the current system costs much…*". Oza (2006), also agreed on their statement, that vendors tend to update latest technology developments to compete in the market. Nevertheless it can be costly for the client company to invest regularly in latest technology for in-house activities.

Lack of communication between the client and vendor is most cited and discussed risk factor on different literatures. It has crucial effect on risk management process. The empirical analysis also shows 81 % of client participant rate this factor as medium, high and very high risk category. The interviewee from client organization said that their organization practice good communication approach "… *the communication is through phone and email. For major decision higher managements invited here to communicate face to face. Initiation is from both sides*". Without effective communication, the project may be completed with unsatisfactory or disappointing outcomes.

The interview analysis result shows that there is no team to screen out hidden costs from client side. The questionnaire result show 46% respondents choose failure to consider all costs as high risk factor.

From the table 7, 48% of client respondents rate Lack of vendor commitment as a risk factor. This shows clients had problems with vendor commitment in post contractual service of their vendors. One client respondent report *"…some specific issues and problem on functional aspect of business left after the system implementation was completed. The commitment and focus decrease once the*

project phase out. This takes time for the client to get solution with expected time." They added that the post-contractual service from the vendors was not always satisfactory. One vendor argues on this issue that clients have become more demanding in terms of expecting all things deliverable.

Failure to consider all costs has scored 81% when medium, high and very high risk category is considered. Most of the time, selection of suitable vendor depends on price and competence in the area. However selecting low cost offer may not be practical when project lay on the ground. Vendors are usually responsible one to present all the necessary cost. However omitting some costs to influence selection process may bring conflict and disappointment for clients. Inadequate planning was one of those with the biggest scored risk factor (89%) from client firms when medium, high and very high risk categories measured. Client respondents emphasize that it creates confusion within teams. It also brings big effect on controlling the scope, and utilizing resources.

With very low and low risk category 28% of client respondents choose poor cultural fit between client and vendor. It's grouped under low risk class. There was no explanation provided from the interview respondents. It was felt that it is low priority risk for the clients when compete with other risk factors listed here.

So from the above analysis, client organization's high risk gave more intention to the knowledge, experience and expert related aspect in their company. Some of the risk seems to be handled within the company's management practice while some of the other risks need vendor's collaboration in minimizing or reducing it.

4.5 Risk factors from vendor organization

There are several risk factors that can be pointed out as major anxiety in IT projects outsourcing. While these identified important risk factors on table 6 were presented in general. The current study's interest narrated on specific objective is also about which of this risks are of high concern for clients and

vendors. Based on that, vendor organizations also identified important risk factors which concerns them while implementing IS functions.

Table 8: Risk factors from vendor organization (Own survey 2017)

Risk Factors	Very Low Risk	Low Risk	Medium	High Risk	Very High Risk
Lack of communication between the client and vendor	12.5	6.3	18.8	21.9	40.6
Failure to consider all costs	6.3	9.4	18.8	34.4	31.3
Lack of top management support	6.3	3.1	18.8	43.8	28.1
Lack of schedule and budget management	0	12.5	6.3	68.8	12.5
Lack of experience and expertise with project activities	6.3	12.5	18.8	34.4	28.1
Inadequate planning	6.3	6.3	25.0	40.6	21.9
Inadequate staffing	6.3	15.6	15.6	40.6	21.9
Lack of team morale	9.4	15.6	18.8	34.4	21.9
Lack of knowledge transfer	9.4	18.8	28.1	25.0	18.8
Conflict between the client and vendor	6.3	15.6	15.6	34.4	28.1
Poor cultural fit between client and vendor	3.1	25.0	15.6	34.4	21.9
Lack of knowledge of the new technology	12.5	18.8	25.0	28.1	15.6
Business uncertainties or technical change	12.5	21.9	25.0	21.9	18.8
Client Readiness	9.4	9.4	12.5	43.8	25.0
Customization of the product	9.4	21.9	25.0	40.6	3.1
Unclear Requirements	6.3	6.3	18.8	34.4	34.4

About 81 % of vendor respondents rate Lack of schedule and budget management as high risk factor. Schedule and budget are key components to consider in the project activities (Liu & Yuliani, 2016). One of the vendor project manager participated on the interview session also mentioned that time, cost and budget are main challenges in outsourcing that their

organization give much attention to. He shared their working practice as "*…we develop work group structure. It's a process of breaking down activities into work that can be done by one person. Then we set time line and cost for each breakdown activity. So that the person or group of persons assigned for each task are responsible and monitored by project manager.*"

Client Readiness and Unclear Requirements are third and fourth top risk factors mentioned by vendor organization. They both have percentage level of 68.8%.

The other expert from vendor organization said that *"…time delay happen in most of the projects and this is due to client staff may not be there for training. Lack of system requirements, client's knowledge on the system and insufficient experts are also some of the reasons."* He also added that

"Change of functional implementation is one of the challenges. The planned projects and requirements may not meet end users expectation. The management and end user expectation within the organization are not line up. And this affects the degree of success of the project implementation."

