



**ADDIS ABABA UNIVERSITY
COLLEGE OF NATURAL SCIENCES
SCHOOL OF INFORMATION SCIENCE**

**Exploring Factors Affecting Knowledge Transfer Process in
Information System Outsourcing at Ethio Telecom**

**By
Mesfin Worku**

**June 2017
Addis Ababa, Ethiopia**

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**A Thesis Submitted to the School of Information Science of
Addis Ababa University in Partial Fulfillment of the
Requirements for the Degree of Master of Science in
Information Science**

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Name and signature of Members of the Examining Board

Name	Title	Signature	Date
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_____	Examiner	_____	_____

Declaration

I, Mesfin Worku, hereby declare that the work which is being presented in this thesis entitled “Factors Affecting Knowledge Transfer Process in Information System Outsourcing at Ethio telecom” is an original work of my own and prepared under the guidance of my supervisor Dr. Tibebe Beshah. It has not been presented for any scholastic achievement in the University. All the sources of the materials used in this dissertation paper have been duly acknowledged.

Dedication

This thesis is dedicated to the loving memory of my great and lovely mother, Alemi Gedefa, who raised me to love, courage, confident and attain, but did not live to see this success.

Acknowledgement

First and foremost, praise to my Almighty God for his blessings and guidance in giving me the strength, courage, patience and perseverance to endure this long and challenging study journey.

I am so grateful for the wise council of my advisor, Dr. Tibebe Beshah. I have been fortunate, privileged and honored to work under the supervision of such an academic who is responsible for two major and important positions within the Addis Ababa University namely, the coordinator of the IT Doctoral Program and professor of different IS courses. Many thanks Dr. Tibebe for your invaluable guidance, inspirational support and encouragement, as well as your patience in respect of my shortcomings.

Without the endless support of my beloved wife, Senait Gebere, I would not have been in a position to begin this research. Words are not enough to express my gratitude and thanks to you, Seni. You, more than anyone, have been there for me during the twists and turns and through the ups and downs. Thank you for your loving support, sacrifices and endless encouragement. I am also fortunate to have my lovely and beautiful Children, Naanahi and Rooban. They are extraordinary children and I am very proud of them. Indeed, they were constant sources of inspiration and, unknowingly, motivated me to complete this thesis. There have been occasions, when I wanted to spend more time with them, and I promise to do so in the future.

Finally, I owe a substantial debt of gratitude and thanks to the Ethio telecom staff, who have given me their precious time and respond to all my interview questions. Without their valuable input, this study would not have been possible. Thank you for spending the time and sharing your views, perceptions and experiences with me in such detail.

Abstract

Inter-organizational knowledge transfer is of central interest both as an academic topic and in business practice. However, despite the attention given to the importance of this subject from different perspectives in various contexts, little is known about how knowledge is transferred from vendors to clients in information systems outsourcing. This research attempts to address this shortage by providing an analysis of the key factors which facilitate or inhibit knowledge transfer success in IS outsourcing at Ethio telecom.

This study employed a qualitative, single case study approach. Data was collected from Ethio telecom's IS Division. Through semi-structured interviews, this study explored the perspectives of the internal IS staff on their experience of knowledge transfer and learning from vendors through various IS outsourcing projects. Written and electronic documentations as well as participant observations also served as important triangulation and complementary sources in understanding the phenomenon being studied and as a means of gaining additional perspectives and further insights on key issues.

The empirical evidence demonstrated that there are four sets of factors which facilitate or inhibit knowledge transfer success in IS outsourcing. These are: knowledge (knowledge tacitness and knowledge complexity), client (learning intent, absorptive capacity and motivation), vendor (vendor capability, vendor credibility and vendor openness), relationship (relationship quality, relationship duration, relationship governance and organizational distance). Ethio telecom's IS Division staff intention to learn and absorptive capacity are more important factors in transferring knowledge within short period of time from vendors' employees and made them less dependent on vendors.

The study also revealed that, Ethio telecom IS division currently uses two main types of processes for knowledge transfer, namely structured and unstructured. Transferring of tacit knowledge highly dependent on unstructured process.

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List of Abbreviations

B2B	Business to Business
BSS	Business Support System
CBS	Convergent Billing System
CRM	Customer Relation Management
email	electronic mail
ERP	Enterprise Resource Planning
ETC	Ethiopian Telecommunications Corporation
F-2-F	Face to Face
HQ	Head Quarter
ICT	Information Communication Technology
IS	Information System
ISD	Information System Division
IT	Information Technology
MENA	Middle East and North Africa
OSS	Operation Support System
PC	Personal Computer
R&D	Research and Development
SECI	Socialization, Externalization, Combination, and Internalization
SLA	Service Level Agreement
VAS	Value Added Services
ZTE	Zhong Xing Telecommunication Equipment

CHAPTER ONE: INTRODUCTION

1.1. Introduction

In today's dynamic and frequently stormy business environment, organizations, particularly in the public sector, have been under great pressure to seek out methods to manage, control and deliver information systems (IS) products and services more effectively and efficiently (Lin, Fofanah, & Liang, 2011).

Public sector organizations are highly financing in innovative IS (Tseng, Yen, Hung, & Wang, 2008) to improve their internal efficiency (Doherty & Terry, 2009), to provide better services to nations and businesses (Tseng et al., 2008) and to improve transparency and trustworthiness (Armstrong, 2011). In developing countries, IS have become even an important element for development; improving existing government services, decreasing corruption and increasing accountability (Asorwoe, 2014). Smith (2011) also describes that IS “thought to bring increased efficiency, effectiveness, transparency, and accountability to the public sector; reducing corruption, improving service provisions, and democratizing the bureaucracy”. Similarly, Debretson (2010) and Shegaw (2009) assert that the importance of ICTs in Ethiopia, in accelerating the democratization, nation building, access to better resources and new possibilities, while at the same time, reducing the national level of poverty. Ethio telecom as a public organization is with the mission to deliver “telecom services accessible to all citizens to support the development of the country”.

However, not many organizations have sufficient internal knowledge, capabilities and expertise to develop, implement and maintain such sophisticated systems (Ko et al., 2005). A common response from decision makers is outsourcing (Lee & Choi, 2011). IS outsourcing is an accepted and a growing exercise as a means of meeting an organization's IS needs (Simeon & Francisco, 2010). In the public sector, more and more organizations are outsourcing a large percentage of their IS projects (Swar, Moon, & Rhee, 2012).

Therefore, organizations are increasingly outsourcing IS to external specialized vendors that have acquired experience and knowledge bases (Al-Qirim & Bathula, 2003). Today, IS outsourcing are

among the top agendas of IS executives (Atescia et al., 2010) and is regarded as one of the “most discussed topics in both the academic and practitioner media” (Rustagi, King, & Kirsch, 2008).

While the key driving force for IS outsourcing was cost saving (Khan, Currie, & Desai, 2003), in recent years high attention has been paid by clients building successful partnerships with vendors (Lam & Chua, 2009). In moving away from adversarial relations towards greater cooperation and strategic IS outsourcing relationships, client organizations have started relationship building to a common understanding through which the transfer of knowledge becomes possible (Rai & Tang, 2010). Such close relationships provide a fertile platform for knowledge transfer and learning, creating opportunities for client organizations to access new knowledge, skills and competencies of the vendors (Valorinta, 2011). For example, Ko, Kirsch, and King (2005) state with regard to transferring knowledge from an Enterprise Resource Planning vendor, “organizations typically have goals that go beyond the successful implementation of a new system; they also have the less tangible goal of acquiring new implementation, operational, maintenance and training knowledge”. In the same way, Tiwana and Bush (2007) preserve that the IS outsourcing decisions “should be motivated by the need to access and exploit specialized technical knowledge that is not readily available in the client firm”. The success of knowledge transfer from vendors to clients is serious for attaining the desires of the client organizations Xu and Ma (2008).

The term outsourcing reveals the use of external firms to execute one or more organizational activity and IS outsourcing denotes to passing over the duty for the execution of IS services to an external service provider.

Outsourcing in developing countries is often perceived as an alternative for accessing the resource (skill and competency) required to execute IS successfully (Waheed & Molla, 2004).

In Ethiopia, the most cited reason behind information technology outsourcing is not cost saving. According to the survey done by Meresea (2007), the most expressed reasons for information technology outsourcing are improving service level, acquiring innovative ideas, allowing more focus on core business, increase flexibility to meet changing business conditions, and lack of internal expertise, while cost savings was the least expressed reason for outsourcing information technology services. Muluneh (2009) argues the reason as “lack of internal expertise”. The study conducted by Daniel (2010) reported that the reason for IS outsourcing was that lack of critical in-house IT skills.

Yetnayet (2016) also argued that some of the reasons companies in Ethiopia choose to outsource part or a majority of their operation are to gain access to world class capabilities, take advantage of offshore capability, lack of internal resource, improve company focus.

Ethio telecom is the only company that is providing telecommunications service in Ethiopia. The company has been in existence for more than a century by taking various forms. The company used to be run by Swedish management. After a period of sometime Ethiopian managers were assigned to take experience in the management whereby later on they took over. Through the years the name and the organization of the company have changed a couple of times. Ethio telecom was named as such after the former Ethiopian Telecommunications Corporations (ETC), which was the name of the telecommunication company starting from 1996, ceased to exist in November 2010. In 2009 a consultant was hired to study ETC for introduction of structural change to make it a world class telecom company (Yetnayet, 2016). According to Yetnayet (2016), the management of Ethio telecom was outsourced to a foreign operator called France Telecom for two years with an additional six-month extension in the year 2010.

Ethio telecom started outsourcing of its infrastructure and IT application development to vendors through vendor financing to improve the quality of services (Lishan, 2007), the government of Ethiopia planned a reengineering project which was undertaken from 2007 to 2010 and that was mainly designed to introduce world class business processes including the implementation of new systems and to bring in latest telecommunication technologies in to the organization. In the meantime, the company had been working with different international companies from America, China, India, and France in the form of outsourcing of some activities, benchmarking and consulting services Engidayehu (2014).

As one of the public sectors striving for success, currently Ethio telecom is under the deployment of latest telecom infrastructures, process based tasks and development of human skills in order to give world class telecom services (Shewanawel, 2015). With the introduction of vendor financing and outsourcing Ethio telecom not only built a huge telecom systems and services; but also strive to establish inter-organizational strategic alliances with these companies to maintain competitive advantage, successful strategy, effective management and efficient use of resources, transfer new knowledge and skills and learn from their experiences (Lishan, 2010)

From the analysis of the researches conducted on Ethio telecom, Ethio telecom has been engaged in outsourcing from the day of its establishment and creating close links and building connections with outside organizations and business partners in order to gain economic, technological and strategic benefits (Yetnayet, 2016; Shewanawal, 2015; Engidayehu, 2014). Transfer of knowledge is one of the main issues in these processes, which many other factors depend on.

For example, Yetnayet (2016) note with regard to transferring knowledge, in management outsourcing decision by the company to France telecom was the “capacity building of internal staff”. In a similar vein Engidayehu (2014) emphasized the introduction of new technologies and business processes including the implementation of “Enterprise Resource Planning” system by working with different companies.

1.2. Statement of the Research Problem

Despite the recognized benefits of knowledge transfer in IS outsourcing, many studies establish that knowledge transfer from one organization to another is challenging and complex in nature (Perez-Nordtvedt, Kedia, Datta, & Rasheed, 2008). For example, Kim and Chung (2003) found that despite the fact that IS outsourcing provides client organizations access to vital knowledge and superior competencies of the vendors, the activity of transferring knowledge successfully is far from straightforward. They further argue that despite many of the firstly asserted knowledge transfer benefits, IS outsourcing does not always attain the desired results. In the same vein, Perez-Nordtvedt et al. (2008) state that knowledge transfer across organizational boundaries is often challenging and time-taking, and argue that it is vital to study the obstacles to knowledge transfer, so as to make the process more effective and efficient and the outcomes more favorable.

The success of knowledge transfer doesn't only depend on the capability of the vendors to offer the required knowledge, but also on the capability of the client to absorb and utilize the transferred knowledge Steensma and Lyles (2000). Furthermore, differences in cultures, structures and goals between the client and the vendor may inhibit partnership and subsequently hamper knowledge transfer (Salmi & Torkkeli, 2009). In practice, without a comprehensible understanding of the key factors that contributes to effective knowledge transfer, managers are left in the dark as to what they can do to foster knowledge transfer when outsourcing IS (Levin, Cross, Abrams, & Lesser, 2004).

There are a large number of contributions discussing difficulties and lack of understanding related to the inter-organizational knowledge transfer process, such as joint ventures (Pak & Park, 2004), a strategic partner (Muthusamy & White, 2005) and Research and Development, R&D (Faems et al., 2007), these studies have contributed diverse results with regard to the factors that impact inter-organizational knowledge transfer success. Previous empirical studies were conducted mainly through survey questionnaires (Salmi & Torkkeli, 2009) that were useful in identifying some of the factors which impact knowledge transfer. However, these were inadequate in providing a holistic and in-depth understanding of such a complex phenomenon involving multiple set of factors which facilitate or inhibit knowledge transfer success. A questionnaire-based approach cannot fully capture the richness and social complexity of the inter-organizational knowledge transfer process (Perez-Nordtvedt et al., 2008).

Furthermore, there are few empirical studies which address the issue of knowledge transfer in IS outsourcing (Ko et al. (2005); Xu and Ma (2008) and Al-Salti, Hackney, & Ozkan, 2010). Ko et al. (2005) and Xu and Ma (2008) have emphasized on knowledge transfer during the outsourcing of the implementation of a single application, Enterprise Resource Planning (ERP) using a questionnaire-based approach. Al-Salti (2011) investigate and presented knowledge transfer in IS outsourcing in developing country, with specific to one country (i.e. Oman) using a qualitative approach.

Little is known about the holistic conceptualization of the key factors that impact inter-organizational knowledge transfer success, and even less is known about these factors in the context of IS outsourcing (Al-Salti, 2011). Even though much research on knowledge transfer exists, there is a gap between the theoretical recommendations and the actual task of establishing and executing knowledge transfer in IT outsourcing scenario (Aziati, Juhana, & Hazana, 2013). The other gap which has been identified is that despite the increasing number of studies concerning to IS outsourcing, there is limited study conducted in relation to developing countries. Aziati et al., (2013) and Al-Salti (2011) also recommended future research to be conducted in different organizations, sectors and national environments. Perez-Nordtvedt et al., (2008) in their part suggested that there is a dearth of interpretive qualitative research that can “fully capture the richness and social complexity of the knowledge transfer process”. Earlier research has attentive to the type of knowledge transferred, the source of knowledge, the recipient of knowledge or the

relationship between the two. The few exceptions Gupta and Govindarajan, (2000) and Szulanski (1996) have only examined Intra-organization (within an organization) knowledge transfer. Thus, the current understanding of what contributes to successful inter-organizational knowledge transfer is still quite limited.

To the best of the researcher's knowledge, this work is one of the first to examine about the situations in the context of inter-organizational knowledge transfer in IS offshore outsourcing in Ethiopian public companies in general and in Ethio telecom in specific. Since, more studies are required to understand the possible factors that impact knowledge transfer success from vendors to clients that provides a country and industry specific analysis of IS outsourcing in IT sector (Aziati et al., 2013). Ethio telecom is state owned sole telecommunications and IT service provider and its objective is to improve delivery of telecom services and modernize the operations to "world class standards", through capacity building for managers and transfer of know-how and best practices (Shewanawel, 2015). Ethio telecom engaged on IS outsourcing in offshore organizations, and it is also at the forefront in adopting up-to-date information systems among the public sectors in Ethiopia (Lishan, 2007).

Thus, based on the identification of gaps in the literature and prior studies recommendations this study sets out to answer the following research questions:

1. How does knowledge transfer from vendors to Ethio telecom in IS outsourcing take place?
2. What are the factors that influence the knowledge transfer between Ethio telecom and vendor companies?
3. Which factors are more important to facilitate knowledge transfer from vendors to Ethio telecom?

1.3. Objective of the Study

1.3.1 General Objective

The aim of the research is to examine knowledge transfer processes and identify the key factors that significantly impact knowledge transfer success from vendors to Ethio telecom in IS outsourcing.

1.3.2 Specific Objectives

In responding to the above general objective, this research addresses the following specific objectives:

- To examine the knowledge, transfer process employed by Ethio telecom to acquire knowledge from vendors.
- To identify the factors that facilitate or impede knowledge transfer success in Ethio telecom IS outsourcing.
- To propose organizational knowledge, transfer adoption model based on the research findings of IS outsourcing, knowledge transfer process, and the analysis of the affecting factors.

1.4. Significance of the study

This research help Ethio telecom manager to build knowledge transfer more effective and successful in IS outsourcing services with due consideration to the fundamental factors which are identified by this survey. In support of this idea, Appleyard (1996) highlighted that, “by understanding the mechanisms and determinants of knowledge flows, company managers.... can influence knowledge diffusion more effectively”. Acknowledging the comprehensive sets of elements that impact knowledge transfer success not simply increase the understanding of the knowledge transfer process, but also ensure effective outsourcing management by allowing practitioners to pay attention on specific ranges that are vital to the partnering. The comprehensive understanding of these main constituents is critical to the success of the knowledge transfer.

Hau and Evangelista (2007) highlight, “the acquisition of both tacit and explicit knowledge across partners is still relatively unexplored and not fully understood”. Similarly, Rashman and Hartley (2009) state that inter-organizational knowledge transfer and learning style “requires further conceptual development and empirical research to create a richer appreciation of how alliance learning happens”.

This study contributes to the understanding of how knowledge is transferred successfully from vendors to Ethio telecom in IS outsourcing. The value of this research is also recognized in the practical contribution to be achieved, by providing management advice to Ethio telecom which need guidance in order to improve the knowledge transfer process.

The findings offer concepts for future growth and development towards determining factors that influence knowledge transfer and encourage research to be conducted in this area.

1.5. Scope of the Study

This study undertakes the factors that affect knowledge transfer process from vendors to Ethio telecom (client) side, not from Ethio telecom (client) to vendors, which is only one side. Since The study considered the client as the knowledge recipient while the vendor is the knowledge source and followed the definition by (Lee, Miranda, & Kim, 2004).

Outsourcing in developing countries is often seen as an alternative for accessing the resources such as skill and competency (Waheed & Molla, 2004), focuses mostly on global offshore outsourcing (Nicholson & Sahay, 2004) and Ethio telecom is following offshore vendor financing (Lishan, 2007), this study consider offshore IS outsourcing, not onshore IS outsourcing.

This research also employed a single-case industry, Ethio telecom, which is highly involved in IS outsourcing and it is a good exemplary as an IT industry, since it is the sole telecom service provider in the country. A single case is often selected because the case under study is both an exemplary case, and a revelatory case, being one of the first investigations of the phenomenon (Yin, 2014).

1.6. Limitation of the Study

Although this research provides important insights with regard to knowledge transfer in IS outsourcing, there are some limitations which are worth noting for future research.

This study explored the client's perspective which is unidirectional knowledge transfer process, and the results obtained from the case study might not be generalizable to vendors. The study considered the client as the knowledge recipient while the vendor is the knowledge source and did not employed client and vendor perspective research questions to incorporate both client and vendor viewpoints, providing better understanding of knowledge transfer in dyadic relationship.

The researcher is working at the case organization and thus has an understanding of the operations and of the individuals involved in the research, the data analysis may have been influenced by researcher subjectivity.

1.7. Organization of the Thesis

The thesis comprises of five chapters, including this Introductory chapter. Chapter one aims to familiarize the reader to the rest of the thesis: it sets the foundations for the thesis. The chapter includes a brief description of the research question and research problem, the aim and objective of the research. It also justifies the significance of the research.

Chapter two aims to build a theoretical foundation for the research through a review of the existing relevant literature. It gathers the existing studies on knowledge management, IS outsourcing, inter-organizational relationships and organizational learning. The examination of these fields establishes the boundaries and identifies gaps in existing research. The chapter first reviews the development of the IS outsourcing phenomenon and its motivations, and examines the client-vendor relationships. It then addresses knowledge and knowledge transfer and highlights their critical importance to organizations.

