



Practices and Challenges of knowledge transfer in offshore outsourced telecom project in the case of ethio telecom

A Project work Submitted to school of commerce, Addis Ababa University in partial fulfillment of the requirement for the Master's degree in project management

By: Sintayehu Fiseha Alemayehu

Advisor: Solomon Markos (PhD)

**October, 2017
Addis Ababa, Ethiopia**

Declaration

I, the undersigned, hereby declare that the work presented herein is original work done by me and has not been published or submitted elsewhere for the requirement of any degree or program. Any literature work done by others and cited within this paper has been given due acknowledgement and listed in the reference section.

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Letter of Certification

I certify that this master's project work titled, “**Practices and Challenges of Knowledge Transfer in offshore outsourced Telecom Project in the Case of Ethio Telecom**” is the authentic work of **Sintayehu Fiseha** who carried out the project work under my supervision. I also certify that to the best of my knowledge the work reported herein is original work and doesn't have been published or submitted elsewhere for the requirement of any degree or program.

Confirmed by Advisor;

Name: Solomon Markos (PhD)

Signature: _____

Date: _____

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1. External examiner:	_____	_____	_____
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Acknowledgement

First of all, I would like to thank the Holy God for all the love, patience and strength he granted me throughout my academic life.

My gratitude also goes to my advisor, Dr. Solomon Markos, for his valuable feedbacks on this project work as well as his determination, encouragement and support during this project period.

Besides, my gratitude extends to ethio telecom project employees and management who gave their precious time and energy to fill the questionnaire for the success of this project work. It would have been impossible to finalize this work without their involvement.

Finally, I would like to give my sincere appreciations to my families who have given me their priceless backing and affection throughout the project period.

Sintayehu Fiseha

October 2017

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Acronyms

ICT Information Communication Technology

IS Information System

IT Information Technology

KM Knowledge Management

PBO Project Based Organization

Abstract

Knowledge transfer has been a major concern in offshore outsourced telecom projects where new technologies and services are at stake. However the effect of knowledge transfer practices, challenges and influencing factors on the rate of organizational knowledge transfer has never caught the required attention. As a contribution to this gap, this paper aims to investigate the effect of current knowledge transfer practices (existence of strategies, processes and procedures, lessons learned, use of project knowledge repository, recognition scheme, training quality evaluation, IT and training opportunities), challenges (organizational readiness, organizational politics, organizational culture, national culture, and language barriers) and influencing factors (client- related, vendor-related, Knowledge complexity, transfer mechanism and relationships quality) on overall effectiveness of project knowledge transfer. The survey was conducted in ethio telecom and vendor organizations targeting project staffs that are familiar with the project environment. The study findings based on an overall sample response rate of 96.66% indicated that the current knowledge transfer practices are not mature in areas such as establishing processes and procedures, incentive schemes, and evaluation of training quality and content. There are also different challenges found to impact the effectiveness of knowledge transfer such as lack of organizational readiness, organizational politics, national culture, language barrier and informal relationships. Moreover, factors such as dissemination capability, willingness, trustworthiness, and knowledge complexity has been perceived as significant factors affecting knowledge transfer in outsourcing projects of the telecom sector.

Key Words: Offshore outsourced, Knowledge transfer, Practices, Challenges, Influencing factors

Chapter 1. Introduction

1.1 Background of the Study

Organizations continuously search for more effective knowledge transfer approaches in order to survive, to maintain their operations, to manage state of the art technologies and to grow in an ever-changing and competitive environment of the twenty-first century. Knowledge Transfer (KT) is an important process where an organization identifies and learns from specific knowledge which exists in another organization or in its different parts (Achara Khamaksorn, Esra Kurul and Joseph Handibry Mbatu Tah, 2016).

Outsourcing of telecom network projects has become an emerging trend among global companies that seek new technologies and services from offshore vendors. The development of project management capabilities in organizations, simultaneously with the application of information management systems, allow organizations to work in partnership in defining plans and managing take-to-market projects in order to bring beneficial change to an organization. One of the foundations to these changes brought about by offshore outsourced projects is the role of inter-organizational knowledge transfer practices. How firms can design, manage and support knowledge transfer as a strategic goal of their outsourcing relationships is one of the most influential factors in knowledge transfer (Voigt Benjamin, Novak Jasminko, Schwabe Gerhard, 2007).