On the interview session for the same question "Most of the time have u met the time line to finish the projects? If not what was the reason?" the vendor respondent added some other factors that concerns the project accomplishment and he replied that

"*90% of projects did not finish on time, for eg. 6 months' work scope may extend to 1 year delayed. This is due to custom and foreign exchange problem for hardware purchase process, lack of resource planning, client readiness, resource allocation with experts, and working atmosphere of client organization like salary …affects project's progress.*"

Regarding hidden cost different studies report its difficult nature of assessment. The empirical analysis showed 66 % of vendor respondents mark failure to consider all costs as high risk and very high risk. Hidden cost appeared due to either incomplete project cost planning or because of

occurrence of risk at different levels on the project process. The vendor respondents share his experience on the correlation of risk and cost as;

"*There is known unknown and unknown-unknown risks while outsourcing IT projects. In known unknown risk, risk is identified but not known if it appears or not. Whereas unknown-unknown, risks may not be visible in the current time. It may not be exposed during brainstorms, it's beyond expert views. For such incidents management reserve cost is used to overcome the cost.*"

Lack of team moral rated 56% of vendor response as high and very high risk. Developing team environment involves in handling project activities with respect to time, and quality. Better team spirit can be enhanced by active top management support, encouraging team member commitment, appropriate rewards, and recognition. Vendors reported in this issue that "*…clients rearrange their employees which create difficulties for vendors in terms of going through the same process of getting bond with new person in making aware of projects."* This fact associated with the risk identified by both client and vendor which is staff turnover. Though the respondent give more focus on the team corresponding to client staffs, he didn't deny that working atmosphere of his organization like salary, reward and recognition for the project team member have same positive and negative effect on the project process.

When medium, high and very high risk category measured lack of top management support scored highest rate with 91% response. Getting top management support in their own firm increase budget and schedule.

In general schedule and budget management, lack of top management support, client readiness, unclear requirements and failure to consider all costs are risk factors with high scored rate.

4.6 IT Project Outsourcing Risk Management Practice

The risk identified in the above section make no meaning if mechanisms are not designed to effectively manage the risks. Project risk analysis and management is a process which enables the analysis and management of the

risks associated with a project which is also applicable for IT projects outsourcing. Well performed risk analysis and management increase the likelihood of successful completion of a project implementation.

Table 9: Risk management practice and relationship approaches among the client and vendor organization, Client response (Own survey 2017)

Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You assess risks before signing the contract	0	14.8	27.8	25.9	31.5
Top management support projects actively	1.9	5.6	24.1	38.9	29.6
Consider requirements, compatibility and security issues while implementing/outsourcing	0	11.1	27.8	31.5	29.6
Client and vendor have mechanisms or activities to transfer technical and business knowledge	3.7	18.5	16.7	37.0	24.1
Risks and rewards are shared between client and vendors	3.7	22.2	25.9	29.6	18.5
Client and vendor make mutually beneficial decisions in most circumstances	0	25.9	13.0	48.1	13.0
The contract development and approval process involved a cross functional team	0	7.4	38.9	38.9	14.8
The contract clearly presents a dispute resolution process	0	9.3	50.0	29.6	11.11

Respondents in this section invited to answer using 1-5 point likert scale that measures the extent to which they agree or disagree with each statement. The first item from quantitative survey is requesting if they assess risks before entering into project. About 57% of the respondents agreed on assessing risks and 14.8% of the clients disagreed on this task.

Regarding risk assessment, for the interview question what technique or process do you have in place to identify and manage risks? The client

organizations response shows that there is no standard technique or process in place to assess or manage risk. But they try to manage some visible and frequently occurred risk.

About 61% of client participants agreed and strongly agreed on having mechanisms or activities to transfer technical and business knowledge. The knowledge transfer mechanism and the technical knowledge transferred have high impact on client firms. It enables client organizations to develop skills and increase value to sustain competitive in their business. Around 48% of respondents agree that the client and vendor make mutually beneficial decisions. Mutual decision is one of an important characteristic of successful relationship in outsourcing project.

From the interview analysis client participant's view shows that good relationship approach with vendor organization is quiet valuable. Communicating on the tasks and having mutual agreements on the project process allow them more benefited from the IT project outsourcing.

Table 10: Risk management practice and relationship approaches among the client and vendor organization, Vendor response (Own survey 2017)

Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You assess risks before signing the contract	0	0	12.5	43.8	43.8
Top management support projects actively	0	3.1	9.4	56.3	31.3
Consider requirements, compatibility and security issues while implementing/outsourcing	0	6.3	18.8	46.9	28.1
Client and vendor have mechanisms or activities to transfer technical and business knowledge	0	12.5	12.5	46.9	28.1
Risks and rewards are shared between client and vendors	3.1	3.1	25.0	46.9	21.9

Client and vendor make mutually beneficial decisions in most circumstances	0	12.5	15.6	59.4	12.5
The contract development and approval process involved a cross functional team	6.3	12.5	15.6	56.3	9.4
The contract clearly presents a dispute resolution process	3.1	12.5	18.8	56.3	9.4

In the current study 88% of the vendor respondents agreed on risk assessment.

Related with risk assessment for the interview question what technique or process do you have in place to identify and manage risks?
One interviewee from the vendor organization said that "…most of the risks fall on the performance of end user, so we communicate end users how they are working. We try to understand and incorporate all departments from client organization."