Chapter three outlines the methodology used in this research. It presents the research approach and methods used to conduct the empirical investigation, with a detailed explanation of the rationale behind the choice of particular research methods. The chapter also explains the data analysis techniques used in this study.

Chapter four reports the key finding of the empirical investigation of the case study and presents the case study analysis. This chapter also offers an in-depth interpretation and discussion of the main findings of the research. Based on the interpretation, a revised framework for knowledge transfer success in IS outsourcing is offered.

The final chapter, chapter five, presents an overall summary of the thesis. Moreover, it highlights the contributions of the research. The chapter ends by acknowledging the research limitations and identifying areas for further study.

CHAPTER TWO: LITERATURE REVIEW

2.1. Overview

The purpose of this chapter is to review the related literature in IS outsourcing, the knowledge transfer and factors that affect knowledge transfer processes. The literature review presented in this chapter is divided into three primary parts. First, the chapter provides overall background about the IS outsourcing situation and discourses its main motivations. Then, the chapter gives a review of research relating to knowledge and knowledge transfer. The third section describes factors affecting knowledge transfer. The chapter ends by identifying the gap in the literature.

To determine the articles used in this review, highly ranked journals in the IS and Management fields were examined. Eisenhardt and Graebner (2007) state that, “sound empirical research begins with strong grounding in related literature”. The journals that are suggested by the Association for Information Systems, and knowledge management related journals, that are freely accessible were first browsed. Using the reference lists from articles acquired from these sources, articles from other journals and researches related to the subject under study that are conducted in Ethiopia or about Ethiopia were also reviewed.

2.2. IS Outsourcing Background

Public sector organizations are highly financing in innovative IS (Tseng, Yen, Hung, & Wang, 2008) to improve their internal efficiency (Doherty & Terry, 2009), to provide better services to nations and businesses (Tseng et al., 2008) and to improve transparency and trustworthiness (Armstrong, 2011). In developing countries, IS have become even an important element for development; improving existing government services, decreasing corruption and increasing accountability (Asorwoe, 2014). Smith (2011) also describes that IS “thought to bring increased efficiency, effectiveness, transparency, and accountability to the public sector; reducing corruption, improving service provisions, and democratizing the bureaucracy”. Similarly, Debretsion (2010) and Shegaw (2009) assert that the importance of ICTs in Ethiopia, in accelerating the democratization, nation building, access to better resources and new possibilities, while at the same time, reducing the national level of poverty. Ethio telecom as a public

organization is with the mission to deliver “telecom services accessible to all citizens to support the development of the country”¹.

However, not many organizations have sufficient internal knowledge, capabilities and expertise to develop, implement and maintain such sophisticated systems (Ko et al., 2005). As Slaughter and Kirsch (2006) state it, “in recent years, firms have invested heavily in software, as information technology (IT) plays a critical role in many aspects of the value chain. However, firms often fail in their attempts to build and deploy software”. Xu and Ma (2008) also describe that “without external help, hardly any organization can implement ERP successfully”. In support of this Daniel (2010) states, “Ethiopia is a developing country, lacks the human resources and infrastructure to develop and use the IT system in-house”. Muluneh (2009) on his part stress that the motivation behind the decision for Ethiopian Telecommunication Corporation (ETC), now called Ethio telecom, IS outsourcing as “lack of internal expertise”.

Therefore, organizations are increasingly outsourcing IS to external specialized vendors that have acquired experience and knowledge bases (Al-Qirim & Bathula, 2003). Today, IS outsourcing are among the top agendas of IS executives (Atescia et al., 2010) and is regarded as one of the “most discussed topics in both the academic and practitioner media” (Rustagi, King, & Kirsch, 2008).

The amount and value of IS outsourcing deals have raised, with client organization ready to outsource a wide range of IS services, increasing the scope and value of the IS outsourcing market (Yang & Huang, 2000).

IS outsourcing is also distributed geographically (Gonzalez, Gasco, & Llopis, 2005), and several destinations have become attractive for outsourcing activities.

This development in IS outsourcing encouraged strong academic interest in the phenomenon (Wang, Lin, & Huang, 2008). Suhaimi, Hussin, and Mustaffa (2007) state that “academic research on IS outsourcing has evolved rapidly”, resulting in an increase in the volume of literature devoted to it. Dibbern, Goles, Hirschheim, and Jayatilaka (2004) give a comprehensive analysis of the academic literature between 1992 and 2000 on IS outsourcing and point out the main outsourcing concerns. These include: “why to outsource, what to outsource, which decision process to learn,

¹ Ethio telecom official website

<http://www.ethiotelecom.et/?q=search/node/mission> (accessed on December 19,2017)

how to implement the sourcing decision and what is the consequence of the sourcing decision”. The study of Lacity, Khan, Yan, and Willcocks (2010) also examines 164 empirical IS outsourcing articles published between 1992 and 2010 in 50 journals and indicates future academic research fields. The authors stressed the value of outsourcing and established two models of IS outsourcing endeavor. The first model dealt with IS outsourcing decisions. Which comprises “motives to outsource, transaction attributes, client firm characteristics and influence sources”. The second model stressed the IS outsourcing outcomes. Such as “client and supplier capabilities, relationship characteristics, contractual governance, decision characteristics, and transaction attribute”. Moreover, the study promoted that IS outsourcing field is growing swiftly with rich ranges of inquiry, and so future researchers should shed further light on topics such as strategic IS outsourcing outcomes, dynamic relations between outsourcing and client abilities and legal and business environment uncertainties.

Mereasa (2007) on his study on Outsourcing in Ethiopia, also addressed why companies are outsourcing their Information technology and the reasons are “improving service quality, acquiring innovative ideas, knowledge and skills, allowing more focus on core business, increase flexibility to match varying business conditions, deficiency of internal expertise”.

2.2.1. IS Outsourcing Definition

Various definitions of IS outsourcing have been found in the literature (Hancox & Hackeny, 2000). Hu, Saunders, and Gebelt (1997) define IS outsourcing as a business practice whereby a client organization contracts out its IS operations to one or more outside vendors to realize certain goals. On the other hand, IS outsourcing is stated by Saunders, Gebelt, and Hu (1997) as the buying of IS products or services that were previously provided in-house. Another definition for IS outsourcing is offered by Paisittanand and Olson (2006) as a contract agreement involving the purchase of IS related resources from external specialized vendors.

Nevertheless, defining outsourcing merely in relations of procurement of IS activities not indicate the factual strategic nature of the event. Outsourcing is not simply a purchasing decision (Gilley & Rasheed, 2000). On the contrary, this work indicates that outsourcing is a highly strategic decision. IS outsourcing encompasses a partnering between the client and vendor, through which the client organization has the possibility to gain access to and transfer vital knowledge, skills and competencies of the vendor. Thus, this study defines IS outsourcing as a strategic alliance between

a customer and a vendor coming up with a common agreement in which the vendor delivers certain IS products and services to the customer for an agreed fee, over a definite time period. This definition makes it clear that IS outsourcing is a sort of inter-organizational partnership, in that it comprises two separate and discrete entities - the client (i.e. the service receiver), and the vendor (i.e. the service provider) - in a contractual arrangement characterized by a series of interrelated and continuing interactions (Lee, Miranda, & Kim, 2004).

There are a wide variety of IS functions that are outsourced and they range from simple back office systems to fully integrated enterprise systems (Waheed & Molla, 2004). The most frequently outsourced IS functions are application development, application maintenance, systems operations, hardware maintenance, network, end user support and data centers (Waheed & Molla, 2004; Muluneh, 2009 and Meresea, 2007). A study by Meresea (2007) indicate that application development is the most commonly outsourced function, followed by applications maintenance, telecommunication, PC maintenance, systems development, data center operations, systems maintenance, PC acquisition and project management. Nevertheless, Muluneh (2009) cautions that some IS functions should not be outsourced and instead kept in the hands of an organization's internal IS department.

2.2.2. IS Outsourcing Motivations

The motivating factors that contribute to the growth of IS outsourcing are categorized into three main parts: economic, technological and strategic as summarized in Table 2.1.

Category	Factors	Key References
Economic	Cost Reduction	Sood (2005); Beaumont and Costa (2002); Barthelemy and Geyer (2001); McFarlan and Nolan (1995)
	Risk Sharing	Sood (2005); Quelin and Duhamel (2003); Beaumont and Costa (2002)
Technological	Avoidance of Obsolescence	Tafti (2005); Beulen (2004); Beaumont and Costa (2002); Chen and Soliman (2002); Barthelemy (2001)
	Access to Leading-Edge Technologies	Li, Wei, and Yi Liu (2010); Claver, Gonzalez and Gasco (2002) Harris, Giunipero and Hult (1998)
Strategic	Focus on Core Business	Suhaimi, Hussin and Musttafa (2007); Paisittanand and Olson (2006) ; Beaumont and Sohal (2004); Gilley and Rasheed (2000)
	Knowledge transfer and learning	Lacity et al. (2010) ; Wang et al. (2008); Ko et al. (2005); Khalfan and Alshawaf (2003); Altinkemer, Chaturvedi, and Gulati (1994); Gordon and Walsh (1997)

Table 2.1: Motivations for IS outsourcing

2.3. Knowledge Definition

Despite the fact that knowledge is a multifaceted concept which is difficult to define (Liyanage, Elhag, Ballal, & Li, 2009), there are different, but interrelated definitions. Alavi and Leidner (2001) defined knowledge as “a fluid mix of framed experience, values, contextual information, and expert insight that provide a framework for assessing and integrating new experiences and information”. Knowledge is defined by Slaughter and Kirsch (2006) as “information possessed by an individual that, when aggregated with other personal dimensions such as experience and reflection, becomes a basis for action”. Kogut and Zander (1996) on their part described knowledge in such a manner that it consists of skills and competencies, and defined it as “accumulated practical skill or expertise that permits one to do something smoothly and efficiently”. In the perspective of business, therefore, knowledge can be realized as appropriate, information that is built on experience and often increases an individual’s capacity to take effective action (Alavi & Leidner, 2001).

2.3.1. Knowledge Dimensions

In acquiring an understanding of the knowledge transfer, it is important to start with a brief discourse of the dimensions of knowledge. There are two primary dimensions of knowledge: explicit and tacit (Nonaka & Takeuchi, 1995). Table 2.2 illustrates the differentiation between these two topologies.

Tacit Knowledge	Explicit Knowledge
Inexpressible in a codifiable form	Codifiable
Subjective	Objective
Personal	Impersonal
Context-specific	Context-independent
Difficult to share	Easy to share

Table 2. 2: The characteristics of tacit and explicit knowledge

Source: Adopted from Hislop (2009)

Explicit knowledge can be articulated, codifiable and communicable that exists in words or written format and stored in readily accessible media such as manuals, documentations, procedures and program codes (Kumar & Ganesh, 2009). Welch and Welch (2008) that explicit knowledge can be expressed in conventional language with grammatical statements, mathematical rules, specifications, and technical drawings. Similarly, Inkpen (2000) advocates that explicit knowledge can be said in the schemata, diagrams, and charts, and thus it is comparatively easy to transfer and gain.

Tacit knowledge, on the other hand, exists in the intellects of people and comprises perceptions, intuitions, thoughts, emotional feelings, expertise and experience (Liyanage et al., 2009).

Irani, Sharif, and Love (2005) mentions that tacit knowledge is “profoundly rooted in the behaviors and actions of people, who sustain a commitment to a specific setting such as a peculiar area of expertise or a series of work practices”. This sort of knowledge is learned through long periods of familiarity and repetitive performance of projects. King (2009) suggests that tacit knowledge “is laboriously developed over a long period of time through trial and error”. Tacit knowledge often requires very close and extensive individual collaboration between the source and the recipient in order for it to be effectively transferred (Chen & McQueen, 2010). As stated by Foos, Schum, and Rothenberg (2006), tacit knowledge is generated from accumulative personal experience acquired

over time and is often learned through shared and cooperative experience. It is “highly context specific and has a personal quality” (Inkpen, 2000). Tacit knowledge is also termed sticky knowledge because it may be relatively difficult to isolate it from its source (Szulanski, 2003), particularly in the event of inter-organizational knowledge transfer. As Schulz (2001) state it, tacit knowledge “travels, particularly poorly between organizations”.

Consequently, tacit knowledge is difficult, expensive or even in some situations difficult to express (Hackney, Desouza, & Leobecke, 2008). Such knowledge may not be simply transferred, either orally or through a printed document, and yet it is very important and valuable (Lam A. , 2000). McManus and Snyder (2003) argue that tacit knowledge is responsible for more than 70% of organizational knowledge. Moreover, Cooper and Schindler (2011) consider tacit knowledge to be more valued and important in realizing a competitive advantage.

Nonaka and Takeuchi (1995) offer four related and entangled modes of knowledge creation. This conceptualization shows how knowledge (tacit/explicit) is changed to another form (tacit/explicit). This is frequently expressed as the SECI model, an acronym specifying four knowledge conversion types: Socialization, Externalization, Combination, and Internalization.

2.3.2. Importance of Knowledge

The importance of knowledge has been discussed widely in the literature. In today’s knowledge-based society, knowledge has become gradually accepted as the most valued and strategically important resources within an organization (Park B. I., 2011). Nonaka (1991) highlight that, “in an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge”. Similarly, Hackney, Desauza, and Loebbecke (2005) also state that “knowledge possessed by an entity, whether it is an individual, group, organization, or an inter-organizational network, is a source of power”.

Nowadays, knowledge plays a dynamic role in organizational performance and business success (Kuo, 2011). Moreover, it has been considered as a dominant tool to take better decision-making and a vital source of innovation (He & Wei, 2009). King (2009) maintains that knowledge is potentially predictive and may lead to diagnoses and better understanding of business concerns, processes and objectives. Increasingly, knowledge is also recognized for its significance as a critical resource for firms’ competitive advantage (Wang & Neo, 2010).

Based on the above discussion, it is worth noting that knowledge has become the source of power for modern organizations and has been accepted as the key to competitive advantage. While explicit knowledge can be articulated, expressed and transferred formally and easily, tacit knowledge needs direct communication between individuals, networking and face-to-face social interaction to be effectively transferred. The next section presents the definition of knowledge transfer and addresses how knowledge is transferred within and between organizations.

2.4. Knowledge Transfer

There is an increasing body of academic and empirical research addressing knowledge transfer and its significance for organizational success. The next sub-sections define knowledge transfer and discuss how knowledge is transferred within and across organizational boundaries.

2.4.1. Knowledge Transfer Definition

The literature provides numerous, but related definitions of knowledge transfer. Ko et al. (2005) defines Knowledge transfer as “the communication of knowledge from a source that is learned and applied by a recipient”. Kumar and Ganesh (2009) also describe knowledge transfer as “a process of exchange of explicit or tacit knowledge between two agents, during which one agent receives and uses the knowledge provided by another”. It is thought as an exchange method in which a source avail knowledge to be acquired by the recipient (Slaughter & Kirsch, 2006). Therefore, knowledge may be deliberately transferred or it may happen as the unplanned outcome of other activities, social exchanges and unintended meetings (Welch & Welch, 2008). There are numerous other terms used in the literature to describe the knowledge transfer such as ‘knowledge flows’ (Rothaermel & Thrsby, 2005), ‘knowledge sharing’ (Lilleoere & Hansen, 2011) and ‘knowledge acquisition’ e.g. (Tsang, 2002). For terminological clarifications, it has been decided to merge these definitions under the term knowledge transfer as it is more recognized in several literary works. Figure 2.1 provides a graphic illustration of knowledge transfer.

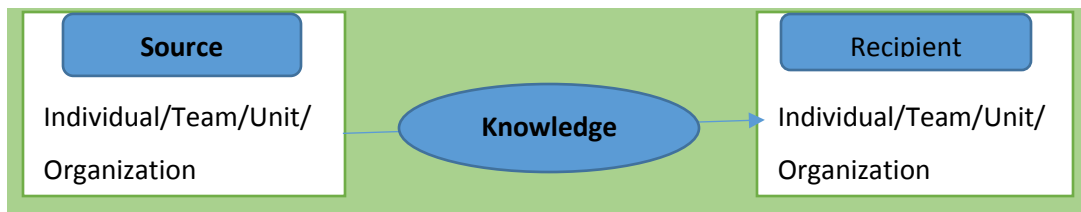


Figure 2. 1: Graphic illustration of knowledge transfer

Source: Adopted with modification from Kumar and Ganesh (2009)

Knowledge transfer can take place within an organization (i.e. intra-organizational knowledge transfer) or across organizational boundaries (i.e. inter-organizational knowledge transfer) (Ahmad & Daghfous, 2010). The next sections briefly discuss intra-organizational knowledge transfer and inter-organizational knowledge transfer.

2.4.2. Intra-organizational Knowledge Transfer

Intra-organizational knowledge transfer is the sharing of important knowledge between units or individuals within the same organization (Ipe, 2003). It is the method by which knowledge held by a unit or an individual is accessible to others within the same organization (Kalling, 2003). Evidence is accumulating that knowledge transfer across organizational units within firms offers viable benefits. Organizations which are able to transfer knowledge successfully between one unit and another are more productive and more likely to persist than organizations which are less adept at knowledge transfer (Lee & Ahn, 2007). Renzl (2008) states that intra-organizational knowledge transfer is “of vital importance to organizations, enabling them to develop skills and competencies, increase value, and sustain their competitive advantage”. Furthermore, intra-organizational knowledge transfer often leads to the distribution of vital knowledge and innovative concepts which are considered critical to creativity and subsequent innovation in organizations (Ipe, 2003). Lilleore and Hansen (2011) study knowledge transfer in a pharmaceutical R&D and propose that it improves the creation of new knowledge, possibly allowing new innovative products to be developed at better speed. Many organizations have already realized significant benefits of transferring knowledge across units, for example, Toyota (Dyer & Nobeoka, 2000), IKEA (Jonsson & Elg, 2006) and Tata (Oshri, Fenema, & Kotlarsky, 2008). Cabrera and Cabrera (2005) state the significance of intra-organizational knowledge and argue that the knowledge, understandings and best practice held by an individual or a unit must also be handed to others in the same unit or other units within the organization in order to be assumed and leveraged to the overall business units.

However, not all organizations own all the knowledge and competences required to accomplish each activity internally, and so they need to search knowledge, understandings and skills externally, and learn from the experience of other organizations (Chen C.-J. , 2004). As Costa and Peiro (2009) describe, “in today’s business environment, organizations can no longer rely only on

their own knowledge and competencies to advance their business”. Abou-Zeid (2002) maintains that since knowledge is continuously varying and growing, most organizations cannot own all needed knowledge within their boundaries. He indicates that “since no single firm has the full range of knowledge and expertise needed for timely and cost-effective product and service innovation, firms are increasingly setting up various forms of collaborative arrangements in order to access knowledge and capabilities unavailable internally”. Similarly, Rai and Tang (2010) propose that in today’s business situation, it is unusual for an organization to be able to create and develop all knowledge internally and introduce effective competitive actions independently. Instead, an organization’s competitive actions are embedded in the knowledge that is learned through an alliance of inter-organizational relations (Hackney et al., 2008; Anand et al., 2002). Chen C.-J. (2004) supports that effective organizations are those “that not only are able to create knowledge within their boundaries, but also can expose themselves to a variety of new knowledge from outside in order to prevent rigidity and to encourage the reshaping of their competencies”.