The other interviewee from vendor organization discussed that:

"*We identify risks throughout the project process, we design probability impact matrix. So that we can have risk registry and watch list that we review it in timely basis.*" He also added that *"…Risks can be assessed in interviews or meetings with Project team members, knowledgeable persons and external or internal participants which are familiar with the risk categories on the project.*"

A probability and impact matrix is mapping the occurrence probability of each risk and its impact on project objectives if that risk occurs. Risks are prioritized using probability and impact matrix based on their potential implications for having an effect on the project's objectives. The specific combinations of probability and impact lead to a risk being rated as "high," "moderate," or "low" importance are usually set by the organization. Then Risks with high probability may require priority action and response mechanism. And Risks with low probability and impact will be included within the risk register as part

of the watch list for future monitoring. The key benefit of this mapping is that it enables project managers to reduce the level of uncertainty and to focus on high-priority risks.

From the above table 10, 88% of vendor respondents agree that top management actively support project activities. Though 72% respondents from vendor sector confirm lack of top management support as high risk factor in the risk analysis result, vendors confirm that this risk can be reduced by active participation of top management.

Conflicts and relationship problems are unlikely to be expected at the start of the project. Their intangible nature makes them difficult to assess and quantify (Gholami, 2012).

A cross functional team should involve on the contract development and approval process for better outsourcing management practice. Table 9 and 10 showed 54% and 66% of client and vendor respondents agreed on contract development process. Although clients and vendors have formed contracts and have agreed on service level agreements, there were some hidden expectations that may not be documented but expected by the clients to be satisfied. Besides the contract, expectation management is also an important and the difficult outsourcing process which needs to deal with both clients and vendors to be able to articulate facts (Oza, 2006).

Contract is a fundamental basis of the outsourcing agreement. According to Levitin & Cullen (2010), there are two different views on the importance of the contract. The first view believes that the contract provides a legally bound framework in which the client and vendors have rights and responsibilities for the deal. Goals, policies and strategies are also set on the contract to lead the two firms. Thus contract is an important part in the client-vendor relationship. In contrast the second view argues contract alone cannot produce results efficient than an experienced contract management team which focused on cooperation, common interest and earning trust overtime.

The interview session also shows similar trust on communication as basic aspect in outsourcing project. For the interview question "How do you communicate with your client about progress? How often do the client site and the vendor site meet face to face? One interviewee from vendor organization answered that:

"… It depends on the type and depth of the project. Reports, issues, risk, and progress based on the schedule can be exchanged using e-mail or in printed form. For core banking project, there will be weekly report (sometimes extend to15 days) submitted to client organization to discuss on the project progress. The report format consists of current status, issue log, risk, change request, planned tasks, done tasks and undone tasks with reasons."
He also added "…if there is change requests it is advisable to communicate the client team in person. The change request may be beyond the scope of the project which may affect cost, time, and technology visibility. So project managers and those experts related to that project must be on sight to discuss on the issue."

The participant from another vendor organization also said that "… to discuss the overview of project and to collect the requirements we meet face to face. After analyzing the requirements we prepare presentation."

From the previous literatures and present analysis result; in outsourcing, contract oriented control has a limited ability to resolve critical risks.

Due to dynamic nature of IT and complex feature of outsourcing, the contract alone is insufficient to guide IT outsourcing. Experienced contract management team should be incorporated to ensure a communications environment in which each party feels free to exchange views about how both are contributing to the success of the contract as well as the sharing of information, ideas, aims, and business objectives.

For the interview question "Going forward how do you mitigate risks?" vendor participant discuss that:

"*This is purely lesson learned we produce project close out document for every projects. The document includes Item, documentation, open issue and lesson learned. For every risk identified, there will be corresponding risk responses. For upcoming project, we can use this strategy to overpass it.*"

The other interviewee from vendor organization also points out that "*TOR, agreement update will be held based on the issue we faced before*" and he also added that "*…increasing level of communication with clients is also preferable solution for mitigating risks.*"

4.7 IT Project Outsourcing Risk Management Process Model

The qualitative and quantitative analysis result of this study provides inputs to design risk management process model. From the analysis, project manager from the vendor organization shared useful working experience of his firm. The analysis obtained from this study also cross checked with varies related literatures and resources.

The first step in outsourcing project is to recognize that the risk exists as a consequence of uncertainty. All uncertainty produces an exposure to risk which may cause failure to achieve project's objectives. Risk management is recognized as an integral part of good management practice. It is a technique to reduce or eliminate uncertainty by following appropriate management technique. The overall steps of risk management are quite general (Mirkovic, 2007). It has an interactive process consisting of steps, which enable continual improvement in decision making. This study focus on main process that risk management should comprise. The processes are Risk identification, qualitative and quantitative risk analysis for the registered risk factors, risk response plan for the identified risk factors depending on the degree of impact on the project, and monitoring and controlling risks.

While the existing risk management process (on figure 1) present linear activity, the present literatures and interview analysis result shows that risk identification should be performed early starting with pre project planning and

should continue until the project is completed. This helps to plan projects efficiently by preparing on early identified risks and to overcome a new risk that becomes known as the project progresses. Then the analysis and response plan is performed correspondingly.

The analysis result also showed that, since the client and vendor are two different organizations with varied goal on the project, their rating towards the risk factors are different. As well as the identified risk factors are interrelated with the two firms. Thus the present process model emphasized the importance of communication between client and vendor in management process. Accordingly the existing risk assessment process is modified as follow.

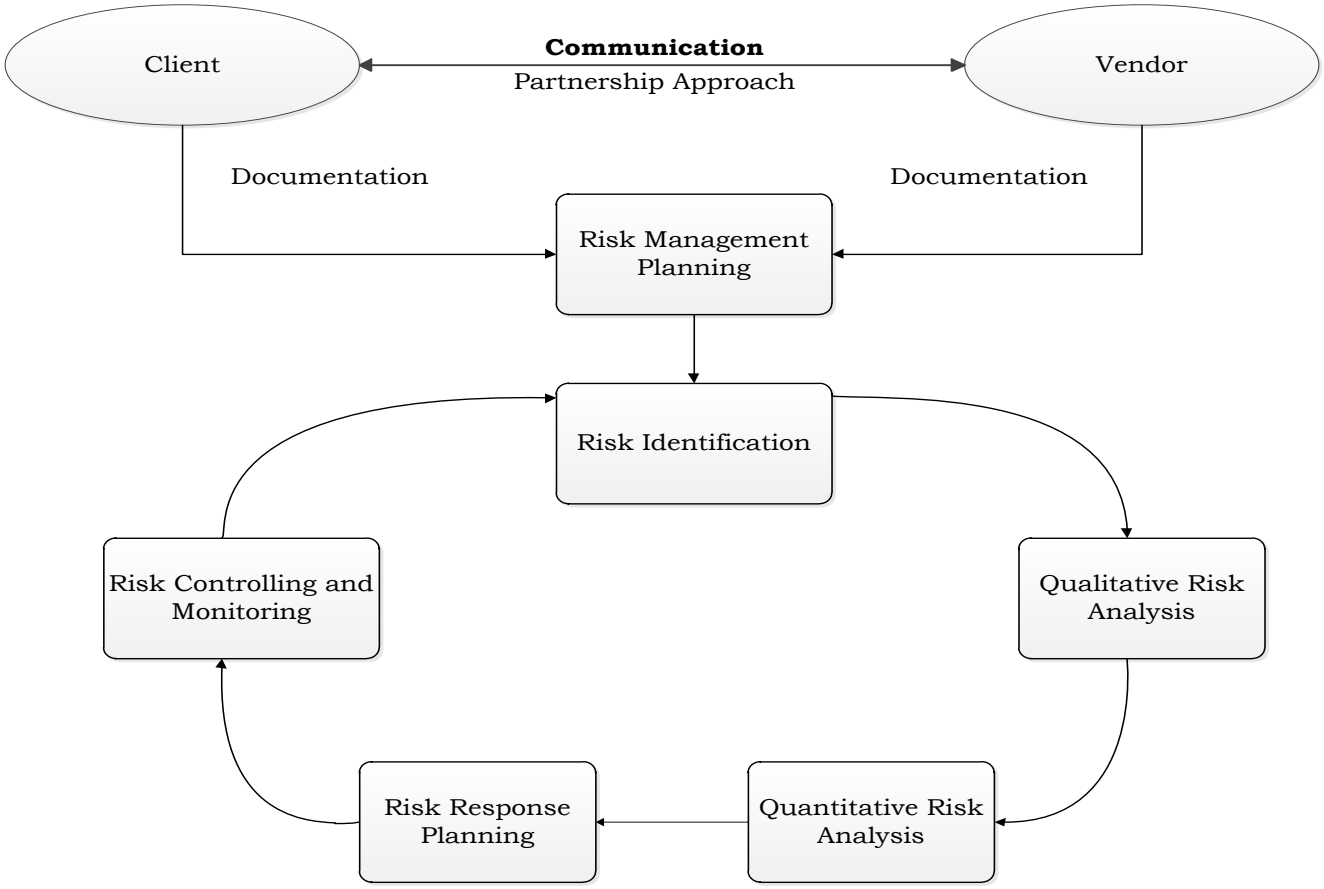

Figure 5: Risk Management Process Model

- **Risk Management planning**

Risk management planning is designed to eliminate or minimize the impact of the risk occurrences that have a negative impact on the project.

- **Risk Identification**

Risk Identification is an iterative process to identify all the risks that might impact the project. Several groups of people can help identify risks, including project team members, stakeholders, subject matter experts, users of the final product or service, and anyone else who might help in the process. Risk and problem raise the importance of identifying risk factors to successfully manage IT projects outsourcing. And these risk factors will then be helpful in addressing management solution and recommendations for IT project outsourcing practitioners (Oza, 2006).

Documenting the risks and their characteristics is also incorporated on the risk identification process.

- **Qualitative risk analysis**

It is process of prioritizing risks for further analysis. Risks are ranked on the basis of their impact and probability of occurrence on the project.

It consider all the risks identified in the identify risk process. But it is not necessary to take all of them into account as some of those risks may have low impact or low occurrence.

- **Quantitative risk analysis**

Numerical analysis is performed to predict the effect of identified risks on overall project objectives in terms of cost and time.

It only considers the risks which are marked for further analysis in the qualitative risk analysis process. It may be difficult to perform this analysis in complex projects.

- **Risk response planning**

It is process of developing alternative options and corresponding actions to enhance opportunities and to reduce threats to project objectives. Risk response includes the following actions.

Avoid: It is response strategy in which the project member act to eliminate the threat, and activities that can negatively affect the project or organization's assets. A risk avoidance methodology attempts to reduce vulnerabilities which can pose a threat. Extending schedule, changing strategy, and reducing scope are included in this response strategy. The most radical avoidance strategy is to entirely shut down the project.