2.4.3. Inter-organizational Knowledge Transfer

Inter-organizational knowledge transfer has been broadly acknowledged in current works as dominant and critical to an organization’s existence and competitiveness (He, Gallear, & Ghobadian, 2011). It has been debated that companies enjoy a competitive advantage if they identify how to effectively and efficiently transfer vital knowledge from their business allies. Easterby-Smith, Lyles, and Tsang (2008), for example, explain that “while such knowledge is normally developed within the firm, it is important that firms possess the ability to learn from others in order to meet the increasing pace of competition”. Likewise, Wijk, Jansen, and Lyles (2008) state that “transferring knowledge from external parts has become vital to a company’s success. Inter-organizational knowledge transfer takes place when precise knowledge is delivered on from one firm to the other (Buckley, Glaister, Klijn, & Tan, 2009). Vaara, Sarala, Stahl, and Bjorkman (2012) state inter-organizational knowledge transfer as the valuable practice of knowledge, capabilities, or skills initially exist in another organization. Inter-organizational knowledge transfer is the method by which an organization recognizes and acquires precise knowledge which exists in another organization (Oshri et al., 2008). Hamel (1991) defines inter-organizational knowledge transfer as a method that involves of two vital steps. First, knowledge needs to be revealed by the ‘expert partner’ or the organization that owns the knowledge. Secondly,

the revealed knowledge needs to be attained and adapted by the ‘novice partner’, the organization that requires the knowledge.

Transferring knowledge across organizational boundaries can produce huge benefits, particularly for organizations that are unable or have difficulties developing in-house knowledge (Easterby-Smith et al., 2008). Nowadays, inter-organizational knowledge transfer is seen, as critical to guaranteeing effectiveness and efficiency (He et al., 2011). As Squire, Cousins, and Brown (2009) state, “firms that can successfully transfer and absorb knowledge across boundaries accumulate a range of performance benefits, including reduced failure rates and increased productivity”. Correspondingly, Perez-Nordtvedt et al. (2008) propose that inter-organizational knowledge transfer contributes to an increase in an organization’s stock of knowledge and has been found to influence main organizational outcomes, including human resource development and performance. According to Darr and Kurtzberg (2000), new knowledge can encourage innovations in new approaches and practices, which can then be absorbed into the routines and culture of an organization.

A main driver of many inter-organizational knowledge transfer activities has been the need to acquire and attain valuable resources, including knowledge, capabilities and technologies possessed by the source firms (Ranft and Lord, 2002). Previous inter-organizational studies note that organizations acquire by cooperating with other organizations, transferring knowledge and by observing and introducing best practices. Renzl (2008) suggests that inter-organizational knowledge transfer empowers organizations to develop new skills, increase value, and extend their knowledge base. A study by Linder (2003) of the senior executives of forty international companies covering numerous industries out that 45% of their innovations came from external sources.

Extant literature has studied inter-organizational knowledge transfer in diverse activities, including strategic partners, joint ventures, supply chain, and research and development. Table 2.3 provides a summary of certain studies which explore inter-organizational knowledge transfer within various affairs. These studies advocate that the act of introducing new external knowledge and combining it with existing knowledge offers recipient organizations with capabilities to improve their performance and decision making.

2.4.4. Knowledge Transfer in IS Outsourcing

The rising importance of knowledge transfer in IS outsourcing stems from the acknowledgement that organizations can no longer be exclusively qualified to internal features, but also depend on knowledge and capabilities learned from external vendors (Xu & Ma, 2008). IS outsourcing is a practical organizational structure and a productive environment that provides client organizations with a platform for transferring knowledge that is not existing or hard to develop in-house. Leavy (1996) claims that the paramount benefit of outsourcing is “the opportunity to harness the complementary core competencies of an array of sophisticated suppliers”. Heeks (2006) identified that one of the key drivers behind IS outsourcing by public sector organizations is to access a pool of new external knowledge which is not existing inside. In a like manner, Tafti (2005) states that, “one of the key reasons organizations outsource their IT activities is to tap into the broad knowledge and technical experience that a vendor may provide”. Knowledge transfer in IS outsourcing empowers clients to use complementary technical know-how and expertise provided by vendors to resolve difficult technical problems, manage complex projects, apply new ways of doing things, improve IS staff expertise and performance and improve actions (Oshri et al., 2008).

Study	Context	Setting	Aim	Results
He et al., (2011)	Supply chain	China	Examine the relational attributes that cultivate knowledge transfer in supply chain partnerships	Trust, commitment, interdependence, shared meaning, and balanced power facilitate knowledge transfer in supply chain partnerships
Williams (2011)	Offshore outsourcing	India	Develops and tests a model of client–vendor knowledge transfer at the level of the individual offshore information systems engineer	Knowledge transfer success is associated with formal training and client embedment, informal discussion and previous experience
Faems, Janssens, and Looy (2007)	R & D	Belgium	Examines the process of inter-firm knowledge transfer in R&D relationships	Legal clauses, expectations of a long term relationship and similarity of technological equipment are important facilitators for acquisition and assimilation of knowledge
Muthusamy and White (2005)	Strategic alliance	USA	Examines the effects of the social exchange process between alliance partners on knowledge transfer	Social exchanges (reciprocal commitment, trust, mutual influence) between alliances have strong influence on the extent of inter-organizational knowledge transfer and learning.
Rothaermel and Thrsby (2005)	University–incubator firm	USA	Investigates how knowledge flows from universities to incubator firms and assess the effect of these knowledge flows on incubator firm level differential performance	Incubator firms’ absorptive capacity is an important factor when transforming university knowledge into firm-level competitive advantage
Pak and Park (2004)	Joint venture	Korea	Examines the determinants of cross border knowledge transfer from MNEs to Korean firms	Positive social interaction is pivotal and it provides firms with a learning environment which facilitates the transfer of new knowledge and skills.

Table 2. 3: Selected studies on inter-organizational knowledge transfer

There are two key kinds of knowledge which are transferred from sources to recipients in IS outsourcing, “technical knowledge and business knowledge” (Goles, Hawk, & Kaiser, 2008). Technical knowledge is described by Tiwana, Bharadwaj, and Sambamurthy (2003) as “knowledge that is used to translate business needs into a software based solution”. Technical knowledge is recognized as “being more specialized and closely tied to the IT artifact” (Rong & Grover, 2009). This includes knowledge, such as programming, operating, configuring and testing (Rong & Grover, 2009). Technical knowledge is elaborated cumulatively and enhanced over time through involvement in various IS projects (Harrington & Guimaraesb, 2005). Business knowledge is described by Bassellier and Benbasat (2004) as a set of knowledge that “enables IS professionals to understand the business domain, speak the language of business and interact with other business partners”. This includes knowledge, such as planning, project management, contract negotiation, risk assessment and business process re-engineering ” (Rong & Grover, 2009).

Part of the technical and business knowledge which is transferred from vendors to clients in IS outsourcing is explicit and well-documented (Narteh, 2008). This form of knowledge can be simply passed in or transferred in files to the client organizations. This kind of knowledge, usually includes routine work processes, standard rules of operations, well-defined product specifications and project plans. Some other part of knowledge is more tacit and must be described, placed in context, or elaborated on, often via two-way communication. Such knowledge is frequently transferred through on the job training programs, face to face meetings, or other collaborating and shared means.

In summary, the extant literature on inter-organizational knowledge transfer has concentrated on numerous factors that influence knowledge transfer success. However, significant gaps, especially associated with the context of IS outsourcing still exist. The gaps that are addressed in this study are described in the next section.

2.5. Factors affecting the knowledge transfer process

In the IS outsourcing context, the client tries to transfer, obtain and apply the external knowledge from the vendor. Furthermore, knowledge transfer and acquisition allow client organizations to develop skills and competencies, increase value, and sustain their competitive advantage (Karlsen & Gottschalk, 2004). Literature recommended that, the success of knowledge transfer and acquisition in IS outsourcing relies on the result of four sets of factors such as, knowledge factors,

client factors, vendor factors and relationship factors. In this study, the vendor is the source of knowledge and the client is the recipient of knowledge. Table 2.4 illustrates the main studies that have discussed some of the factors that impact knowledge transfer success in IS outsourcing.

Factor \ Study	Knowledge related factor			Recipient related factor			Source related factor		Relationship related factor	
	Tacitness	Complexity	Causal ambiguity	Learning intent	Absorptive capacity	Motivation	Capability	Credibility	Organizational distance	Social ties
Al-Salti (2011)	√	√			√	√	√		√	
Blumenberg, Wagner, and Beimborn (2009)	√									
Gregory, Beck, and Prifling (2009)						√	√	√	√	
Xu and Ma (2008)	√		√	√	√	√		√		
Han, Lee, and Seo (2008)							√			
Lee, Huynh, and Hirschheim (2008)	√							√		
Joshi, Sarker, and Sarker (2007)							√	√		
Gosain (2007)	√	√						√		
(Wang E. T., Lin, Jiang, and Klein (2007)					√		√			
Bandyopadhyay and Pathak (2007)				√						
Srivardhana and Pawlowski (2007)					√		√			
Park and Yang (2007)				√						

Pardo, Cresswell, Thompson, and Zhang (2006)	√	√				√		√	√	
Xu et al., 2006					√					
Mirani (2006)							√	√	√	
Ko et al., (2005)					√	√		√		
Imsland and Sahay (2005)	√								√	
Sarker, Sarker, Nicholson, and Joshi (2005)							√	√	√	√
Nicholson and Sahay (2004)	√								√	
Lee J.-N. (2001)	√								√	
Timbrell, Andrews, and Gable (2008)			√		√	√		√		

Table 2. 4: Selected studies that have discussed some of the factors that influence knowledge transfer success in IS outsourcing

2.5.1. Knowledge Factors

The ease of knowledge transfer and acquisition is affected by the nature and the characteristics of the fundamental knowledge (Narteh, 2008). The knowledge management works identified several dimensions by which knowledge is described. The two most referred magnitudes are complexity and tacitness (Gosain, 2007). Knowledge complexity is stated by Simonin (1999) as “the number of interdependent routines, individuals, technologies and resources linked to a particular knowledge”. Knowledge tacitness is described by Gosain (2007) as “how easy or difficult it is to codify and articulate the information that needs to be transferred for specific knowledge”. Renzl (2008) stated that knowledge that can be articulated and codified can be documented and then transfer more easily than non-codifiable knowledge.

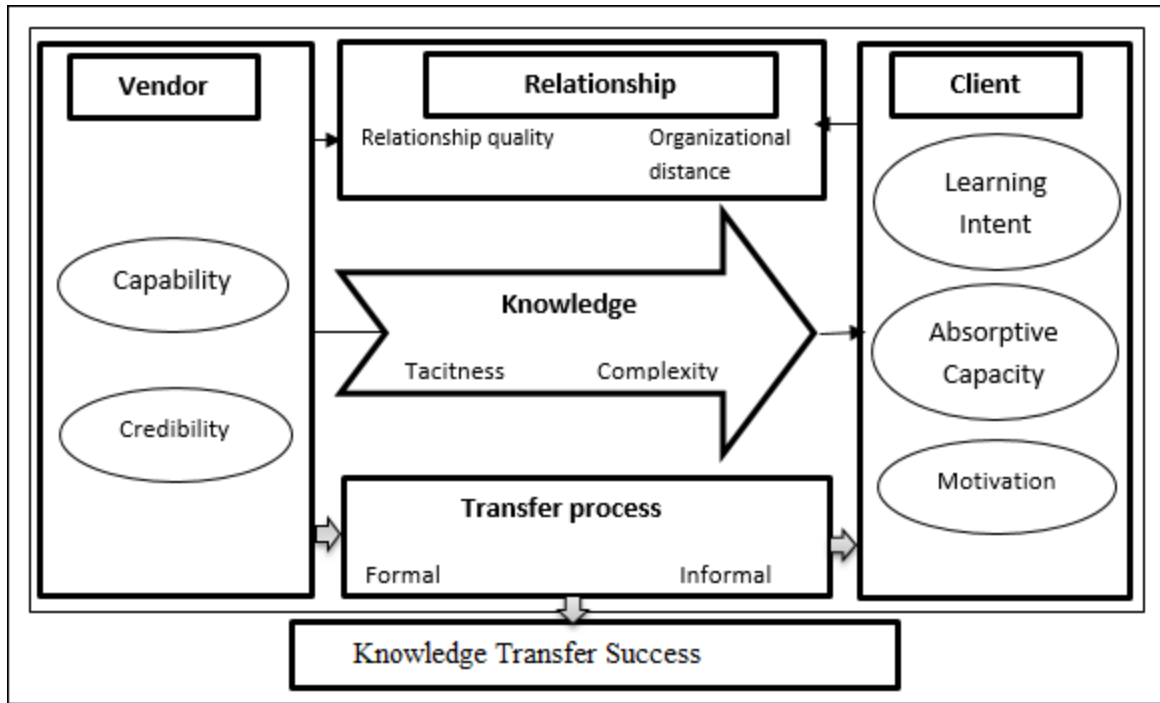


Figure 2. 2: Knowledge Transfer Framework

Source: Adopted with modification from Al-Salti (2011)

2.5.2. Client Factors

The transfer of knowledge depends not only on the characteristics of the knowledge transferred, but also on the learning capability, absorptive capacity and motivation of the recipient of knowledge. Learning capability is the extent to which the receipt has the potential to learn and acquire new knowledge and skills proposed by the source (Tsang, 2002). Learning capability is found to improve the quantity of knowledge transferred (Narteh, 2008). If the recipient has the good learning capability and is self-motivated to gain knowledge possessed by the source, it will be well organized mentally to understand and adapt the knowledge (Easterby-Smith et al., 2008). Bandyopadhyay and Pathak (2007) discovered knowledge sharing in outsourcing projects and identified that knowledge sharing success depends on the learning capability of the recipient and the time and efforts given to gain the knowledge. Another factor that identified to impact knowledge transfer success is absorptive capacity. Absorptive capacity is defined as the ability of the recipient to distinguish the value of the new knowledge provided by the source, adapt it and apply it new and untested business situations (Schmidt, 2010). The study of Ko et al., (2005),

explained how knowledge transfer success is much related to that capacity of the clients (recipient) to absorb the transferred ERP knowledge from the consultants (source) and effectively apply it to commercial ends. Zahra and George (2002), on the other hand, found that lack of absorptive capability is one of the primary factors that hamper knowledge transfer success. The underlying premise is that a recipient's stock of prior related knowledge and experience is essential to effectively absorb and utilize external knowledge (Srivardhana and Pawlowski, 2007). An important factor that has been identified by the literature to impact knowledge transfer success is the motivation of the recipient to explore and acquire valuable knowledge (Ko et al 2005). Xu and Ma (2008) investigated the key determinants of ERP implementation knowledge transfer and found that the stronger the motivation to learn, the more likely it is that individuals will attempt to master and use new external knowledge. Motivations for transferring knowledge range from extrinsic incentives such as bonuses to intrinsic motivations such as praise and public recognition (Chua & Pan, 2008).

2.5.3. Vendor Factors

The third category is related to the source of the knowledge. The two factors that are identified in this set are called source capability and source credibility. Such capability is the extent to which the recipient views the source as skilled and expert and has a rich technical and business knowledge-base (Joshi et al., 2007). Capable and committed source tends to devote time and resources to support the transfer of knowledge to the recipient (Gregory et al., 2009). Tan (2009) examined the factors affecting IS outsourcing success and identified that vendor capability is vital as skilled vendors tend to retain excessive reservoirs of knowledge, skills and expertise. A study by Wang et al. (2007) on knowledge transfer in ERP implementation highlighted the importance of consultants' (i.e. source) capability "to offer related and needed knowledge, to mobilize various skills, and to help the client configure and derive value from the ERP package". Source credibility is also identified to simplify knowledge transfer. Joshi et al. (2007) defined source credibility as "the extent to which a recipient perceives a source to be trustworthy and reputable". Trust is the confidence that the source's expression is dependable and that it will satisfy its duty as specified in the agreement (Timbrell et al., 2008). Lee et al. (2008) explored the effect of trust on IS outsourcing success and identified that mutual reliance simplifies knowledge transfer between vendors and clients. THE Reputation has been viewed as vital for knowledge transfer success because it is often used in selecting and evaluating the significance of the source of knowledge

(Joshi et al., 2007). Initiating a knowledge transfer from a reliable and dependable source tend to be less challenging (Lander, Purvis, McCray, & Leigh, 2004). However, in the absence of trust, recipient perceives a source's knowledge to be less valuable and not much persuasive (Ko, Krisch, & King, 2005).

2.5.4. Relationship Factors

The nature of the relationship and the interaction between individuals of the client and the vendor organizations found to impact the effectiveness and the success of knowledge transfer in IS outsourcing (Ko et al., 2005). Ranft and Lord (2002) argued that many of the knowledge transfer difficulties stems from organizational issues and human resource conflicts between the source and the recipient of knowledge. The two key factors that have been identified are: organizational distance and social ties. Organizational distance measures the degree of organizational combination between the source and the recipient of knowledge (Cummings & Teng, 2003). The knowledge transfer literature identified three main types of organizational distance, namely physical distance, organizational culture distance and national culture distance.

Geographical distance refers to the trouble, time requirement and expense of communicating and coming together face to face (Cummings & Teng, 2003). Nicholson and Sahay (2004) studied knowledge transfer in software offshore outsourcing project between a British firm and an Indian vendor and found that geographical departure negatively impacts knowledge transfer, resulting in misunderstanding. Organizational culture distance is the extent to which the source and the receipt of knowledge possess different work values, ideologies, norms and, problem-solving approaches (Ko et al., 2005). Difficulties in knowledge transfer tend to arise when there are differences in organizational culture. Krishna, Sahay, and Walsham (2006) explored the impact of organizational culture distance in IS offshore outsourcing between a Japanese client and an Indian vendor. The study discovered that Japanese takes much longer time to reply to emails as related to Indians, and this had a negative effect on knowledge transfer between the two countries. National culture distance has been widely recognized as a major inhibitor for knowledge transfer between the source and the recipient in IS outsourcing, particularly when it comes to offshore outsourcing (Imsland and Sahay, 2005). National culture distance is when the source and the recipient of knowledge, lack a shared language, ethics, views and cultural background understanding (Narteh, 2008). Goles and Chin (2005) investigated the key relationship factors that impact IS outsourcing

and found that cultural background difference and language incompatibility can be a major stumbling block for outsourcing relationships in general and knowledge transfer in particular. Therefore, it can be concluded that insufficient background about one another, lack of a common language and cultural misunderstanding restricts the capacity of the client to transfer knowledge from the vendor in IS outsourcing.

Social links have received a great deal of attention in inter-organizational collaboration literature (e.g. Jasimuddin, 2007), particularly in knowledge intensive works such as IS outsourcing (e.g. (Kotlarsky & Oshri, 2005). Oshri, Kotlarsky and Willcocks (2007) conducted a qualitative case study to discover how globally dispersed information systems development work is impacted by socialization and face-to-face meetings. The study identified that face-to-face meetings allow IS professionals from the client and vendor organizations to develop interpersonal relationship and therefore share knowledge informally. Other knowledge transfer studies emphasized the importance of personal ties in facilitating the communication of no-codified knowledge. For example, Blumenberg et al. (2009) suggested that frequent face-to-face interaction is crucial for transferring technical tacit knowledge in IS outsourcing projects. However, this demands a close partnership between the client and the vendor (Goles & Chin, 2005).

2.5.5. Knowledge Transfer Process

This category characterizes the channels that are used to transfer knowledge from the vendors to the clients. The literature proposes a range of knowledge transfer processes that are used to transfer explicit and tacit knowledge from the source to the recipient. Jasimuddin (2007) employs the term ‘appropriateness’ to describe the “extent to which a mechanism is useful and convenient to post out the transport of knowledge”. Knowledge transfer scholars identify various related approaches to classify knowledge transfer process, but the most usual method is separating the processes into structured and unstructured (Boh, 2007).

There are many structured processes in transferring knowledge from the source to the recipient (Hong & Nguyen, 2009). Easterby-Smith et al. (2008) suggest that knowledge is often transferred through documents, blueprints or electronic media that embody the knowledge transferred to the recipient organization. Dedrick, Carmel, and Kraemer (2011) argue that well-documented knowledge, such as repetitive work practice, standard guidelines of operations, precise product specifications and project plans can be transferred simply from one organization to another.