Some risks that arise early in the project can be avoided by clarifying requirements, collecting additional information, improving or successful communication, or acquiring expertise.

Risk transfer: It process of shifting the risk from the project to another party. The purchase of insurance on certain items can be considered as a risk-transfer method.

Risk Mitigation: Risk mitigation is a risk response approach whereby the project members act to reduce the probability of occurrence or impact of a risk. Early action to reduce or eliminate the probability of a risk arising on the project is often more effective than trying to repair the damage after the risk has occurred.

Accept: Risk acceptance is a risk response strategy in which the project team decides to admit or acknowledge the risk. This strategy indicates that the project team has decided not to change the project management plan to deal with a risk, or is unable to identify any other suitable response strategy. This strategy can be either passive or active. Passive acceptance is usually for low priority risks. In this strategy action is not required to deal with the risk except to document the strategy, leaving the project team to deal with the risks if they

occur, and to monitor the threat to ensure that it does not change significantly. Active acceptance strategy requires further action. The most common action to handle risk is to establish a contingency reserve, including time, money, or resources.

- **Risk controlling and monitoring**

The process includes risk response plans implementation, log events and action with proper description, regularly review identified risks, monitoring and evaluating risk process effectiveness throughout the project.

Partnership approach

In outsourcing, contract oriented control has a limited ability to resolve crucial risks. Partnership and long-term relationship approach between client and vendor plays vital role in a positive project outcome. Thus project managers must adopt project partnering as a management intervention to reduce the gap and increase project success (Liu & Yuliani, 2016).

Communication

Client and vendor are two separate organizations with varied goal, which are involved in IT project outsourcing. Risk or uncertainty may present at different level. There are risks that purely associated with either side of client or vendor organization. And there are also risks that need mutual cooperation of the two firms. The analysis result also shows that all risks were dependent on the success of the project whether it appeared from client side or vendor side.

Insufficient coordination and communication between client and vendor might result in poor strategic planning of IT (Joha, 2003). As already mentioned, the objective of the two firms in outsourcing relationship is different such that the merit of the partnership is being considered from different perspective. Due to this outsourcing nature of communication is an essential factor to ensure the sustainability of outsourcing project.

Documentation

It's also an important part in risk management practice. Risk identified in the previous steps will be documented. It will contain the detail information that includes its cause and response for each risk. Resolutions to common risks and problems referred when it's needed. It also used to build the knowledge base of the organization.

4.8 Discussion

Many studies focused on the risk analysis and management of IT outsourcing risk on the either side of client or vendor organization. Yet in our context no research could be found examining risks from both the client and the vendor perspective; this study aimed to give a small contribution to fill this gap. In other context there are some researches which include both client and vendor firms. As a result both firms have a diverse agreement on the importance of risk factors.

As this study aims to give answer for the questions of what are the important risk factors in IT project outsourcing?; and what are risk factors from client and vendor perspective? Current findings in related with literatures discussed below.

The number of risk factors may vary depending on the project type or other organizational characteristics. The current study attempt to review literatures with related topics and picked risks factors which is supposed to be important for this study. During pilot study the researcher try to discuss with experts about selected risk factors to validate the list. As a result 19 risk factors were presented as shown on table 6. From the questionnaire and interview analysis results, 4 additional factors were revealed as risk factor in IT project outsourcing. Schmidt et al. (2001) analysis result brought 26 new risk factors. In other way Liu & Yuliani (2016) displayed 20 top risk factors. Whereas Taylor H. A., (2003) showed top 11 risk factors mentioned by respondents.

After presenting the list, the second task was to categorize most important risk factors from client and vendor viewpoint.

Schedule and budget management, top management support, team moral and requirement misunderstanding were most rated risk factors by vendor respondent in the present study. All of these risk factors except change management were included and identified as important risk factors by (Taylor, 2003). he identified schedule and budget management, vendor staffing, vendor understanding of requirements, vendor team morale, and change management. In the present study change management was set on top management support category.

In this study top management support was second rated high risk factor from vendor respondents. This has similar output with Schmidt et al., (2001) rank result analysis. The project managers put top management support as most attention deserving risk factor while implementing projects.

Lack of communication between client and vendor found the first and second ranked risk factor from client and vendor panelist respectively. In which it's found most critical. But in the present study the quantitative result showed that it's not highly rated risk factor by both client and vendor respondent as compared with other risk factor. However the qualitative result showed that it has big impact on the project completion process.

Although the current study did not include client expectation on important risk factor list, the analysis result of the questionnaire and interview revealed that other than the listed risk factors client expectation is main challenge on the project implementation. A number of vendor respondents on Gholami (2012) indicate working on client expectation as one of the key areas for managing risk.

The previous literature results on the varied degree of perception of risk factors among client and vendor organization were also appeared in this study. The

client and vendor had significantly different ratings towards risk factors presented here.

Table 11: Risk factor from previous and present studies

Top Risk Factors from previous literatures	Present Study's No of response (High Risk and Very High Risk) Factor	
	Client (n=54)	Vendor (n=32)
Lack of communication between the client and vendor (Liu et al., 2014)	20	20
Failure to consider all costs	25	21
Lack of top management support (Schmidt et al., 2001; Taylor H. A., 2003; Parinyavuttichai, Mann., & Johnson, 2002)	32	23
Lack of schedule and budget management (Mirkovic, 2007; Taylor H. A., 2003)	33	26
Lack of experience and expertise with project activities (Schmidt et al., 2001; Parinyavuttichai et al., 2002)	47	20
Inadequate planning	32	20
Inadequate staffing (Parinyavuttichai et al., 2002; Mirkovic, 2007; Taylor H. A., 2003)	30	20
Lack of team morale (Mirkovic, 2007; Taylor H. A., 2003)	33	18
Lack of knowledge transfer	38	14
Conflict between the client and vendor	25	20
Poor cultural fit between client and vendor	18	18
Lack of knowledge of the new technology (Parinyavuttichai et al., 2002)	28	14
Business uncertainties or technical change (Taylor H. A., 2003)	24	13
Lack of vendor commitment	26	-
Poor vendor selection criteria and process by the client	31	-
Requirements misunderstanding (Parinyavuttichai et al., 2002; Mirkovic, 2007)	30	-
Client Readiness (Taylor H. A., 2003)	-	22

Customization of the product (Taylor H. A., 2003)	-	14
Unclear Requirements	-	22

The current analysis result shows that there are only few risk factors almost had common rate by both client and vendor. However, differences persist in assigning the category of risk factors ranged from very low risk to very high risk factor. The difference was believed due to varied nature of their firm in terms of objective. Previous literatures also appeared divided over the importance of identified risk factors. However while addressing all risk factors mutual cooperation including communication is needed. Both client and vendor respondents reported constant communication helps to understand business better. It also helps both of them aware about the project, and to control the progress.

The fourth question that this study attempt to answer was how to design process model to manage the risks identified before. Different literatures illustrates about risk management model for eg. Tho (2005) shows risk management model adopted from US Government Accounting Office for the management of IT risk document. The model has an iterative loop that starts from risk assessment then continues with implementation of policies and controls then followed by the promotion of awareness then evaluating policy and control effectiveness. In addition Mirkovic (2007) as shown on (figure 1) present risk management approach. Linear activities include process of initiation, risk identification, risk analysis, action planning, and implementation & follow up. The current study analysis result shows an iterative process. Risk management planning, risk identification, qualitative and quantitative risk analysis for the identified risk factors, risk response planning, and risk controlling & monitoring are the overall process of the model. These process should be followed by both client and vendors. While designing process model communication and partnership approach were emphasized. Mutual cooperation in risk management process found to have positive impact on the project success.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter summarized main findings of the analysis result in association with research questions and specific objectives of the study. Finally it presented recommendations and suggestions for future research.

5.1 Conclusion

Outsourcing is a common practice in the global business today. Information technology (IT) outsourcing is one aspect of outsourcing, where service or functions of IT are contracted out to the third party to obtain a required result. Client and vendor are two types of organization that involves in IT project outsourcing. Though organizations choose IT outsourcing for variety of benefits, it has also associated with many risks. In order to reap benefits acquired from IT outsourcing, organization should assess and manage risks that affect outsourcing success. So to address this points this study has been able to identify the important risk factors on IT projects outsourcing, identify risk factors from client perspectives, identify risk factors from vendor perspectives, and develop risk management process model considering both client and vendor.

Some of the risk factors identified in this study were adopted from recent literatures. Other risk factors which are not included on the list but identified by client and vendor participants in the current study were presented. As shown on table 6, 19 risk factors were presented as important risk factors in IT outsourcing risk. Other than those risk factors, client and vendor participants added other factors which are employee turnover, fear of losing control, requirement change, and client & management expectation on project implementation. From the results, some of the risk factors are emerged from the company itself while other risks arise from the other side. Therefore identifying every possible risk factor is important in IT project outsourcing.

This study also focused on identifying major risk factors in IT project outsourcing from the client and vendor side. The client participants identify important risk factors from their side. Lack of knowledge transfer, Lack of experience and expertise with project activities, Lack of team morale, and Lack of schedule and budget management are major risk factors from client perspective. Client participants had great concern on having adequate knowledge transfer back to their side. Knowledge dependency and expert issues were underlined issue. Whereas the vendor participants identify lack of schedule and budget management, Lack of top management support, client readiness, unclear requirements and failure to consider all costs as very high and high risk factors on their perspective. From the findings it can be concluded that the risk factors that concern client and vendor are different. Though the concern on each side is different, handling the risks that might affect the opposite firm is significant as it may affect the final outcome.

Risk identification is basic and initial aspect in IT project outsourcing. However successful IT project outsourcing result a positive outcome when proper management technique is applied for the identified risk factors. Different literature shows that the overall steps of risk management are quite general which is also valid for IT outsourcing risk management. Identifying the risk factors, analyzing the impact of risk on the project, assigning risk response strategy to the identified risk factor and control and monitoring the progress is the overall steps of risk management in the current designed process model. Risk management from only one side of perspective may omit critical risk from the other side which may affect the whole project. So this study design risk management process model bearing both client and vendor firms. From the analysis result communication has been found one of the biggest reasons for project success and failure. It is essential within company's project team members, with top managers, external stakeholders and other parties involved in the outsourcing project.