According to Slaughter and Kirsch (2006) knowledge is transferred structurally through organized training, observation of experts, tooling and formal meetings. However, Strach and Everett (2006) debate that working in the same field (i.e. learning-by-doing) yields more knowledge transfer and learning than typical classroom training. In their study of IS outsourcing, Chua and Pan (2008) highlight that seminar presentations offered by vendors to internal IS staff within the client organizations during the outsourcing projects are one of the common processes for one-to-many knowledge transfer. The study further points out that oral presentation often offers larger quantities of information and therefore are more suitable for raising awareness of a particular new topic or technology and giving a broad overview of key concepts.

Earlier inter-organizational studies have recognized the importance of utilizing unstructured processes for transferring knowledge, mainly with tacit aspect Blumenberg et al. (2009) indicates, “tacit knowledge transfer generally requires extensive personal contact and extensive socialization”. With similar vein, Hoegl, Parboteeah, and Munson (2003) advocate that when individuals have unstructured and rich communication interfaces, the transferability of critical knowledge facilitated, and individuals consume less resources to acquire and utilize the required knowledge.

Social bonds have been increasingly viewed as important and effective channels for knowledge transfer (Easterby-Smith et al., 2008), especially in knowledge intensive works such as IS outsourcing (Kotlarsky & Oshri, 2005). For example, Blumenberg et al. (2009) indicate that frequent F-2-F interaction is essential for transferring technical tacit knowledge in IS outsourcing projects. In a like vein, Hansen (1999) points out that repeated interactions between people with strong ties facilitate knowledge acquisition. The findings of Carlile (2004) study propose that effective knowledge transfer needs social linkages over which individuals improve a common language, understanding, and interests.

However, there has been some debate as to whether the two modes (structured and unstructured) are substitutes or complements, but there is a general consensus that both are instrumental in transferring knowledge (Slaughter & Kirsch, 2006). Argote and Ingram (2000) note that transferring knowledge with a combination of task and tool elements can be effectual. Other researchers observe similar findings about the usage of multiple varieties of operations. Galbraith

(1990), for instance, points out that effective knowledge transfers utilize a combination of structured and unstructured processes.

2.5.6. Knowledge Transfer Success

The definition of knowledge transfer success varies somewhat in the literature. At the most basic level, knowledge transfer success is defined as the quantity of knowledge transfers engaged during a certain time period (Hakanson & Nobel, 2000). Likewise, Schulz (2001) contends that knowledge transfer success depends on the “aggregate volume of know-how and information transferred per unit of time”. A second definition is from the project management literature, that defines a successful knowledge transfer as the one that is on time, on budget and creates a satisfied recipient (Szulanski, 1996). A third approach to knowledge transfer success definition is offered by Easterby-Smith et al. (2008) who find out the knowledge transfer success of the change in knowledge, level of innovativeness or performance of individuals in the recipient organizations. A fourth approach is conceptualized by Lord & Ranft (2000) in terms of usefulness of the knowledge transferred, or the level to which the knowledge transferred is relevant and salient to organizational success. Some other approach was suggested by Perez-Nordtvedt et al. (2008) who sees knowledge transfer success in terms of both the effectiveness and efficiency of knowledge transfer.

This work adopts the definition of knowledge transfer success provided by Perez-Nordtvedt et al. (2008). It advocates that the effectiveness of knowledge transfer is the degree of comprehensiveness and usefulness of knowledge that was transferred from the vendor by the client. That is, the point to which the transfer of new knowledge satisfied the client and was relevant, useful enough and has a positive outcome for the staff in the IS division. The efficiency of knowledge transfer is the degree to which the transfer of knowledge was done in a timely fashion and with the least amount of resources possible. That is, the rate by which the client acquires the new knowledge from the vendor with the minimal amount of resources.

2.6. The Gaps in the Literature

This review of relevant research on IS outsourcing and inter-organizational knowledge transfer identifies some important gaps in the literature.

The first gap in the reviewed literature is limited number of study related to the factors that influence knowledge transfer success in a more complete way. Although there has been multiple of research which has investigated inter-organizational knowledge transfer in different contexts (as briefly shown in Table 2.3), there is an insufficient research, offering a complete and detailed investigation and analysis of the central factors that enable or hinder knowledge transfer success. Earlier research has attentive to the type of knowledge transferred, the source of knowledge, the recipient of knowledge or the relationship between the two. The few exceptions Gupta and Govindarajan, (2000) and Szulanski (1996) have only examined Intra-organization (within an organization) knowledge transfer. Moreover, there are comparatively few works which have considered at the impact of cultural distance on knowledge transfer (Wijk et al., 2008). This may be, according to Easterby-Smith et al. (2008) because “cultural aspects are rarely visible within the quantitative methods that have dominated in published studies”, prompting future researchers to investigate the cultural issues using qualitative methods and case studies. (Al-Salti, 2011) has examined the factors in the context of inter-organizational knowledge transfer in Omani’s public sectors, recommended future researchers to test in different organizations and national environments. Thus, the current understanding of what contributes to successful inter-organizational knowledge transfer is still quite limited.

Secondly, this review of the literature shows that even if range of studies have examined inter-organizational knowledge transfer, little is identified about how knowledge is transferred from vendors to clients in the areas of IS outsourcing. This shortage of research in knowledge transfer is a severe gap in the IS outsourcing field since the IS markets seem to provide client organizations with access to more abundant and unique knowledge and skills that may not be available or are hard to develop in-house.

Furthermore, while there is excess of research on IS outsourcing, only a few focused on the public sector. Swar et al. (2012) state that, “to date, empirical studies and reference books for practitioners on IS/IT outsourcing in the public sector are rarely found”. Similarly, Moon, Jung, Chung, and Choe (2007) affirm that there is a dearth of research that investigates IS outsourcing issues in the context of the public sector. In addition, despite the rising of literature in the knowledge transfer field, the research that has investigated knowledge transfer and learning in the public sector is comparatively limited.

Another important gap which has been identified is that despite the growing number of studies relating to IS outsourcing, there is limited research conducted with regard to developing countries. To date, few studies have explored this issue within the context of the sub-Saharan and MENA region.

Thus, this study is a response to the above deficiencies. The study, therefore, represents an attempt to provide a general survey and exploration of how knowledge is transferred successfully from vendors in the context of IS outsourcing in the public sector (Ethio telecom) of a developing country (Ethiopia).

2.7. Chapter Summary

The purpose of this chapter was to establish a theoretical basis for the empirical research done a recap of existing related literature. The chapter was divided into three main parts. The first part discussed about the development of the IS outsourcing phenomenon, addressed the central motivations for IS outsourcing and explained how outsourcing relationships provide a valuable knowledge transfer platform and learning opportunities for client organizations. The second part dealt with definitions of knowledge and knowledge transfer, highlighted the importance of inter-organizational knowledge transfer and the last part looked at the issue of knowledge transfer in the areas of IS outsourcing. While Performing this, the gaps in the literature were identified. It was revealed that there is a lack of complete examination and analysis of the factors that impact knowledge transfer success in the areas of IS outsourcing.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Overview

The previous chapter critically reviewed the relevant literature. By doing so, it provided a background information for the survey.

This chapter aims to provide an overview of the research approaches used within the information systems discipline, that leads to the selection of proper research methodology for directing the justification of the conceptual framework, and thus answering the research question. Eldabi, Irani, Paul, and Love (2002) highlights that “bearing any type of inquiry should be governed by a well-defined research methodology based on scientific principles”. In the following section, the drives for the selection of the research, type of research approach, data collection methods and data analysis techniques are described and justified. Moreover, arguments for the validity and reliability of the work is given.

3.2. Research Method and Case Approach

IS researches adopt quantitative or qualitative or both research approaches.

This research adopts the qualitative research method the reason is discussed and explained below:

As previously noted in Chapter two, little research has studied knowledge transfer in the IS outsourcing context, and qualitative research is viewed to be the most appropriate option for such investigation. Corbin and Strauss (2008) highlight that qualitative research methods can be used to better understand any phenomenon about which little is yet known, as well as to acquire new perceptions on issues about which much is already known, or in order to acquire more in-depth information that may be problematic to deliver quantitatively.

The basic premise of this research is to acquire a better understanding of how knowledge is transferred from vendors to Ethio telecom in IS outsourcing projects. Qualitative research can be mainly useful in the investigation of the processes of knowledge transfer and explore the key factors that facilitate or inhibit knowledge transfer success.

The purpose of this research is to emphasize on the factors that influence knowledge transfer success, so qualitative research method is more suitable than a quantitative research method, as the former is intended to help researchers understand people's thoughts and the social and cultural

contexts within real life (Corbin & Strauss, 2008). Recording actual words and languages of the participants is a dependable way of collecting data, and as this study is interrelated to human attitude and behavior towards knowledge transfer, this gives the participants a chance to express their feelings more freely and openly.

Moreover, a qualitative method permits us to understand the social and cultural contexts within which the participants work and approach them from different job positions, in order to compare, contrast and understand their views (Myers, 2009). Objective truth is not the concern of the researcher, but rather with the truth as the participants perceive it. As Kaplan and Maxwell (1994) identified, the objective of understanding a phenomenon from the point of view of the participants, and its particular social and organizational context, is largely lost when trying to quantify data. Therefore, a qualitative method offers a more comprehensive picture than quantitative approach.

There are many qualitative research strategies that could be employed in IS research. The selection of a specific strategy primarily relies on the aim and the objectives of the study (Creswell, 2013). This study follows the view of Walsham (1993) that the most suitable research strategy for conducting IS empirical research in the interpretive practice is the in-depth case study. Pare (2004) clearly put that the case study is “particularly well-suited for IS research”.

The main reasons that this study selects the case study as a strategy is described below:

As there has been limited prior research that has examined knowledge transfer from the point of IS outsourcing in public sector in general and in the telecom sector in particular, this study is exploratory in nature and exploratory case study strategy is believed to be suitable in order to find out what is happening and to look for new perceptions. As Benbasat, Goldstein, and Mead (1987) state, a case study is suitable means to research an area in which few prior studies have been conducted. Eisenhardt (1989) also highlights that case study strategy is suitable when studying exploratory research on multifaceted social phenomena in real-life settings.

This research tries to offer an understanding of the main factors that impact on the knowledge transfer success from vendors to Ethio telecom in IS outsourcing. It has been argued that the case study strategy is useful when an in-depth investigation is needed (Yin, 2009).

Research on inter-organizational knowledge transfer has been dominated by quantitative studies using survey questionnaires (Salmi & Torkkeli, 2009). Easton (2010) suggests that case study

research is “the prevalent research method in B2B research”. Furthermore, a questionnaire-based approach cannot fully capture the completeness and social complication of the inter-organizational knowledge transfer process (Perez-Nordtvedt et al., 2008). Hence, more comprehensive case analysis using dense explanation is required for this research in order to better understand the complexity of the phenomenon, guiding to a more convincing and robust description (Eisenhardt K. M., 1989). Thus, the researcher argues that only the case study strategy could capture the dynamic and the complexity of the knowledge transfer from vendors to Ethio telecom in IS outsourcing.

The case study research can be designed as either single or multiple cases (Yin, 2009). This research employed single case industry, Ethio telecom, which is highly involved in IS outsourcing and it is a good exemplary as an IT industry, since it is the sole telecom service provider in the country. A single case is often selected because the case under study is both an exemplary case containing extreme and/or unique circumstances, and a revelatory case, being one of the first examinations of the phenomenon for scientific purposes (Yin, 2009).

3.3. Research Design

Research design is a consistent and a sound process undertaken by a researcher to collect, analyze and interpret data (Yin, 2009). The plan and the structure of the examination that the researcher undertake, to collect and analyze the research data is described below. Which are the unit of analysis, data collection methods and data analysis.

3.3.1. Unit of Analysis

The unit of analysis is the level at which the research is studied and which objects are researched (Blumberg, Cooper, & Schindler, 2011). Stating the unit of analysis is critically significant for case study research. Dube and Pare (2003) stress that a clear description of the unit of analysis “is critical if we want to understand how the case study relates to a broader body of knowledge”. The objective of this research is to study how Ethio telecom IS Division transfer and learn technical and business knowledge from vendors during IS outsourcing, the main unit is the Division as a whole and the smallest unit is the individual staff.

3.3.2. Methods of Data Collection

In this study, multiple methods of data collection are used. Semi-structured interview is the main source of data, with observation data and documentation data, helping as vital additional sources for understanding the phenomenon. The application of different data collection methods can improve the robustness of the research results through the cross-validation of data gathered using different methods (Remus & Wiener, 2009). Myers (2009) also highlights that triangulation of data from different sources increases the quality of data, and accordingly the accuracy of the findings.

3.4.2.1 Semi-structured Interview

In this study, semi-structured interview is adopted for data collection for two interrelated reasons.

As this study is interpretive, semi-structured interviews allowed to access the understandings and positions of the participants with respect to the activities and events that are happening or have already passed in relation to knowledge transfer during IS outsourcing projects. Myers (2009) identified, semi-structured interviews are valuable for “finding out people’s motivations, and their rationale as to why they did certain things”. In a similar vein Gray (2009) highlights that a semi-structured interview is essential when an interpretive approach is being employed, “where the objective is to explore subjective meanings that respondents ascribe to concepts or events”. In this study, the participants are probed to share their own stories, communicate their understanding in their own words and provide their own perspectives. Collis and Hussey (2009) suggest that the strength of semi-structured interviews lies in the process of open discovery of data as issues discussed, questions raised and matters explored and new topics that emerge vary at each interview.

Semi-structured interviews allow the researcher to probe intensely to explore answers in more depth, to discover new evidences Easterby-Smith et al. (2008) and “to add important insights as they arise during the conversation” (Myers, 2009). Besides, as Eriksson and Kovalainen (2008) highlight, semi-structured interviews are suitable for answering what and how open-ended questions, that are common in the interview guide.

Thus, semi-structured interviews are conducted with representatives from three different functional hierarchies (Senior IS managers, Middle IS managers/Heads of sections and IS staff) within the IS divisions of Ethio telecom. This method provided the chance to gather “rich data

from people in various roles and situations” (Myers, 2009). This is consistent with the recommendation of Eisenhardt and Graebner (2007) who argue that a key approach to limiting the interviewee’s bias is to use various knowledgeable informants from different hierarchical levels who “view the focal phenomenon from different perspectives”. The interview guide for the three types of participants follow a similar sequential structure, but is adapted to the roles that each level of individuals typically played in the IS outsourcing project.

The purposive sampling technique is followed, which is highly recommended for qualitative case study research (Neuman, 2003), in order to identify key participants within the IS division. The purposive sample in this study consists of program managers, project managers and coordinators, because they are directly involved in Ethio telecom IS outsourcing projects, that enable them to have a detailed understanding of the phenomena under study. Sarantakos (2005) suggests, in purposive sampling “the researcher purposely choose subjects who, in their opinion, are relevant to the project”.

Interviews are first conducted with IS staff directly involved in the IS outsourcing projects. In these interviews, a detailed description of the various IS outsourcing projects is sought and the facilitating and inhibiting factors for knowledge transfer are investigated based on the participants’ own experiences and viewpoints. Then, interview is conducted with a broader range of middle IS managers who are managing the day-to-day IS operations as well as heads of sections. Finally, the researcher attempts to understand the views of the executives of IS managers on the policies, strategies and decisions about IS outsourcing in general, and the knowledge transfer process in particular.

Interviews are conducted in the interviewee’s office, which facilitated the consultation of relevant documents if the interviewee needed to check details or share related materials.

Prior to the interviews, participants are notified of the objectives of the study. All interviews were conducted in Amharic and transcribed into English. The researcher used the laddering technique in order to trigger participants to reveal extra information and clarification as necessary around the phenomenon under study. Laddering allowed participants to explain their thoughts and horizons in more detail and to expatiate on what they had experienced (Easterby-Smith et al., 2008). This is gained by watching up each question with why and how questions which encourage participants to provide further in-depth explanation and provide rich stories from their own workplace

experience and their interactions with individuals of the vendor organizations. The interviews varied in length from 40 minutes to 1 hour. The participants did not wish to be recorded on tape and didn't want to disclose their name and job roles. During the interview, notes are taken so that a complete and accurate record of the conversation can be obtained. As Patton (2002) suggests, no matter what the form of interviewing type used, and no matter how interview questions are worded, all is wasted unless the word of the interviewee are taken accurately.

Respondents Category	Number of Respondents
Executives/Senior ISD managers	2
Middle ISD managers/Head of Sections	5
ISD staff	6
Total	13

Table 3.1: Distribution of interviewees across their hierarchy

3.4.2.2 Observation

In this study, a participant observation technique is adopted as the researcher is an insider, observed various knowledge transfer events, complex interactions and actions between individuals from the Ethio telecom and the vendors on site, while working side-by-side on the IS projects. In participant observation, the researcher is entirely involved and becomes a participant in the culture or the context being observed (Collis & Hussey, 2009). Detailed notes are taken in which the participants' guidelines, conversations, tool usage, and use of documents and other work artifacts are all noted. The collected data through observation is used as additional to complement data obtained through semi-structured interviews.

3.4.2.3 Document Analysis

Collecting documents have been viewed as an important means of data collection in qualitative studies (Creswell, 2013), and it plays a crucial role in case study research (Blumberg, Cooper, & Schindler, 2011). Case study, researchers often complement interviewing and observation with the collection and analyzing of related documents produced in the course of the day to day activities (Gibson & Brown, 2009). As Myers (2009) points out, "for case studies, the most important use of documents is to corroborate and augment evidence from other sources". Marshall and Rossman (2011) note that minutes of meetings, logs, announcements, formal policy statements, and letters and so on are useful in understanding the phenomenon under investigation.

In this study, different kinds of recorded data are collected to provide information about how knowledge is transferred from vendors to Ethio telecom. Available, documents of IS outsourcing contracts and service level agreements are collected. Reports, meeting minutes, email conversations between clients and vendors, organization charts are also acquired. Besides, selected materials from training and workshop sessions, delivered by the vendors to the clients, are collected. The documents are generally used to verify the participants' factual statements obtained in semi-structured interviews. The document analysis enabled the researcher to double-check regarding particular issues and dates that participants had difficulty remembering during the interviews.

3.3.3. Data Analysis

Miles and Huberman (1994) advocate that qualitative analysis is not a sequential process, but rather an interactive that includes three coexisting activities: data reduction, data display and conclusions verification.

Researchers give several analytical methods towards qualitative data such as content analysis, grounded theory, narrative analysis, conversional analysis, discourse analysis, hermeneutics and semiotics (Gray, 2009).

In this study, the qualitative content analysis technique is adopted in order to understand the characteristics of the phenomenon understudy and deduce the meanings and significance of the views and behaviors of the participants. A qualitative content analysis technique is more appropriate for this study as it preserves as much as possible the meaning of the qualitative data. Moreover, it enabled the explanation of all interviews, documents and notes of observation and relating each one to the whole in order to gain a holistic picture of the phenomenon. Darke, Shanks, and Broadbent (1998) note, "the strength of analysis in case studies derives from the strength of the exploration of the phenomenon based on the interpretation of the data".

3.4. Reliability and Validity

Dube and Pare (2003) highlight that a value IS research "has to surpass the tests of scientific rigor". Myers (2009) specifically points out standards for judging the quality of research in terms of validity and reliability.

In this work, the following strategies are adopted in order to increase the study's validity and reliability and to decrease possible biases:

- Multiple methods (semi-structured interviews, observation and document analysis) for collecting the data of this research are used, which permit the researcher to achieve triangulation. In the semi-structured interviews, data from three hierarchical levels within the IS Divisions of Ethio telecom is also picked up in order to advance a different course of inquiry and provide multiple measures of the phenomenon under study, and therefore the findings and determinations of this survey are likely to be more precise and convincing. This usage of multiple sources should increase the robustness of the results (Eriksson & Kovalainen, 2008).
- The initial drafts of each of the case study reports are emailed to some participants of Ethio telecom in order to verify them for accuracy and to review them for comments, amendment, and further feedback and clarification where necessary. Myers (2009) highlights, the reevaluation of the rough drawing of the case study report “produces further evidence, as sources and participants may remember new materials that they had blanked out during the initial data collection point”.
- Using key, precise quotations expressed by some research participants in supporting the arguments in each case report. Lee and Lings (2008) argue that some striking raw data collected from the fieldwork need to be included in the research write-ups in order to “allow the reader to get a better picture of the respondents' own concepts and categories, without relying solely on the interpretation of the researcher”.