5.2 Recommendations

5.2.1 Recommendations for Practice

- Many client and vendor organization except few use no techniques or strategy to manage risk. It's better to have proper risk management practice in place.
- Risk identification is found as an initial and important aspect in risk management practice. Risk factors should be assessed early and constantly throughout the project process.
- Risk identification while performing IS project and documenting registered list should be practiced by organization.
- Communication and partnership approach between client and vendor found to be important aspect in IT project outsourcing. Client and vendor should spend time together on the project, conduct regular meetings and build effective communication to manage outsourcing relationships.

5.2.2 Recommendations for future study

Most literatures focused on client side. However both client and vendor contribute to success and failure of IT projects outsourcing. So in order to develop the current findings, related topics considering both firms should be conducted.

In conclusion more research is needed to overcome some of its limitations, as well as to further explore its findings. List of identified risk factors is not limited. So there is no guarantee that the identified risks are the only risk in IT outsourcing. Further research should concentrate on more and diverse companies to obtain more reliable and generally applicable result.

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APPENDICES

Appendix A: Letter from the Department

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የተፈጥሮ ሳይንስ ኮሌጅ
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ADDIS ABABA UNIVERSITY
College of Natural Science
School of Information Science

Date February 23, 2017
Ref: -SIS/30/2017

TO WHOM IT MAY CONCERN

Student Bezawit Girma (ID. No. GSE/0083/07) is a graduate student at the School of Information Science, Addis Ababa University. She is currently conducting a MSc. thesis research under the title "IT Outsourcing project Risk Management Model: The Client and Vendor Perspective".

I would like to thank you in advance for all the assistance that you would provide to the student.

With Regards,

Martha Yifiru (PhD)
Head, School of Information Science

✉: 1176 ☎: +251-(11)-122-91-91 ☎:2122- 91-92

Appendix B: Questionnaire Survey

Dear Respondent,

My name is Bezawit Girma. I am a graduate student at Addis Ababa University School of Information Science. Currently I am working my Master's thesis in title "IT Project Outsourcing Risk Management Process Model from the Client and Vendor Perspective: The Case of Ethiopian Banking Sector". The purpose of this questionnaire is to collect the important risk factors from both client and vendor side. Thus this study believed to help organizations aware of the important risks factors from both client and vendor side and managing of those risks.

Therefore, I kindly request you to share your individual and organizational experience in IT Outsourcing and to fill this questionnaire carefully. The questionnaire requires approximately 10 to 15 minutes and the information that you provide will be confidential and will exclusively be used for academic purpose only.

Your dedication is most valued and appreciated. Thank you in advance for your kind participation.

Best Regards,

Bezawit Girma
gahebs@gmail.com

For Client Organization

Part I: Personal and Occupational Data /PO/

1. How long have you been working in this organization? /PO1/

   A. < 1 year B. 1-5 years C. greater than 5 years

2. What are the main IS functions that your organization is currently outsourcing? /PO2/

   A. Software Development B. Hardware Maintenance

   C. Networking D. Web design E. Security F. Others: _____

3. Please indicate the sector of your Organization's Business /PO6/

   A. Government B. Finance/Banking C. Manufacturing

   D. Educational E. Insurance F. Others: _____

Part II: Identify risk factors /RF/

Please identify your level of agreement by putting '✓'mark in the appropriate column to identify important risk factors while outsourcing/implementing IS (Information System) projects.

1= Very low risk

2= Low risk

3= Medium

4= High risk

5= Very high risk

Code	Risk Factors	1	2	3	4	5
RF1	Lack of communication between the client and vendor					
RF2	Failure to consider all costs					
RF3	Lack of top management support					
RF4	Lack of schedule and budget management					
RF5	Lack of experience and expertise with project activities					
RF6	Inadequate planning					
RF7	Inadequate staffing					
RF8	Lack of team morale					
RF9	Lack of knowledge transfer					
RF10	Conflict between the client and vendor					
RF11	Poor cultural fit between client and vendor					
RF12	Lack of knowledge of the new technology					
RF13	Business uncertainties or technical change					
RF14	Lack of vendor commitment					
RF15	Poor vendor selection criteria and process by the client					
RF16	Requirements misunderstanding					

Please mention risk factors that are not included in the above section.

_____

Part III: Risk management practice and relationship approaches among the client and vendor organization

Please identify your level of agreement by putting '✓'mark in the appropriate column

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly Agree

Code		1	2	3	4	5
M1	You assess risks before signing the contract					
M2	Top management support projects actively					
M3	Consider requirements, compatibility and security issues while implementing/outsourcing					
M4	Client and vendor have mechanisms or activities to transfer technical and business knowledge					
M5	Risks and rewards are shared between client and vendors					
M6	Client and vendor make mutually beneficial decisions in most circumstances					
M7	The contract development and approval process involved a cross functional team					
M8	The contract clearly presents a dispute resolution process					

For Vendor Organization

Part I: Personal and Occupational Data /PO/

4. How long have you been working in this organization? /PO1/

   B. < 1 year B. 1-5 years C. greater than 5 years

5. What are the main IS functions that your organization is currently implementing? /PO2/

   A. Software Development B. Hardware Maintenance

   C. Networking D. Web design E. Security F.Others: _____

6. If you are integrator which brand or companies software are you integrating? /PO3/

   _____

   _____

   _____

   _____

Part II: Identify risk factors /RF/

Please identify your level of agreement by putting '✓'mark in the appropriate column to identify important risk factors while outsourcing/implementing IS (Information System) projects.