3.5. Chapter Summary

This chapter has shown the methodological approaches that have been employed within the IS, and then selected proper ones for leading and delivering this research. Main stress is placed on selecting approaches that are efficient at capturing and preserving the depth and richness of the information throughout the inquiry procedure.

An outline of qualitative research approach and a justification that a qualitative approach would be more desirable than a quantitative one are provided. The qualitative approach facilitated the researcher to associate more closely with the participants, and to identify issues of substance and interpretation that they give to their organizational activity. It is decided that single case study plan

is the most appropriate strategy for this inquiry. The data collection methods that were employed included semi-structured interviews, observation and document analysis. This allowed the researcher to properly get the thoughts, experiences, ideas, opinions and knowledge of the participants. The qualitative content analysis is judged to be the appropriate technique for studying the data. The issues related to methodological validity and reliability are described at the end of this chapter.

CHAPTER FOUR: CASE STUDY: ANALYSIS, FINDINGS AND DISCUSSION

4.1. Overview

The preceding chapter discussed and justified the research methodology adopted for this study. The intention of this chapter is to present the findings from the analysis of the case study. Based on the case descriptions, strategy suggested by (Yin, 2009), the researcher analyzes here the stories of knowledge transfer in information systems (IS) outsourcing discovered from Ethio telecom. As noted in the previous chapter, the research examination was approached by adopting an interpretive single case study and, consequently, the researcher attempted to understand this phenomenon in terms of the meanings the participants bring to them based on their actual experiences in various IS outsourcing projects.

As indicated in chapter three, it has been decided to present the analysis of the case in a way that covers as much as possible the identities of the individuals. Therefore, the individuals' names and their job title are kept anonymous and pseudonyms are used instead.

Hierarchical Level	Pseudonyms	Number of Participants
Senior IS Managers	<ul style="list-style-type: none"> ▪ Officer1 ▪ Officer2 	2
Middle IS Managers	<ul style="list-style-type: none"> ▪ Manager1 ▪ Manager2 ▪ Manager3 ▪ Manager4 ▪ Manager5 	5
IS Staff	<ul style="list-style-type: none"> ▪ Staff1 ▪ Staff2 ▪ Staff3 ▪ Staff4 ▪ Staff5 ▪ Staff6 	6
Total		13

Table 4.1: Interviewees

4.2. Case Study Analysis

The following section provides detailed analysis and descriptions of the case. The descriptions are developed mainly from the examination of the data obtained from semi-structured interviews, observations and document analysis.

The case analysis follows, the research questions and specific objectives of the study, by giving a brief outline on IS outsourcing (the motivation for IS outsourcing and the major IS Projects Outsourced), as outlined in Table 4.1.

1	IS Outsourcing <ul style="list-style-type: none">• Motivation for IS outsourcing• IS Projects Outsourced
2	Knowledge Transfer Processes (Research Q1) <ul style="list-style-type: none">• Structured/formal• Unstructured/informal
3	Factors Impacting Knowledge Transfer (Research Q2) <ul style="list-style-type: none">• Knowledge Factors• Client Factors• Vendors Factors• Relationship Factors

Table 4.2: Case analysis format

4.3. IS Outsourcing

According to the research participants' feedback, Ethio telecom's IS division had decided to outsource several of its IS development and customization for multiple objectives. The major reasons are, the staff lacked certain technical knowledge and specialized skills in house, and few IS staff had the adequate technical experience and competency to handle sophisticated IS projects that the organization had been undertaken. Consequently, outsourcing relationships were found to be the ideal platforms to engage in learning and knowledge transfer activities. Outsourcing enabled Ethio telecom's IS staff to gain access to different knowledge and industry best practices and learn technical skills which were absent internally. Another driver for outsourcing was gaining access to new technologies which were not available in house, enhancing the organization's capability to offer new products and services.

According to IS division Officer1: *“IS outsourcing has been increasing in our organization in the last few years due to the transformation and telecom expansion programs for the telecom services that we are offering. Vendor financing and outsourcing relationships provided us with opportunities to gain access to knowledge and technical expertise relating to system integration and implementation.”*

Manager5 explained the reason for outsourcing:

“It is very critical to work with external service providers since it is not an efficient way to plan on doing everything by Ethio telecom. Different providers have their own specialties which we can be confident on and Ethio Telecom also have its own focus to deal with. Besides of this, utilizing others expertise, that are not available in house is mandatory to achieve company goals.”

In line with this, Staff1, explained the reason for outsourcing as, *“Lack of IS skills, the business itself (Telco is complex and the solutions are international standard) and Ethio telecom lacked adequate technical knowledge and expertise to develop and maintain such business applications like CRM (customer relationship management), CBS (converged billing system), and VAS (value added services).”*

Officer2 also added to the reasons for outsourcing and said:

“We are short of critical technical knowledge and development skills, a good example is the financial system that we tried to develop internally by using our internal experts, and finally we failed, due to this the top management decided to outsource and acquire the IS/Business knowledge and skills. ERP system development and integration, outsourcing is not only due to the lack of technical skill, it also included the lack of business knowledge which was supported by the Orange/France Telecom during the two and half year management contract. In my opinion ERP implementation might not be successful if we were not getting the support from them; and the success of CRM and CBS systems we deployed were also their professional experiences input from the industry.”

Table 4.3 presents comprehensively the reason for IS outsourcing.

Respondents Category	Evidences Extracted from the interview transcripts illustrating knowledge transfer as a key advantage of IS outsourcing
Executives /Officers	<p><i>".. get access to crucial knowledge possessed by skilled and qualified experts within vendor organization during the IS outsourcing projects". [Officer1]</i></p> <p><i>"Outsourcing relationships enabled us to acquire new technical and business knowledge from vendors". [Officer2]</i></p>
Section Heads	<p><i>"It is a must to consider IS outsourcing as an opportunity to learn and acquire new technical and business knowledge for the first time as we are using standard off the shelf products from the vendors." [Manager4]</i></p> <p><i>"... it is an alternative way for managing the services and it is important for adopting new technology". [Manager3]</i></p> <p><i>"It is a very good means actually, since providers come with new solutions with new technology. Also, learning is enhanced when there is a chance to work on a deployed new technology rather than only reading about it on the net". [Manager5]</i></p>
Staff	<p><i>"Since the solutions are new, it played a great role in acquiring new technical and business knowledge. For me, outsourcing is a learning environment and an opportunity for skills development". [Staff1]</i></p> <p><i>"Identifying and transferring critical or innovative knowledge held by the outsourcing vendors, that currently unavailable within our organization". [Staff6]</i></p> <p><i>"Our frequent interactions and side-by-side work with technical teams of the vendors provided an ideal platform for learning and knowledge transfer". [Staff4]</i></p> <p><i>"it gives new approach and methodologies to learn and I found it as an opportunity in exposing myself to new technologies and business knowledge". [Staff3]</i></p>

Table 4.3: Knowledge transfer as a key advantage of IS outsourcing

From the above report, it was found that Ethio telecom turned to IS outsourcing for reasons other than just cost saving. One of the key advantages for IS outsourcing reported by the participants was knowledge transfer and learning. Ethio telecom lacked the necessary knowledge and expertise to handle the growing IS investments, to manage increasingly more complex IS projects and to

implement and maintain enterprise wide systems. This is consistent with the findings of previous researchers such as, (Yetnayet, 2016; Daniel, 2010; Muluneh, 2009 and Meresea, 2007) who argue that the reasons for IS outsourcing is lack of critical internal or in-house expertise. Therefore, IS outsourcing has become a viable option in seeking crucial business and technical knowledge which is unavailable or difficult to develop in house. There was a substantial agreement among the participants, that IS outsourcing provided them with a promising facilitator and fruitful atmosphere in gaining access to critical knowledge and skills of the vendors as illustrated in Table 4.3 above.

According to the information from interviewed executives of Ethio telecom's IS division (Officer1 and Officer2), Ethio's leading IS outsourcing projects were OSS (Operation Support System) and BSS (Business Support System) which allows Ethio telecom responding effectively to market requirements and optimizing operational efficiency of various end-to-end telecommunication services. To meet these objectives and deliver the quality of services, it outsourced IS developments and integrations to various international vendors (offshore), such as Huawei, ZTE and Wipro. Ethio telecom's IS division team worked closely side by side with the vendors' technical team during the whole system development life cycle. They also commented, this close relationship with the vendor enabled Ethio telecom's IS team to obtain access to state-of-the-art technology and up-to-date knowledge and expertise which were difficult to develop in house.

4.4. Knowledge Transfer Processes

From the interpretation of the collected data, the knowledge transfer process can be divided into two groups, namely structured and unstructured knowledge transfer as shown below in Figure 4.1.

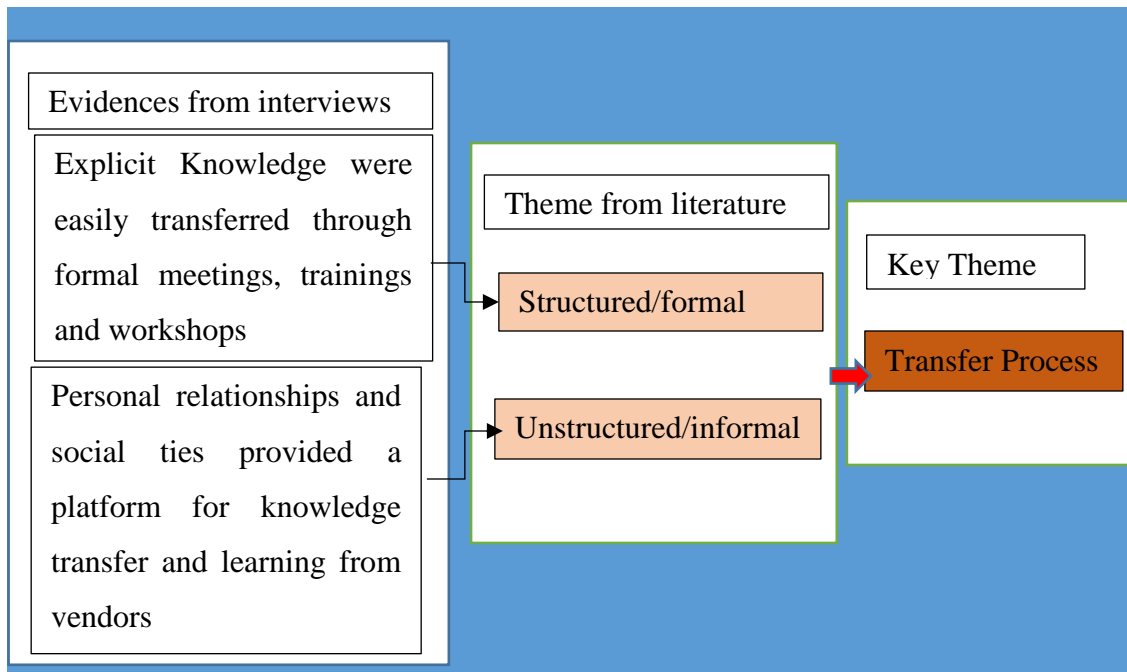


Figure 4.1: Knowledge Transfer Process

When asked the question about how different knowledge transfer processes enhances the effectiveness of knowledge transfer, a large number of the participants indicated that formal training sessions and workshops outside the work environment were likely to be effective for transferring codified and less-complex knowledge. However, knowledge of a tacit nature was difficult to transfer using such formal channels because this was mostly intuitive and embedded in a specific context. The people, whom interviewed, repeatedly indicated that knowledge transfer was a socially embedded process and required connections, face-to-face interactions and open communication. Moreover, they perceived social ties and friendly relationships as platforms for transferring critical tacit knowledge. The IS division Officer² commented:

“Formal trainings about the implemented solution are prepared and delivered. Also Ethio teams will participate during the implementation phase to help them understand what is there on the ground. Additionally, on the job trainings are delivered for operation team on how to run and maintain, which involves solving a problem and providing reports on what caused the problem/incident, how it is solved, and when possible, how to prevent such problems/incidents permanently.”

Officer1 in his part added: *“Informal relationships between employees and vendors to facilitate the transfer of knowledge. It creates friendship/camaraderie among employees and this in turn creates trust among them.”*

Manager2 replied when asked the processes associated with the technical and business knowledge transfer from vendors:

“In earlier time there seems a lack of practice to document technical knowledge in the organization and also, external support providers (vendors) do not seem to transfer knowledge to our staff. The reason may be, to do business by creating vendor dependency. Now we have started to document the vendors’ documents such as training manuals, incident resolution steps, problem workarounds, product documentation, configuration documentation and business rule. We are also practicing and using quality circle and crises management platforms as a process of knowledge transfer, especially for the tacit and complex knowledge.”

Staff6 also reflected on the process employed during knowledge transfer:

“For the written form the vendors are providing the necessary documentations in Hardcopy and Softcopy, but the verbal one requires extensive interaction to be acquired and learned, started documenting as a work around to transfer to other teams and especially for junior staff as a written form and present for the team on quality circle meetings.”

Several members of IS Managers emphasized the importance of quality circle meetings that, they are using as a main tool for sharing tacit and complex technical knowledge with the staff quickly and easily. The team can call the vendors’ experts when they needed advice about a particular technical problem. For example, Manager4 highlighted the benefits of quality circle and crisis management meetings and their impact on transferring knowledge and learning. He commented:

“It has been important to see each other regularly on a weekly basis and to review technical issues where we can discuss the challenges. This platform enabled us to share ideas and create new knowledge and insights.”

The researcher observed the documentation and categorization of the codified knowledge and they are categorized and documented in hardcopies and the scanned copies are also uploaded to the intranet. The researcher also participated on quality circle and crisis management meetings and

observed how the team transfer from one individual to the other; from one circle to the other circle at the same time within the division.

In addition to the quality circle and crisis management meetings, most of the Ethio telecom's participants highlighted frequently, was informal settings such as social ties and networking with individuals of the vendors. Many participants reported that knowledge transfer was facilitated by numerous face-to-face interactions and the establishment of close relationships with vendors. This was particularly true when the knowledge sought included a high degree of tacit elements. All the IS staff whom were interviewed, agreed that they were able to acquire knowledge more effectively by establishing social ties with individuals on the vendor's side. For example, Staff5 reported:

“...it is useful when you know the individual in person and be able to meet with him outside work at less stressful environment. I gained a great deal of knowledge that were not on training and workshops while discussing on our project at a coffee time by approaching as a friend with one of the CRM engineers of the vendor”.

Manager5 also explained the importance of the informal relation as:

“... Social relations have a good impact for knowledge transfer regardless of the needed processes and procedures to be followed”.

In this regards, Officer2 also commented:

“Despite the growth in communication technologies, email and instant messaging, continuous on-site visits and face-to-face interactions are still necessary. We build up good relationships with our vendors by organizing joint social activities outside work and having fun together. These informal opportunities to interact with some experts of the vendors helped us to develop respect and friendship, which definitely influences the behaviors of the vendors and therefore improve our learning and acquisition of new knowledge”.

The above quotes illustrate that during the outsourcing projects there were frequent informal, friendly relationships during and outside working hours between the Ethio telecom's IS staff and vendors' technical expertise which created an environment for knowledge transfer to occur.

It could be argued here that in IS outsourcing, formal and informal processes both play a key role in transferring technical and business knowledge from vendors to Ethio telecom. Nevertheless,

the empirical findings suggest that it is more likely that simple and codified knowledge be transferred by formal and structured transfer approaches, whilst tacit and complicated knowledge would be more likely to be transferred through personal, unstructured and informal knowledge transfer approaches.

4.5. Factors Impacting Knowledge Transfer Success

Despite the realized benefits of knowledge transfer and learning from outsourcing, Ethio telecom’s journey to effective knowledge transfer was not straightforward. The participants perceived several factors which impacted knowledge transfer success, as presented and discussed below.

4.5.1 Knowledge Factors

The exploration of the interviews shown that there were two main types of knowledge factors which affected knowledge transfer in the course of the IS outsourcing projects. These are knowledge tacitness and knowledge complexity as shown in Figure 4.2 and discussed below.

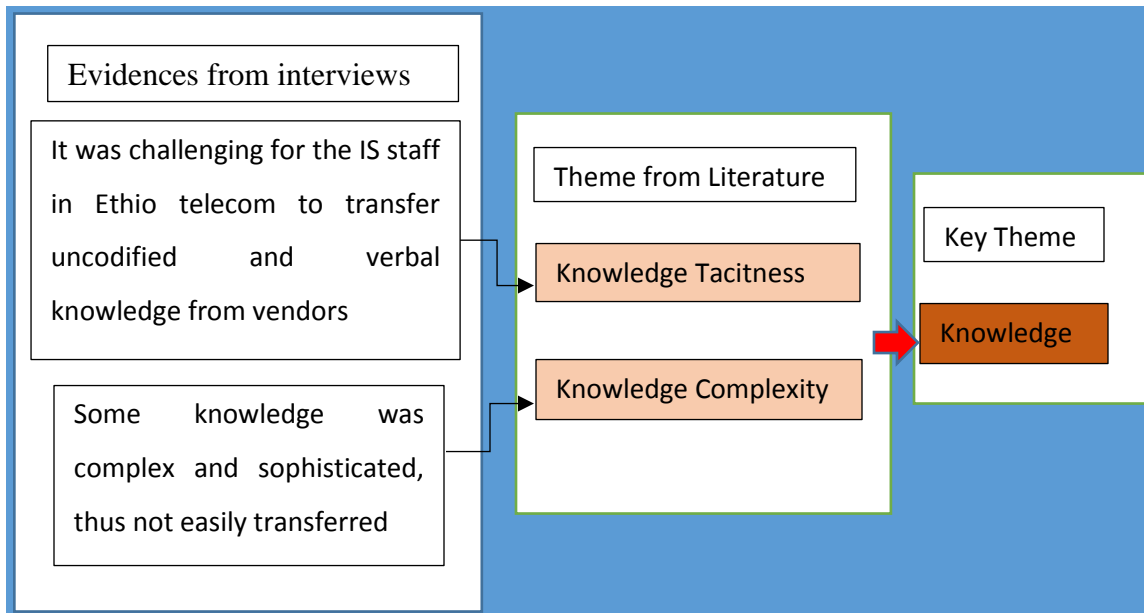


Figure 4.2: Knowledge-related factors impacting knowledge transfer success

The majority of the participants described that explicit knowledge was transferred easily in reports, documentations and codes. However, very crucial technical and business knowledge was mostly tacit and took time and efforts to be acquired from outsourcing vendors. According to IS division Officer1:

“The effectiveness of knowledge transfer highly depends on the type of the transferred knowledge. The non-codified knowledge is often hard to be transported and absorbed and requires time and resources to be acquired”.

Manager1 also explained how knowledge in verbal form impacted the transfer of knowledge. He said:

“... it depends on the type of the knowledge to be transferred. To capture and understand the verbal concepts, it may need more resources to adapt and apply to the complex systems.”

The IS division Staff1 also explained how knowledge tacitness had a significant negative impact on comprehension and the transfer of knowledge from vendors. He stated:

“Some technical knowledge is so complicated because they are often embedded in people and therefore hard for us to fully understand and acquire.”

Knowledge complexity was another inhibiting factor which most of the participants echoed during the interviews. It was revealed that knowledge complexity and sophistication restrained knowledge transfer. Ethio telecom’s IS division Officer2 commented:

“The characteristics of knowledge being transferred from vendors affect the ease and success of knowledge transfer. Some knowledge was really complex.”

Manager5 explained how knowledge complexity is difficult to capture and apply while running and maintaining the systems:

“It depends on the complexity of the system. It may take quite a lot to acquire knowledge/skill in some specific technical/business area, for example, it is really difficult to capture expertise knowledge specially for faults on infrastructure and database. The difficulty here is one type of fault may be caused by different situations like slow network, configuration change in any of the interconnected systems, hardware fault, operating system configuration issue, scheduled task failure, synchronization problem, redundancy failure like cluster etc. This means a simple case may need to troubleshoot all possible failure causes. Such kind of knowledge needs a sophisticated understanding of the system starting from the design of the deployed system and how the interconnection is made. So, it is very challenging because of the system volume and complexity.”