1= Very low risk

2= Low risk

3= Medium

4= High risk

5= Very high risk

Code	Risk Factors	1	2	3	4	5
RF1	Lack of communication between the client and vendor					
RF2	Failure to consider all costs					
RF3	Lack of top management support					
RF4	Lack of schedule and budget management					
RF5	Lack of experience and expertise with project activities					
RF6	Inadequate planning					
RF7	Inadequate staffing					
RF8	Lack of team morale					
RF9	Lack of knowledge transfer					
RF10	Conflict between the client and vendor					
RF11	Poor cultural fit between client and vendor					
RF12	Lack of knowledge of the new technology					
RF13	Business uncertainties or technical change					
RF14	Unclear Requirements					
RF15	Customization of the product					
RF16	Client readiness					

Please mention risk factors that are not included in the above section.

_____

_____

_____

Part III: Risk management practice and relationship approaches among the client and vendor organization

Please identify your level of agreement by putting '✓'mark in the appropriate column

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly Agree

Code		1	2	3	4	5
M1	You assess risks before signing the contract					
M2	Top management support projects actively					
M3	Consider requirements, compatibility and security issues while implementing/outsourcing					
M4	Client and vendor have mechanisms or activities to transfer technical and business knowledge					
M5	Risks and rewards are shared between client and vendors					
M6	Client and vendor make mutually beneficial decisions in most circumstances					
M7	The contract development and approval process involved a cross functional team					
M8	The contract clearly presents a dispute resolution process					

Appendix C: Interview Outline

Interview Questions for Client /IQ/

1. Is there a team to screen out hidden costs before starting the project? /IQ1/
2. How do you communicate with your vendor about progress? How often do the client site and the vendor site meet face to face? /IQ2/
3. How often you get project reports from the vendor? /IQ3/
4. From your experience what are the main risks you've faced with outsourcing? How did you overcome them? /IQ4/
5. What techniques or process do you have in place to manage risks? /IQ5/
6. Going forward how do you mitigate risks? /IQ6/

Interview Questions for Vendor /IQ/

1. Is there a team to screen out hidden costs before starting the project? /IQ1/
2. How do you communicate with your vendor about progress? How often do the client site and the vendor site meet face to face? /IQ2/
3. Most of the time have u met the time line to finish the projects? If not what was the reason? /IQ3/
4. From your experience what are the main risks you've faced while implementing system projects? How did you overcome them? /IQ4/
5. What techniques or process do you have in place to manage risks? /IQ5/
6. Going forward how do you mitigate risks? /IQ6/

Appendix D: Descriptive Statistics of the survey (Client Respondents)

Descriptive Statistics for Client Survey					
Risk Factors	N	Mean	Median	Mode	Std. Deviation
Lack of communication between the client and vendor	54	3.278	3.000	3.0	1.1561
Failure to consider all costs	54	3.407	3.000	3.0	1.0554
Lack of top management support	54	3.556	4.000	4.0	1.0401
Lack of schedule and budget management	54	3.574	4.000	4	1.0569
Lack of experience and expertise with project activities	54	3.796	4.000	4	1.0165
Inadequate planning	54	3.630	4.000	4	0.9961
Inadequate staffing	54	3.593	4.000	4	1.0731
Lack of team morale	54	3.630	4.000	4	1.0149
Lack of knowledge transfer	54	3.944	4.000	4	0.9400
Conflict between the client and vendor	54	3.370	3.000	3	1.1703
Poor cultural fit between client and vendor	54	3.111	3.000	3	1.0581
Lack of knowledge of the new technology	54	3.481	4.000	3.0	1.2091
Business uncertainties or technical change	54	3.167	3.000	4.0	1.1117
Lack of vendor commitment	54	3.407	3.000	3	1.2212
Poor vendor selection criteria and process by the client	54	3.593	4.000	4	1.2212
Requirements misunderstanding	54	3.667	4.000	5	1.2131

Appendix E: Descriptive Statistics of the survey (Vendor Respondents)

Descriptive Statistics for Vendor Survey					
Risk Factors	N	Mean	Median	Mode	Std. Deviation
Lack of communication between the client and vendor	32	3.719	4.000	5.0	1.3966
Failure to consider all costs	32	3.750	4.000	4.0	1.1914
Lack of top management support	32	3.844	4.000	4.0	1.0809
Lack of schedule and budget management	32	3.813	4.000	4.0	0.8206
Lack of experience and expertise with project activities	32	3.656	4.000	4.0	1.2078
Inadequate planning	32	3.656	4.000	4.0	1.0957
Inadequate staffing	32	3.563	4.000	4.0	1.1897
Lack of team morale	32	3.438	4.000	4.0	1.1897
Lack of knowledge transfer	32	3.250	3.000	3.0	1.2443
Conflict between the client and vendor	32	3.625	4.000	4.0	1.2378
Poor cultural fit between client and vendor	32	3.469	4.000	4.0	1.1909
Lack of knowledge of the new technology	32	3.156	3.000	4.0	1.2728
Business uncertainties or technical change	32	3.125	3.000	3.0	1.3137
Client Readiness	32	3.656	4.000	4.0	1.2342
Customization of the product	32	3.063	3.000	4.0	1.0758
Unclear Requirements	32	3.844	4.000	4.0	1.1670