4.5.2 Client Factors

The analysis of the data revealed that the success of knowledge transfer was also affected by the client’s characteristics (in this case Ethio telecom’s IS division staff). Figure 4.3 illustrates that learning intent, absorptive capacity and motivation were the three key factors which impacted on successful knowledge transfer.

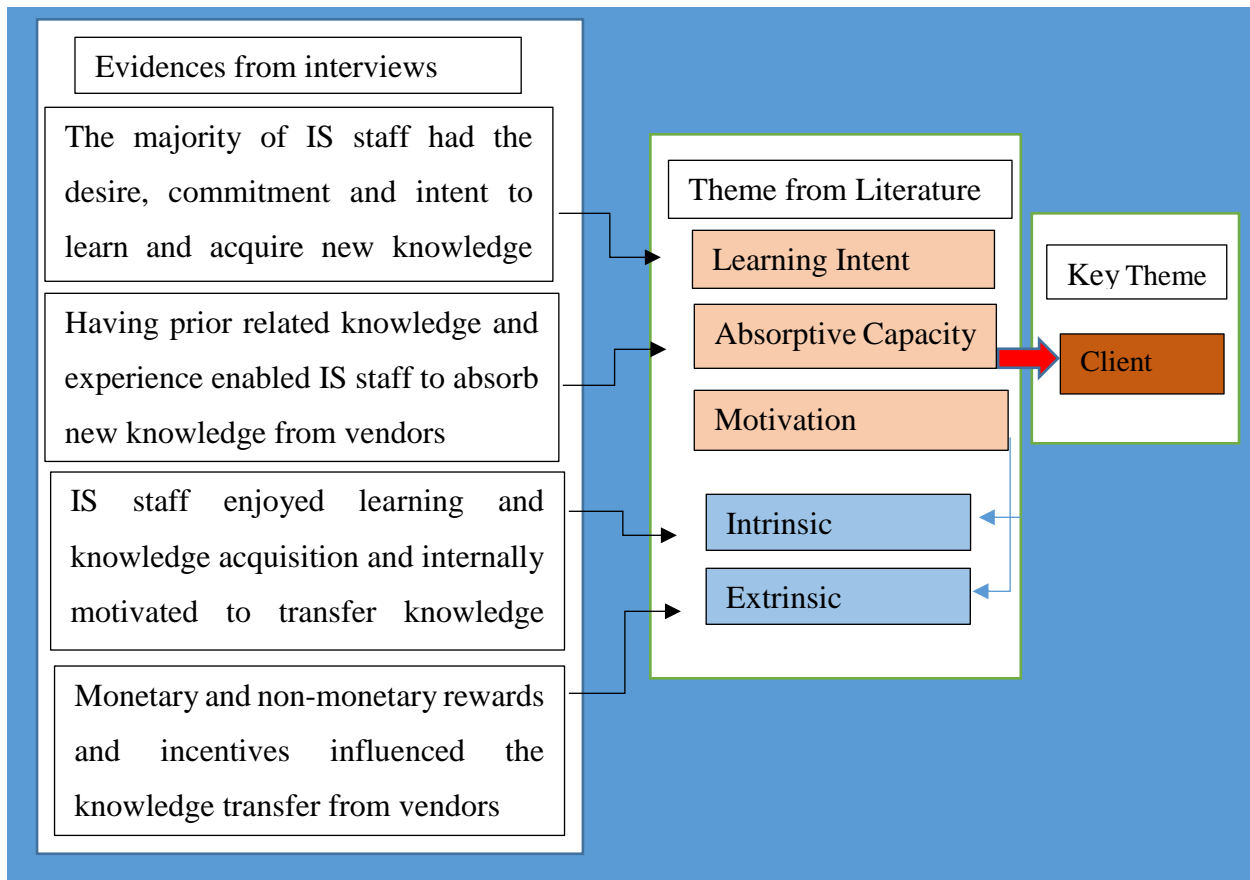


Figure 4.3: Client-related factors impacting knowledge transfer success

The learning intent of the individuals in Etio telecom’s IS division to acquire knowledge and learn from vendors was highlighted as one of the main facilitators for successful knowledge transfer. Officer2 emphasized the importance of entering into an outsourcing relationship with an intention to learn and search for new knowledge which was not available in house. He commented:

“Intend to learn is an important predictor of the level and quality of knowledge transfer. Indeed, the higher learning intent will lead to more gains in knowledge”

Manager4 stressed in his interview:

“It is a must to consider IS outsourcing as an opportunity to learn and acquire new technical and business knowledge for the first time as we are using standard off the shelf products from the vendors.”

Manager2 also mentioned:

“It is a good opportunity in exposing myself to new technologies and business knowledge, since providers come with new solutions and new technologies. Also, learning is enhanced when there is a chance to work on a deployed new technology rather than only reading about it on the net. It gave me new approaches and methodologies to learn and manage the services.”

The majority of the IS staff looked at outsourcing projects as opportunities for searching for knowledge which was difficult to develop in house.

They had a determination to acquire and learn a certain amount of knowledge and skills possessed by the vendors. Staff4 stated:

“I found it as an opportunity in exposing myself to new technologies and business knowledge. As the solutions are new, it played a great role in acquiring new technical and business knowledge. For me, outsourcing is a learning environment and an opportunity for skills development”

Absorptive capacity was one of the most important factors influencing successful knowledge transfer. The absorptive capacity of an individual has proven to be related centrally to the person’s previous knowledge and experience. Most of the participants acknowledged the importance by having prior related knowledge and accumulated skills in order to acquire new knowledge successfully. Past transfer experiences with similar types and applications of knowledge, which were similar to new knowledge confronted learning and enhanced further that person’s absorptive capacity. Staff1 noted:

“Prior experience and knowledge has a great advantage of the success of the knowledge transfer. My prior experience with the Business application system enabled me to be more comfortable to understand and transfer new implementation knowledge offered by our vendor. Since the vendors are using standard third party Operating Systems, databases and storages, and business flows (logic handling) that we are familiar with.”

Staff2 also supported this idea by stating:

“It impacts knowledge transfer to a great extent in that a person having absorptive capacity can cope up faster. My prior experience with the customer care and billing system enabled me to be more comfortable to understand and transfer new implementation knowledge offered by our customer relationship management vendor”

Manager3 also reflected similar idea:

“..... for me, most of the time if you have experience in one area, it will be simpler to learn and apply to new experiences. You can grasp and catch it up in less effort”.

Motivation was identified as an important factor which facilitated the transfer of knowledge from vendors. All the senior and middle IS managers agreed that motivation was essential and it was an enabling factor for transferring knowledge successfully. When asked about what kinds of motivation were needed to facilitate the transfer of knowledge from vendors, most of the middle managers reported that extrinsic motivation, especially through monetary compensation was vital and necessary for the knowledge transfer to be successful. Manager1 commented:

“Yes, I believe that motivating employee by giving external training by accommodating their cost is much less than its cost. It makes employees give more of whatever they have to give”.

Officer1 also stressed, on the other hand, the importance of intrinsic motivation. He also emphasized that the establishment of a motivating work environment was important during IS outsourcing projects. He commented:

“It is very important to make a person invest his maximum knowledge and effort based on positive will. It also implies to others that they can get such reward if they work hard to be a knowledgeable person. Competitive environment will be created since reward or appraisal is based on devotion.”

Manager5 argued how to use motivation to impact knowledge transfer to the positive aspect:

“for motivation / reward to affect the success of knowledge transfer, the employee should be rewarded, specifically all the trainings should be supported by certification and monetary like salary increment for it.”

The researcher asked the IS staff to elaborate on the impact of motivation on successful knowledge transfer during outsourcing projects. They all shared similar perceptions regarding the importance of receiving financial incentives and recognition of consistent learning and bringing new skills to

the organization. However, some of the IS staff were concerned that in their organization the financial incentives were so limited, and sometimes this limited their intention to spend extra time and effort to learn and acquire new knowledge.

Staff5 stated how the financial incentives were impacted knowledge transfer as:

“Motivation is very crucial and directly or indirectly impacts the success of knowledge transfer. The rewards are so limited, and sometimes this limited the intention to spend extra time and effort to learn and acquire new knowledge. For example, in our environment external training has pocket money (\$100/day) due to this, staff are highly motivated to be a part of such training. On the other hand, it is also demotivating them, this is because during selection the managers don’t select the right individual, it is given in the approach to distribute to all staff; which impacted the competition for knowledge transfer.”

The researcher also got this complain from the division’s 2017 first quarter and semiannual evaluative meeting minutes. The complaint criticized, *“there is no formal way and standard policies and procedures on how to select a candidate for training; due to this, the staff selected for the training not come up with the required knowledge and skill. This not only demotivate the staff, but also affected the knowledge transfer to the staff in the domain area.”*

It seemed clear that both extrinsic and intrinsic motivations were essential for Ethio telecom’s IS employees, since both types of motivation tended to increase enthusiasm; optimize a passion to transfer new knowledge and learn from vendors.

4.5.3 Vendors Factors

In interpreting the empirical data, it appeared that almost all the participants shared the same perceptions and views regarding the importance of working with vendors which were capable, credible and transparent. Therefore, the analysis revealed that vendor capability, credibility and openness were three key factors which impacted on successful knowledge transfer in Ethio telecom’s IS outsourcing as shown in Figure 4.4 below.

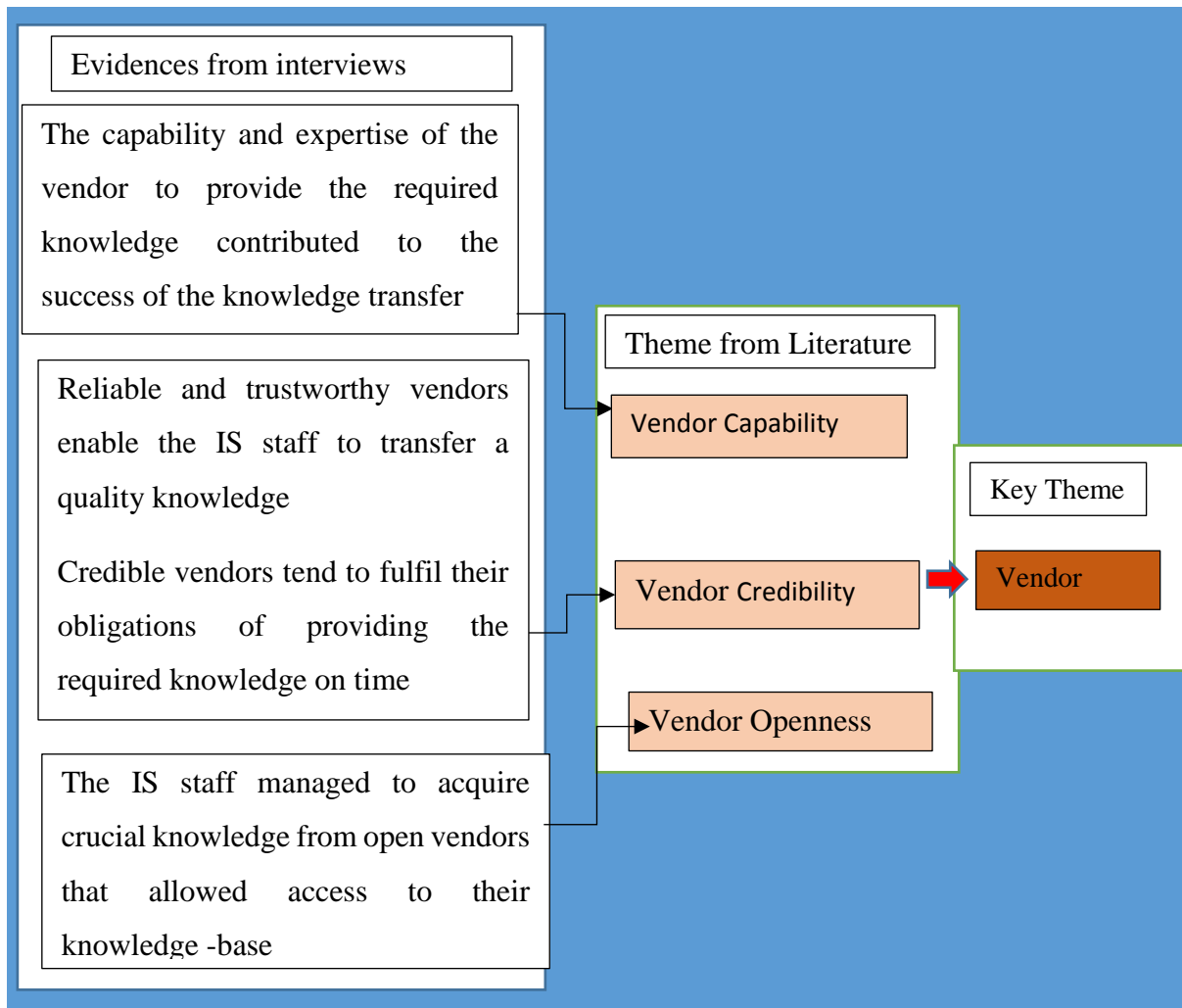


Figure 4.4: Vendor-related factors impacting knowledge transfer success

The participants underlined that vendor capability was crucial for effective knowledge transfer in IS outsourcing. They highlighted that a capable vendor which possessed significant operational capabilities, such as human resources, process management, and client relationship capabilities could generate value and transfer knowledge successfully. Officer1 explained the criteria for choosing an outsourcing vendor; he stated:

“... we are very selective when it comes to choosing an outsourcing vendor. We carefully look at the history of the company. We even requested the curriculum vitae of all members of the technical team.”

He further explained:

“In our experience, the best experts exist initially until the project is fully operational. After some time, the vendors have a culture of moving them to other projects and bring new ones. This affects knowledge transfer, since the support engineers don’t have the knowledge and skills to solve problems by themselves. Rather they request online with their research and development center or other experts and they reply to us just like a mediator.”

The interviewed middle managers all reflected similar views regarding the experience of the vendors. They agreed that, some of the vendors’ experts are very experienced and capable some of them are junior and novice.

Manager1 explained on the vendors’ capability:

“... not consistent. Some vendor employees have the necessary expertise, while others are novice (they come here for on-the-job practice and training)”

Staff5 also supported this idea and noted:

“They are capable and expertise to the solution they are providing and there are also juniors that are working under this expertise.”

Vendor credibility was stressed by the participants as a key element for successful knowledge transfer. The perceived trustworthiness of vendors was found to impact the possibility of Ethio telecom’s IS employees accepting knowledge. Officer2 expressed:

“.... once we perceive the vendor as credible and trustworthy, we would be less suspicious about the quality of the knowledge and we would be more likely to be receptive to the knowledge”.

All participants viewed trust as the foundation for successful knowledge transfer. Manager4 asserted that:

“Knowledge transfer is likely to be more successful when the vendor is credible and trustworthy. In my opinion, vendor trustworthiness tends to foster our ability to get access to valuable knowledge”.

Manager3 further explained:

“As far as I am concerned, those vendors who are working with us are credible and trustworthy. Since there is a strategic partnership between Ethio and the vendors, and there is a formal

agreement (SLAs), at the same time they don't want to lose such business, so the vendors have no option than to be trusted."

The findings indicate that the presence of trust results in a mutual benefit with regard to knowledge and this makes knowledge transfer not only possible but more effective

On the contrary, some of the participants perceived, in some cases, vendors act in an opportunistic manner by not allocating the resources required to support knowledge transfer.

Manager5 explained:

"As far as there is an SLA, they are trustworthy. But at times when no SLA, I hesitate that they try to hide and not share the knowledge, it seems that we need them and to enforce the contract sooner."

For many individuals in Ethio telecom's IS division, the role of vendors' openness was critical for successful knowledge transfer. Most of the participants reported that the success of knowledge transfer was highly dependent on the willingness of the vendors to share their crucial knowledge.

Officer1 commented:

"Knowing that a specific individual within the vendor has valuable expertise is significant, but their knowledge is certainly only helpful if they are accessible. Some individuals fear of losing ownership and privilege of technical knowledge."

Staff1 expressed his view and perception about his experience with the vendor which had developed the CRM system:

".....they have also shown us a significant commitment and tremendous willingness to share their expertise and knowledge. I worked with two oracle experts and they were very transparent and I did not feel that they wanted to protect any crucial knowledge or hide it from me. But there are cases when they try to hide some technical knowledge and they tried to justify, it is a 'proprietary product'."

4.5.4 Relationship Factors

The interpretation of the data collected from semi-structured interviews and Ethio telecom's IS division documents indicated that the effectiveness and the efficiency of knowledge transfer were highly dependent on certain factors concerning the relationship between Ethio and its outsourcing

vendors. These factors include relationship quality, relationship governance, relationship duration and organizational distance as shown in Figure 4.5.

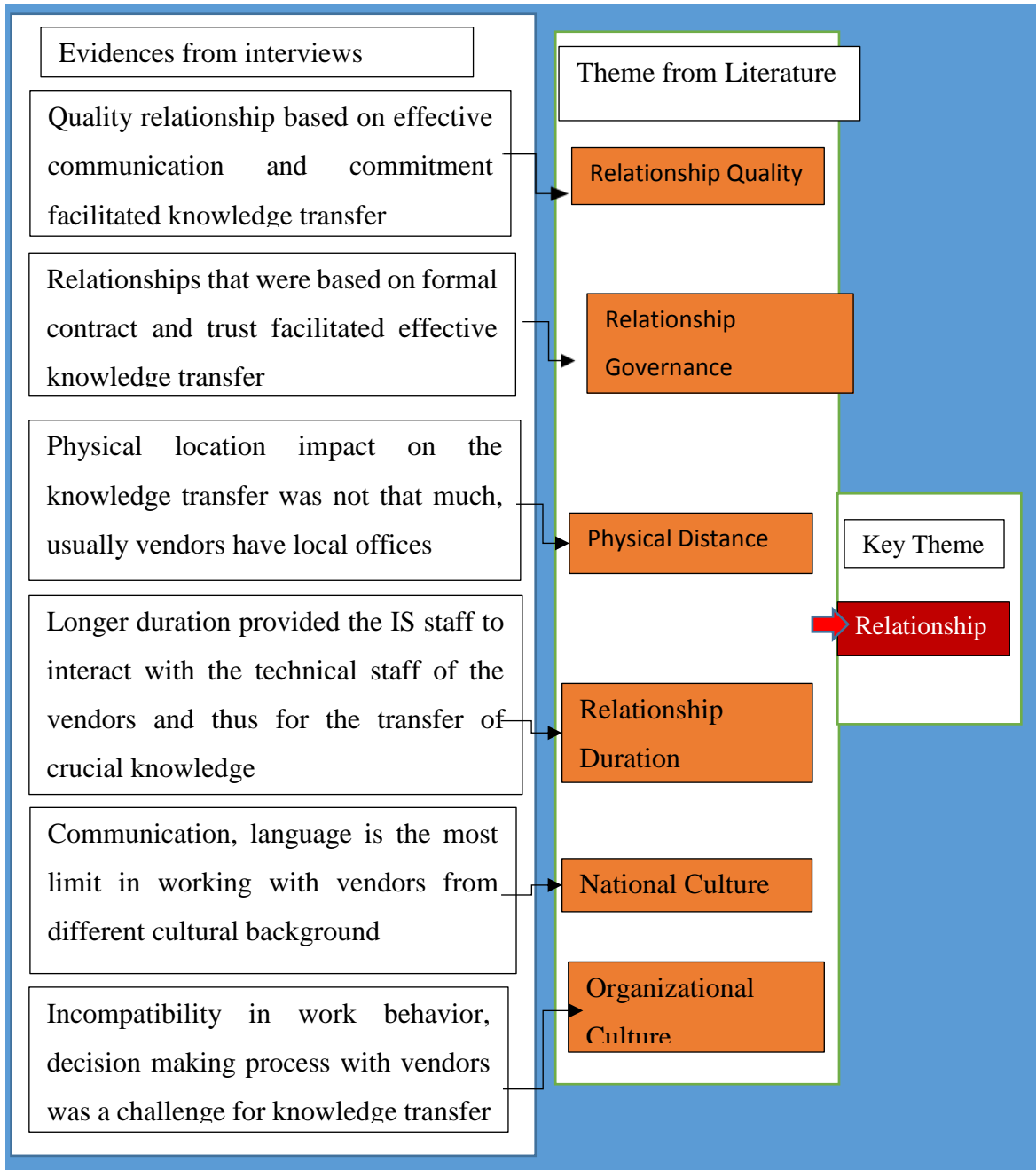


Figure 4.5: Relationship-related factors impacting knowledge transfer success

Relationship quality was one of the most often stated enabling factors for knowledge transfer in IS outsourcing. It was found that the managers at Ethio telecom’s IS division were very keen to establish cooperative relationships with the vendors which were based on effective communication

and commitment. For example, Officer1 argued that a quality relationship was a vital facilitator for successful knowledge transfer. He commented:

“...we tend to establish friendly relationships with our outsourcing vendors. In fact, we consider some of them [the vendors] as partners instead of suppliers and this becomes crucial in attaining higher knowledge transfer performance.”

Manager2 described the relationship as a marriage and a mutual beneficiary. He stated:

“The relationship is like a marriage. One is highly dependent on the other, and they have a contractual agreement that abides their relationships, SLAs. Mostly Ethio is dependent on the vendors on the knowledge and skills for operating the system and providing the services.”

Similarly, Manager4 emphasized:

“We attach great importance in establishing long-term quality relationships with our vendors who are committed to our expectations because this enables us to gain access to specialized technical and managerial expertise that build up our capabilities.”

All the IS division staff also agreed that their ability to gain smooth access to critical knowledge depended greatly on the level of commitment and the vendors’ willingness to allocate adequate time and much needed resources to the outsourcing relationship.

It was found that Ethio telecom’s IS division perceived contractual provisions and commitment worked together in outsourcing engagement in order to enhance the design and management of contracts which improved the performance of IS outsourcing generally and knowledge transfer in particular. Officer1 explained:

“Well-crafted contracts are necessary but insufficient for managing outsourcing relationships. We are increasingly using commitment and partnership, to complement the adaptive limit of formal contracts for managing the uncertainties embedded in these arrangements and to ensure that crucial knowledge is accessible to our IS staff.”

The duration of the outsourcing relationship was also found to have a significant impact on the success of knowledge transfer. Officer2 IS commented:

“As the outsourcing relationship sustains itself over several months or even sometimes years, trust intensifies, attachment with vendors develops and we become more familiar with each other. This enables us to get access to more valuable knowledge.”

This study indicates that most outsourcing relationships last for several months or even several years and, therefore, there is a need for an ongoing and cooperative relationship between both parties.

The organizational distance between Ethio telecom and its vendors was also found to have an impact on the success of knowledge transfer. It was identified that organizational distance consisted of physical distance, organizational culture distance and national culture distance.

All the participants agreed about the significance of the vendor’s physical proximity to knowledge transfer. Most of the interviewees indicated that close proximity encouraged the possibility of communication by increasing the opportunity of face-to-face interaction. In this regard, Officer1 provided the following quote:

“One of the measures that we often take into account when selecting an outsourcing vendor is the physical proximity. We believe that close proximity leads to better chances for frequent meetings in which our people gradually become comfortable with vendors, and develop bonds that enable them to learn and acquire knowledge. Even if our vendors are not local and their HQ and R&D is too far, but most of them has local offices and their experts are working with our team in our premises”.

Manager5 stated the following:

“The physical location is not impacting the knowledge transfer, usually vendors have representative engineers sitting in our office. But for complex cases, they communicate engineers out of Ethiopia. It creates some delay until they communicate and sometimes day/night time difference and holidays specific to vendor culture affect us to some extent”

Staff3 supported this idea by stating:

“.... since technical issues beyond the capacity of the vendors’ experts, who are working with us, are sent to their R&D, and the knowledge and the technical how to dos is not only delayed, but

also not from the holder rather through correspondences and this has an impact on the knowledge to be transferred especially for the tacit knowledge.”

Staff2 noted:

“physical proximity increases/enhances the transfer of knowledge, but in our case the solution done here on site is the one completed at off-site and only the customization is done on site; the knowledge transfer is not including the design, coding and the test is also an acceptance test not the software test, so the transfer of knowledge is highly limited.”

Manager3 argued that communication technology facilitated and close the gap of physical distance and stated:

“It is too far, but now a day physical separation has little impact on knowledge transfer. As a telecom company, we have different means of communication, that are equivalent to face to face meeting such as Skype for business and video conferencing.”

One of the most important inhibiting factors for knowledge transfer, which was Ethio telecom’s participants mentioned frequently, was the differences in organizational culture between their organization and the vendors. Many IS division staff reported that organizational culture incompatibility impeded knowledge transfer. Office1, whom was interviewed, expressed knowledge transfer, limitations during the BSS and OSS implementation which resulted from dissimilar work procedures with the vendor. He commented:

“It was hard to coordinate several knowledge transfer activities in these projects because of the entirely different ways in which we and the vendors operate.”

Officer2 also has similar experience in this regard and commented:

“As Ethio is Government Company, there is strict policy and procedure to be followed. There are challenges from the vendor side to understand and act as per the Ethio policy. This is especially true in case of training, procurement for the third party products, the vendors expect us to buy from them, but the country’s policy will not allow you to do so.”

Staff6 explained the organizational culture as follows:

“It (organizational culture) is very different. They are here as a project and one engineer might do many things at a time. But we are organized as different operation and project units to sustain the operation and maintenance. Also, we have different management styles.”

Manager1 also stated that:

“Totally different, vendor management style is tight and employees are industrious. But when it comes to Ethio’s side, most managers and employees seem to work just to make a living. For me we can gain more management styles and working culture which by itself is a knowledge transfer and impacting the transfer of knowledge.”

Staff4 also noted the difference as:

“Big difference if you consider the teamwork, working hour, decision making, communication flows are all totally different. We have incoherent team, this is due to poor work culture and management style.”

The researcher also investigated the impact of national culture distance on successful knowledge transfer. Since all of Ethio telecom’s IS outsourcing relationship had been limited to international vendors, it was understood that a large number of these vendors’ IS employees were expatriates who came from various countries, mostly from China. The differences in cultural background and language were perceived to have a significant effect on knowledge transfer during IS outsourcing projects. With regard to this issue, Officer2 commented:

“.... language differences create a challenge for us to interpret certain issues, and hamper our knowledge transfer activities from vendors”.

Manager4 also comment:

“There is a problem of language and communication. Because of language differences, both of us are using English as a communication medium, the vendors’ experts are not good at, which is a barrier, especially when we are working with Chinese experts”

Manager2 stated how the language difference impacted knowledge transfer:

“Language differences create a challenge for us to interpret certain issues, but cultural differences rarely hamper our knowledge transfer activities from vendors.”

Staff1 explained how the language and national culture affected the transfer of knowledge. He commented:

“It has an impact on the effectiveness of knowledge transfer, for example the documents they are using is in their language and the one given to us is in English, when we come to the content the Chinese version is the most advanced one, whereas the one in English is the basic one. The national cultural difference is highly reflected mostly during offshore training, especially on the foodstuff and meals, in my opinion this also disturb the trainees’ psychology and health, which indirectly affect the knowledge transfer.”

Another comment was extracted from the interview with Manager5. She explained her experience with the vendors:

“Culture incompatibility existed during outsourcing projects as we are working with people from different countries, but we have managed through time to bridge these cultural gaps. I have never experienced difficulty to learn and acquire knowledge from a person from different culture.”

Interviewed participant identified language differences as barriers in knowledge transfer. In most of the cases English is a second language for both expats and their local counterparts. If expat translates his ideas from Chinese to English, his or her counterpart has to interpret it from English to Amharic. Lack of personal commitment and lack of trust were also identified as an important barrier in knowledge transfer.

While analyzing the document, the researcher also found several email communications between IS Division and Human Resource Division on the problem of language; that states the vendors’ trainers are not fluent in English language and the local trainees are not good at the subject.

This study highlights that an appropriate governance of the outsourcing relationship is essential for knowledge transfer to take place.

4.6. Discussion

From Ethio telecom’s IS division perspective, successful knowledge transfer related significantly depend on the efficiency and the effectiveness of the knowledge transfer process. However, transferring knowledge from vendors was not straightforward and four sets of factors were found

to impact upon successful knowledge transfer. These four sets and the processes are summarized in Table 4.4 and discussed in the following section.

Factors Set	Factors	Evidences Extracted from the interviews on Factors Impacting Knowledge Transfer
Knowledge	Knowledge Tacitness	Explicit/codified knowledge was transferred easily in document, training manuals, codes, reports, etc. However, the IS staff were challenged in capturing tacit knowledge effectively.
	Knowledge complexity	Some technical knowledge was complex and difficult to understand and, thus, was relatively hard to capture.
Client	Learning intent	Intend to learn and explore opportunities to gain new knowledge from vendors contributed to successful knowledge transfer.
	Absorptive capacity	Prior knowledge and experience facilitated the transfer of new knowledge
	Motivation	Intrinsic motivation: interest in learning and professional development was the underlying factor for knowledge transfer success Extrinsic motivation: financial incentives and recognition were supportive factors for knowledge transfer and learning
Vendor	Vendor capability	A vendor with adequate resources and technical skills facilitated more effective knowledge transfer.
	Vendor credibility	Credible and trustworthy vendors provided more valuable knowledge and enhanced the IS staff's acceptance of new knowledge
	Vendor openness	The willingness of the vendor to be open and share crucial knowledge enhanced successful knowledge transfer
Relationship	Relationship quality	A relationship based on commitment and mutual collaboration facilitated faster and more effective knowledge transfer.
	Relationship governance	Formal (contract/SLAs) and informal relationships (trusts) are complementary and have to be applied together in order to enhance knowledge transfer.
	Relationship duration	Longer relationships provided more access to vendors' valuable knowledge.
	Organizational distance	Physical distance: close physical proximity facilitated more effective and efficient knowledge transfer. Organizational culture distance: incompatible organizational culture (work behaviors, decision making process, etc.) impeded knowledge transfer.

		National culture distance: different national culture existed, but did not hinder knowledge transfer and learning
Knowledge Transfer Processes	Structured /Formal	Training sessions, meetings, workshops, presentations enabled explicit knowledge to be transferred
	Unstructured /Informal	Social ties and face-to-face interactions facilitated to establish interpersonal relationships, that facilitated more efficient and effective knowledge transfer, particularly tacit knowledge

Table 4. 4: Summary of Factors Impacting Knowledge Transfer Success

4.6.1 Knowledge transfer Process

The participants noted that they all had used reports, instruction manuals, emails and other types of documentation, the classroom trainings and workshops; which is the type of structured/formal knowledge transfer processes. The majority of the participants also have put a great deal of emphasis on the importance of establishing mutual networks and social ties with individuals in the vendor organizations in order to facilitate effective knowledge transfer during the outsourcing relationships, which is identified as an unstructured/informal way of knowledge transfer processes. Furthermore, they agreed that going beyond the usual communication technologies such as e-mails and instant messaging and facilitating personal contacts and face-to-face interaction and video tutorials were absolutely crucial for effective knowledge transfer.

It could be argued here that in IS outsourcing, formal and informal processes both play a pivotal role in transferring technical and business knowledge from vendors to Ethio telecom’s IS division as a client. Nevertheless, the findings suggest that it is more likely that simple and codified knowledge be transferred by formal and structured transfer approaches, whilst tacit and complicated knowledge would be more likely to be transferred through personal, unstructured and informal knowledge transfer approaches.

The findings emphasize the need to pay greater attention to interpersonal ties amongst individuals on both sides of the relationship can improve the ability to learn effectively and enhance the quality of knowledge acquired. The findings are consistent with results of Al-Salti et al. (2010) who argue that friendships between organizational members across organizational boundaries constitute a type of tie which is likely to exert an important influence on inter-organizational knowledge transfer. This is also in line with argument of Argote, McEvily, and Reagans (2003) that tacit knowledge “is best transferred through rich communication media such as observation, rather than more explicit media”.

4.6.2 Knowledge Factors

The participants reported that the nature and the characteristics of knowledge played an important role in knowledge transfer in IS outsourcing. Knowledge tacitness was perceived as a vital factor that determined the effectiveness and the efficiency of knowledge transfer. Explicit knowledge was documented in reports and technical manuals, and therefore was transferred easily by IS staff. On the other hand, tacit knowledge was challenging to be transferred from vendors because such type of knowledge is embedded in individuals' experiences. Therefore, the transfer of tacit knowledge often required longer face-to-face and personal contacts between the two organizations.

This finding is consistent with the findings of previous researchers such as Szulanski (2003) who argues that tacit knowledge is having 'sticky' characteristics, which makes it difficult to be transferred from the source to the recipient.

Additionally, the findings confirm the argument of Inkpen and Pien (2006) who explain that explicit knowledge can be transferred relatively easily through formal learning and written documents such as manuals and operating instructions. However, tacit knowledge is often context specific and its transfer is much slower, costly, and uncertain.

Knowledge complexity was another key knowledge-related factors which also the participants of Ethio telecom IS division stated as impacting upon knowledge transfer during IS outsourcing projects.

Knowledge complexity has not been explored well in prior inter-organizational knowledge transfer (Minbaeva, 2007). Preceding works such as Simonin (1999) found that technical knowledge tends to be linked with several interdependent technologies, routines, individuals, and resources which make it complex to be leveraged by clients. This study also highlights that technical knowledge is sophisticated and intellectually difficult to transfer. Therefore, it could be argued that knowledge which is complex, unfamiliar and not well-understood is harder to transfer than less complex knowledge.

4.6.3 Client Factors

This set consists of key factors that describe the characteristic of the IS division and the IS professionals within these divisions and how these factors impact upon successful knowledge transfer. Learning intent was cited constantly by the participants as an important factor in

knowledge transfer. It was found that the majority of the IS employees in Ethio telecom were eager to learn from vendors and develop new knowledge, skills and competencies. For example, they focused both on how the vendors' technical teams solved problems and where they looked for answers. Another example which demonstrates that learning intent is vitally important was that when IS employees in the organization tended to take more responsibility in the project and worked side by side with vendors' teams, they were able to transfer knowledge most effectively.

As noted in Chapter two (Section 2.5.2), multiple researchers e.g. Tsang (2002) emphasizes that learning intent is a critical factor that facilitates more effective inter-organizational knowledge transfer.

This study endorses the vital role of absorptive capacity in the inter-organizational learning context. The results support the theoretical argument by Cohen and Levinthal (1990) that absorptive capacity is history or path-dependent, depending upon the prior knowledge held by the learner. Therefore, the ability to absorb new knowledge greatly depends on the accumulation of related prior knowledge.

The third factor in this set which contributes to successful knowledge transfer is motivation. There were two types of motivations which the participants highlighted that as being essential when it came to knowledge transfer during the course of IS outsourcing projects, namely intrinsic and extrinsic. Many of the participants reported that, in most cases, they were very interested, passionate, satisfied and enjoyed acquiring new knowledge and learning during the outsourcing projects. These personal desires to learn, develop their own competencies and improve personal capabilities enabled many of the IS staff to exert extra efforts and time in searching for and transferring some business and technical knowledge from vendors.

The findings complement the work of other scholars who have stressed the roles of extrinsic and intrinsic motivations in employees' knowledge transfer e.g. Ko et al. (2005). The results of this study also support Argote et al. (2003) who found that it is critically central to provide individuals with incentives and motives to participate more actively in the knowledge transfer process. Members of IS staff, like all individuals, expect some acknowledgement of their accomplishments, including knowledge transfer. Recognizing the members of IS staff's achievement in bringing new knowledge to their division during IS outsourcing projects has become essential in ensuring effective knowledge transfer.

4.6.4 Vendor Factors

This set consists of key factors that describe the characteristic of the vendor, which is the source of knowledge. Drawing from the case study, it has been found that vendor capability played a critical role in knowledge transfer in IS outsourcing. A vendor with high level of experience, expertise and disseminative capability allowed IS staff to appreciate and transfer new vital knowledge. Previous works in IS outsourcing point out the significance of vendor capability in successful outsourcing e.g. Goles (2001); Saunders Gebelt and Hu (1997). The findings of this study show that the transfer of knowledge requires the vendors' greater willingness to devote adequate time and resource in supporting the knowledge transfer process.

The participants pointed out that vendor credibility and trustworthiness were essential ingredients in order to ensure effective knowledge transfer in IS outsourcing. The empirical evidence, here, is consistent with many IS outsourcing scholars e.g. Barthelemy (2003); Lee J.-N. (2001) who argue that vendor reliability plays a pivotal role in the success of outsourcing relationships. These findings also support many of the inter-organizational knowledge transfer studies which have indicated that the credibility of the source of knowledge is vital in increasing the amount of knowledge acquired by the recipient

Vendor openness and transparency has been considered by the participants as a key element in determining the amount and quality of knowledge transferred by the IS staff. Prior inter-organizational knowledge transfer research, such as Easterby-Smith et al. (2008) and Ko et al (2005) did not pay enough attention to the importance of vendor openness as a facilitator of inter-organizational knowledge transfer. This study, however, illustrates the role of vendor openness and argue that the success of knowledge transfer in IS outsourcing depends greatly on the vendor's transparency, willingness and intent to share crucial knowledge to clients.

Perhaps, the most interesting finding which was not noted in earlier is that the participants of this study highlight that the vendors want to create "vendor dependency" and not as such willing to transfer the required knowledge, if it is not explicitly described on the SLAs. They also pointed out that this is possible only if the local employees know how to include the appropriate/required knowledge in the SLA.

4.6.5 Relationship Factors

This set addresses the characteristics of the relationship between the Ethio telecom's IS Division (the recipient of knowledge) and the vendors (the source of knowledge). The first factor in this set is relationship quality. Relationship quality was one of the main factors highlighted by most of the participants as being highly imperative in increasing the success of knowledge transfer in IS outsourcing. A relationship which is based on commitment, flexibility and effective communication has been seen to facilitate more effective and efficient flow of knowledge from vendors. The empirical findings, here, are in line with the many studies which highlight the impact of relationship quality on IS outsourcing success e.g. Swar et al. (2012) and Lee J.-N. (2001). This study is supportive of the notion that a quality relationship provides greater interactions and enables business partners to work more closely and effectively and, therefore, facilitates the transfer of crucial knowledge.

The second factor in this set is relationship governance. This study highlights that an appropriate governance of the outsourcing relationship is essential for knowledge transfer to take place. This finding is consistent with the empirical results offered by Poppo and Zenger (2002) and Barthelemy (2003) which show that using formal contracts and relational governance function as complements (and not as a substitute) when managing IS outsourcing ventures. Thus, it could be argued that in order to achieve success in knowledge transfer, relationship management should complement contractual arrangements.

The third factor in this set is relationship duration. The majority of the participants indicated that, as the duration of the outsourcing relationship increased, they were able to develop relationship-specific routines with their vendors, and consequently, the members of their IS staff became more capable of acquiring complex knowledge.

In this study, it could be argued that long relationships breed strong familiarity which increases the vendors' willingness to share critical knowledge. As the relationship between the client and the vendor ages, they gain deeper and richer impressions of each other, which enable them to bridge any cultural incompatibility.

Another factor in this set is organizational culture distance. Organizational culture distance was also perceived by the majority of the participants to be a major hindrance for knowledge transfer success. Prior research on inter-organizational knowledge transfer has not paid adequate attention

to the impact of organizational culture distance on knowledge transfer success, and has focused instead primarily on the influence of national culture distance. This study examined empirically organizational culture distance and suggests that clients and vendors which have incompatible work behaviors, styles of management, working practices, legislations and technology tend to have difficulties in establishing close relationships and smooth cooperation which facilitate knowledge transfer.

4.7. Proposed Conceptual Framework

The proposed framework is based on reuse of existing models found in the literature (conceptual framework in Figure 2.2) and on the results of this research stimulate an improved conceptual model as illustrated in Figure 4.6 below and discussed in detail.

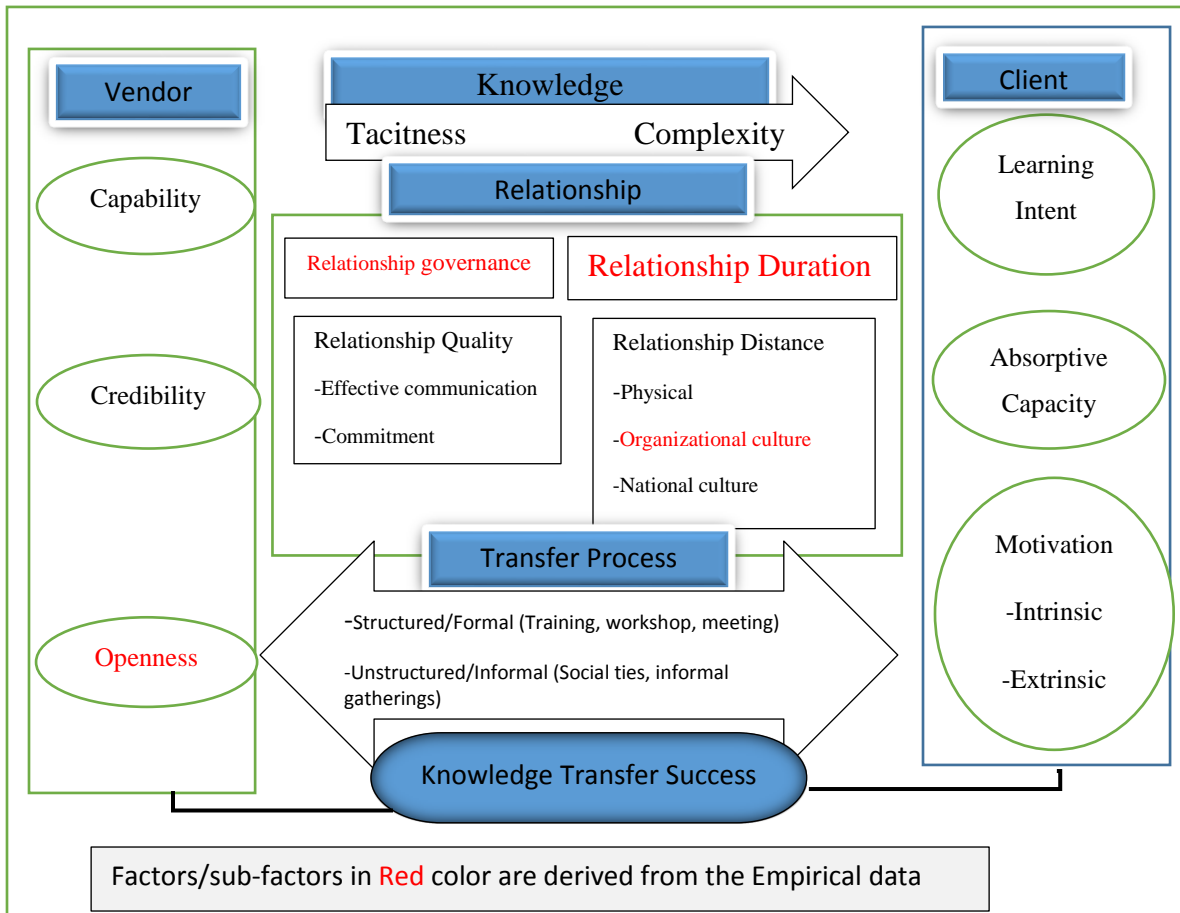


Figure 4.6: Revised proposed conceptual framework for knowledge transfer success in IS outsourcing

This revised proposed conceptual framework provides a more holistic understanding of the key factors which facilitate or inhibit knowledge transfer success from vendors to Ethio telecom in IS outsourcing. As shown in Figure 4.6, the framework suggests that the success of knowledge transfer is affected by four sets of factors.

The tacitness and complexity of knowledge have adverse effect on knowledge transfer success. Tacit and complex knowledge is less transferable by Ethio telecom's IS division during the course of outsourcing projects. The transfer of such knowledge requires the establishment of social ties and face-to-face interactions with individuals in the vendor organization.

The learning intention of the IS staff in Ethio telecom and their absorptive capacity have been found to be critically essential in transferring the vendor's crucial knowledge. Additionally, two types of motivations (intrinsic and extrinsic) play a pivotal role in the success of knowledge transfer in IS outsourcing. Furthermore, it was found that despite the recognized importance of financial motivation and recognition, IS staff of the Ethio telecom are able to acquire more crucial technical and business knowledge from vendors when they are satisfied and enjoyed working on the IS projects.

The capability and credibility of the vendors have also been considered to be important in order to enjoy a more effective and efficient knowledge transfer. IS staff of the Ethio telecom gain better opportunities to learn and acquire knowledge from vendors which possess adequate technical capabilities and expertise and have a desire and willingness to provide a suitable knowledge transfer atmosphere. The empirical findings also suggest that knowledge transfer success cannot be achieved unless the vendor is open and transparent. The vendors' openness is considered to be a key factor in determining the amount and the quality of knowledge that could be transferred by the IS staff during the outsourcing project.

The characteristic of the relationship between the client and the vendor determines the effectiveness and the efficiency of knowledge transfer. A quality relationship that is based on commitment and effective communication provides a fruitful atmosphere for the IS staff of the Ethio telecom to transfer knowledge and learn from the vendors. At the same time, vendors tend to devote efforts and spend extra time and resources in teaching and passing on knowledge to the Ethio telecom. The empirical investigations also suggest that longer relationships provide the IS staff with opportunities to establish closer relationships and build trust with the individuals on the

vendors' team, and therefore have smoother and better paths to transfer knowledge and learn. Additionally, this study highlights that an outsourcing relationship which is governed by contract and trust simultaneously leads to a more successful knowledge transfer. Nevertheless, the organizational distance between the client and the vendor was found to create challenges and complications for knowledge transfer. Physical distance is a key inhibiting factor for knowledge transfer success. IS staff of the Ethio telecom enjoy more effective learning and knowledge transfer by working side by side with local representative of the offshore outsourcing projects in comparison to those who have no local representatives, since geographical and time zone differences often delay communications.

Organizational culture distance has also been considered as a key factor which hampers knowledge transfer. The study suggests that organizational culture incompatibility, including different work behavior, decision making process, and approaches to resolving conflicts limit the knowledge transfer from the vendors. This research found that language difference has great impact on the success or failure of knowledge transfer, whereas, national culture distance does not have a great impact on the success or failure of knowledge transfer.

It became clear at the end that with a few exceptions, most of the identified factors have significant impacts on knowledge transfer. As found in this research, a successful knowledge transfer in Ethio telecom's IS Division more depends upon its staff intention to learn and absorptive capacity, and the tacit nature of knowledge.

Tacit knowledge is embedded in the vendors' employee and thus specific to the individuals, this create a large dependence on the vendors.

To effectively exploit the vendors' knowledge, Ethio telecom's IS division staff must have a learning intention in mind and that intention must be supported by previous experience to easily transfer the required knowledge within a short period of time, which then also made them less dependent on vendors.

The dependence of tacit knowledge further has implications for the knowledge transferring process. As the study found out that the process for transferring of tacit knowledge was highly dependent on unstructured/informal process, which involved a social interaction between the

vendors' employee and Ethio telecom's IS Division staff, and proved to be the most important for transferring the tacit knowledge.

4.8. Chapter Summary

This chapter presented and discussed the findings of the case analysis. Ethio telecom's IS division focused on how to improve the capability and performance of their IS divisions through inter-organizational knowledge transfer, and IS outsourcing was seen commonly as a strategy for achieving such necessary improvements. Drawing on the data collected from the division, it is revealed that outsourcing was a fruitful environment in the leverage of new superior technical and business knowledge and competencies and renewing old ones from vendors. The findings elicit that knowledge transfer success is determined by four main sets of factors: knowledge factors, client factors, vendor factors, and relationship factors. The tacit nature of knowledge and the learning intension and absorptive capacity of Ethio telecom's IS Division are more important factors in transferring the knowledge from vendors easily and in a short period of time.

CHAPTER FIVE: CONCLUSION and RECOMMENDATIONS

5.1. Results and Conclusion

The intention of this study was to provide an understanding and analysis of the key factors which facilitate or inhibit successful knowledge transfer from vendors to Ethio telecom's IS division in information systems (IS) outsourcing. The following paragraphs summarize the major results of this study.

IS outsourcing relationships provided the best catalyst for Ethio telecom's IS Division to transfer potentially useful new technical and business knowledge from vendors.

The study employed a qualitative case study approach using multiple methods of data collection and provided a detailed investigation and understanding of the knowledge transfer in IS outsourcing in terms of the meanings and point of views the participants bring to them.

Information regarding knowledge transfer in IS outsourcing was obtained from multiple participants with different views, perceptions and experiences.

Key findings yielded a revised holistic framework that identified knowledge transfer success in IS outsourcing is impacted by four sets of factors, namely:

1. Knowledge factors (knowledge tacitness and knowledge complexity),
2. Client factors (learning intent, absorptive capacity and motivation),
3. Vendor factors (vendor capability, vendor credibility and vendor openness), and
4. Relationship factors (quality, duration, governance and organizational culture and language distance).

Two types of processes that are employed in knowledge transfer, structured/formal for explicit and less complex knowledge, and unstructured/informal for tacit and complex knowledge.

It became clear that with a few exceptions, most of the identified factors have significant impacts on knowledge transfer. As found in this research, a successful knowledge transfer in Ethio telecom's IS Division more depends upon its staff intention to learn and absorptive capacity, and the tacit nature of knowledge.

Tacit knowledge is embedded in the vendors' employee and thus specific to the individuals, this create a large dependence on the vendors.

To effectively exploit the vendors' knowledge, Ethio telecom's IS division staff must have a learning intention in mind and that intention must be supported by previous experience to easily transfer the required knowledge within a short period of time, which then also made them less dependent on vendors.

The dependence of tacit knowledge further has implications for the knowledge transferring process. As the study found out that the process for transferring of tacit knowledge was highly dependent on unstructured/informal process, which involved a social interaction between the vendors' employee and Ethio telecom's IS Division staff, and proved to be the most important for transferring the tacit knowledge.

In the framework, the effects of social ties, vendor openness, relationship governance and duration, organization culture and language distance on knowledge transfer are revealed clearly.

This study expanded earlier findings on the impact vendor capacity and capability, client learning intent, absorptive capacity and motivation.

Added new complementary insights to the knowledge transfer in IS outsourcing research by conducting in different national environment (Ethiopia) and different sector (Ethio telecom) to knowledge management.

5.2. Recommendations for Practices

This study provides some useful insight for Ethio Telecom IS managers who often need to take decisions with regard to knowledge transfer when considering the outsourcing of specific IS functions. The conceptual framework also provides general guidelines for IS practitioners to structure an effective knowledge transfer strategy when outsourcing IS. By carefully understanding the key factors which impact on successful knowledge transfer in IS outsourcing, a more comprehensive strategy guiding intended knowledge transfer and learning might be devised.

Ethio telecom IS Division, when considering IS outsourcing relationships has to invest in its own learning capacity and should ensure that, within the organization, there is a commitment to knowledge transfer and learning and an open mindedness to new opportunities for acquiring

crucial knowledge from vendors. The empirical investigations suggest that, when learning intent is high, IS staff in the Ethio telecom have a higher tendency to acquire potentially useful knowledge from vendors. Additionally, they need to develop their employees' absorptive capacity if they want to maximize the benefits of knowledge transfer. This study suggests that IS employees, who have accumulated related knowledge and experiences, absorb new knowledge and achieve superior knowledge transfer outcomes. A strong existing knowledge base allows an individual to more effectively appreciate access to external new knowledge. Ethio telecom's IS Division has also to invest in consistent motivation of IS staff in order to achieve long-term successful knowledge transfer. The empirical evidence suggests that intrinsic as well as extrinsic motivations are vital since they enable IS staff to enjoy working with various vendors, exert extra time and effort and appreciate acquiring new knowledge and skills during the IS outsourcing projects.

Additionally, this study found that in order to acquire full benefits of knowledge transfer, Ethio telecom's IS Division should target potential IS outsourcing vendors based on their observed characteristics such as technical and business competency, disseminative capability, trustworthy and reliability in the market and openness. Moreover, the empirical investigations highlight that organizational culture distance between Ethio telecom and vendors impact negatively on successful knowledge transfer. Before getting on the outsourcing arrangement, Ethio telecom's IS Division should look for hard evidence that the vendor possesses the capabilities it claims and could conduct on-site visits, run pilot studies and use third-party consultants for careful screening of vendors. This way, organizational compatibility could be assessed carefully beforehand and ways to increase compatibility could be developed during the course of the contract.

The empirical evidence illustrates that a contract is needed for IS outsourcing, but it is not possible to list all the requirements exhaustively in the contract. It was argued that in order to achieve successful collaboration and effective and efficient knowledge transfer, Ethio telecom's IS Division need to govern their outsourcing relationship with vendors through both a formal contract and trust simultaneously. In other words, this study suggests that in addition to building contractual agreements, the establishment of a cooperative and trustful relationship with the vendors increases the opportunities to gain access and transfer crucial knowledge.

In addition, this study highlights the importance of utilizing the appropriate processes which are available to IS employees in the Ethio telecom to transfer knowledge from vendors. The options

range from formal training programs to informal social interactions. Although all of the processes are potentially useful, it appears that different processes are associated with certain types of knowledge and influenced by their corresponding level of knowledge embeddedness. Most importantly, it is hoped that the results of this study will encourage Ethio telecom's IS managers to pay closer attention to social ties. Social ties between IS staff of the Ethio telecom and vendors present opportunities for knowledge transfer, as they may serve as channels for the relevant knowledge flow. Also, this study emphasizes that it is critical for Ethio telecom IS Division to design a comprehensive transfer strategy which grants potential access to knowledge and maximizes the duration and level of interaction and closeness of their IS staff with those of the vendors in order to facilitate more effective and efficient knowledge transfer.

The findings of this study add new complementary insights to the knowledge transfer in IS outsourcing research by conducting in different national environment (Ethiopia) and different sector (Ethio telecom) into the knowledge management literature by showing empirically the possible factors that impact knowledge transfer success from vendors to clients. Previous researchers have called for further empirical investigation of this phenomenon. For example, (Aziati, Juhana, & Hazana, 2013) states “further, empirical papers, in different contexts and countries would enable to obtain an overall picture of the possible factors that impact knowledge transfer success from vendors to clients”. This study would be considered as a response to such calls, and therefore this is a timely contribution.

This study is also one of a very few that have employed a qualitative approach to address the issue of inter-organizational knowledge transfer in the context of IS outsourcing relationships. Previous researchers largely used quantitative methods e.g. Ko et al. (2005) and Xu and Ma (2008).

5.3. Recommendations for Future Research

Although this research provides new insights and draws valuable lessons with regard to knowledge transfer in IS outsourcing, there are some limitations which are worth noting as they open up paths for future research.

Firstly, this study investigated the Ethio telecom's IS Division, which is a client's perspective and is only one side of the knowledge transfer process. A bilateral perspective of the research questions (i.e. from both client and vendor sides) permits a balanced understanding and complete

examination and comparison between the perceptions of the two sides of the relationship. This represents a worthy route of inquiry for future researchers.

Secondly, this study is a single case and specific to the telecom sector, future research conducted in other different environments would verify the findings of this study and may yield additional insights. Conducting future study in the multiple cases and different environment would enable researchers to obtain an overall picture of the phenomenon or perform a comparison between telecom and other organizations.

Finally, this study might be extended to investigate how proprietary may influence the flow of knowledge from vendors to clients in IS outsourcing.

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Appendix:

1. Semi-structured Interview Guideline

Semi-Structured Interview Questions	Research Objectives		
	To examine the knowledge, transfer process employed by Ethio telecom to acquire knowledge from vendors	To identify the factors that facilitate or impede knowledge transfer success in Ethio telecom IS outsourcing	To propose organizational knowledge transfer adoption model based on the research findings of IS outsourcing, knowledge transfer process, and the analysis of the affecting factors.
<p>What are the key processes/activities that your division is using to transfer technical and business knowledge from the vendor in IS outsourcing projects?</p> <ul style="list-style-type: none"> • Document/ reports exchanges • Site visits • Presentations • Workshops • Problem solving meetings • On-Job training • Knowledge Portal • Others 	√		
<p>Were any trainers or mentors assigned to your support center to transfer knowledge? If yes, how long did the training last? What kind of knowledge was transferred?</p>	√		
<p>How hard is to document the technical and business knowledge from the vendor in written forms or transfer it in verbal terms?</p>	√	√	
<p>How much time and effort do you need to spend in order to understand and transfer technical and business knowledge from the vendor?</p>		√	
<p>To what extent do you consider IS outsourcing as an opportunity to learn and acquire new technical and business knowledge?</p>	√		

To what extent does absorptive capacity (ability to value, assimilate and apply based on prior knowledge and experience) impact knowledge transfer success?		√	
How important is motivation / reward? How it impacts successful knowledge transfer in IS outsourcing projects?		√	
To what extent do you think that the vendors are capable, expert and have wealth of technical and business knowledge?		√	
Dose the vendor have the willingness to devote time and resource to the transfer?		√	
To what extent do you think that the vendor is credible and trustworthy?		√	
How would you characterize the relationship between your organization and the vendors? How does this impact knowledge transfer?		√	
To what extent is your division differing from the vendor in terms of physical location, organizational culture and national culture? Dose this distance impacts the knowledge transfer? If so, How? 1. physical location 2. organizational culture (policies, work patterns, practices, decision making) <ul style="list-style-type: none"> • To what extent is corporate culture, business practices and management styles of the vendor is different than yours? 3. national culture (language, cultural background, norms) <ul style="list-style-type: none"> • Do you consider language difference as a major obstacle in communicating with and understanding your vendor? 		√	
How important is the contract (service level agreement (SLA)) to the outsourcing arrangement? How is this impact knowledge transfer?		√	
Do you feel that vendors fulfil their obligations with regard to knowledge transfer? to what extent?		√	

What is the impact of informal relations / social ties on knowledge transfer in IS outsourcing?	√	√	
Would you say that outsourcing projects provided you with the expected opportunities to acquire new knowledge?			√
To what extent were you satisfied with outsourcing relationships with regard to knowledge transfer?		√	
In your opinion, how do you describe a successful knowledge transfer in IS outsourcing?			√
How does your division expand its knowledge?			√
How is new knowledge transferred and how is it distributed in the division? Could you give an example?			√
How does knowledge flow in and out of the individuals and the division?			√
Do you agree that knowledge transfer from vendors to Ethio telecom IS division is successful and lead to improved performance?			√
What knowledge do you consider you have transferred to Ethio telecom IS division during your assignment? (Management skills, modern business practices, technical skills, etc.)			√
What types of knowledge are transferable in your opinion? Can you see different models of transfer appropriate for different types of knowledge?			√

Source: Adopted with modification and addition from (Al-Salti, 2011).

2. Checklist for Document Analysis

1. Type of document: project descriptions, work instructions, manuals provided by vendor companies to Ethio telecom IS division, Service Level Agreements (SLAs)
2. The content in the document/ the schedules and contents of knowledge transfer
3. The aim of the document: What is the aim of the document? What is the message? Who is the target audience?
4. How near or far away is the document from the content? Does the document really represent the intended content? Feedback given by trainees after training

5. Where does the document come from? Who wrote the document? Who takes responsibility for it?

3. Checklist for Observation

1. Participate in training programs, and knowledge sharing meetings
2. How individuals give a technical solution to solve users' problems
3. Observe what individuals are doing, what they learn and how they learn
4. participate in meetings and discussions at section, department, division and company levels related to vendors