The major problem of most outsourcing firms lies on lack of understanding in the underlying practices, challenges and factors to effective knowledge transfer. Analysis of existing theoretical perspectives and empirical findings related to the factors that facilitate or hamper knowledge transfer success in IS outsourcing show that there are generally five sets of factors hindering IS outsourcing projects: knowledge-related, recipient-related, source-related and relationship-related and transfer media related challenges that facilitate or inhibit knowledge transfer success.

Thus, this study will build on work already done by undertaking a nearly holistic investigation on current practices, challenges and factors in order to examine confirm and validate their effect on knowledge transfer in ethio telecom's outsourcing projects. It also aims to contribute to existing practices by devising a conceptual framework based on empirical evidences.

It is therefore the purpose of this study to investigate those practices, challenges and factors affecting knowledge transfer in offshore outsourced projects of ethio telecom. Also central to the research study is the exploration of those practices, challenges and factors that have greater roles to knowledge transfer during the project lifecycle. Among these, emphasis is placed on those situations identified during preliminary investigation such as existence of strategies, processes and procedures, organizational readiness, organizational and national culture, organizational politics, language barriers and knowledge complexity.

1.2 Statement of the problem

Offshore outsourcing of projects in telecom sector has been a common practice in the current competitive international market. Most of the network infrastructure is deployed by offshore vendors who are usually manufacturers of telecom equipment and tools. In this kind of environment, knowledge transfer has always been an essential subject for telecom service providers. Knowledge transfer is the process of knowledge passing from one person to another person, or from a group of people or organizations to another group of people or organizations (Lanthom Jonjoubson, Nathaporn Thammabunwarit and Kitt Lertkamonrak 2015).

There are different knowledge transfer practices in ethio telecom offshore outsourced projects. Some of the practices include; delivery of foreign and local trainings, on the job mentoring, coaching, meetings, workshops, recorded documents, factory visits, experience sharing visits, and formal and informal interactions between the parties. Even if employees are part of the abovementioned knowledge transfer practices in some way, the transfer has never been effective due to various factors.

Preliminary investigation revealed that there are various practices contributing to ineffective knowledge transfer in ethio telecom outsourcing projects such as; lack of clear strategies, processes and procedures; Inadequacy of lessons learned from previous projects; inefficient training evaluation schemes; and use of information technology infrastructure. A range of challenges that contribute to ineffective knowledge transfer are also explored in the initial investigation such as; lack of organizational readiness to capture, translate, organize, and store project knowledge; Quality and nature of relationship between the vendors and ethio telecom, challenges associated with cultural differences (national culture and organizational culture differences); Organizational politics, and Language barriers.

Similar investigations also showed that there are different factors that affect knowledge transfer either positively or negatively. These include; client side factors (learning intent, motivation, and absorption capability); vendor related factors (unwillingness, incapability and trustworthiness, dissemination capability), knowledge complexity; and fitness of knowledge transfer mechanisms.

Literature review also exposed that the focus of several previous studies were on the type of knowledge transferred, the nature and characteristics of source of knowledge, the recipients of knowledge, the relationship between the source and the recipient or combination of these set of factors (Zahran Al-Salti et al., 2010; Mian Ajmal et al., 2010; Jo Rhodes et al., 2008; Xu and Ma, 2008). In view of these studies, significant numbers of challenges and factors that affect knowledge transfer are not incorporated indicating that there is a gap in the literature regarding knowledge transfer in outsourcing projects in general.

First, majority of articles identified different challenges and factors, even if not comprehensive, that influence knowledge transfer but a few of them include organizational practices (strategies, processes and procedures, role ambiguity and inadequacy of lessons learned), challenges (organizational readiness, organizational politics, national culture, and language barrier), and influencing factors (vendors'

trustworthiness, capability and knowledge complexity) as barriers knowledge transfer in their studies.

Secondly, most of the studies collected their survey data either from the client team or the vendor team but not inclusive of both groups. A bilateral perspective of the research (i.e. from both sides) permits a balanced understanding and fuller examination and comparison between the perceptions and leanings of the two sides. Therefore, this study has a huge importance in contributing towards a better and inclusive understanding of the practices, challenges and influencing factors of knowledge transfer effectiveness by investigating both the client side and the vendor side insights.

Thirdly, the researcher has found that almost all of the studies on practices, challenges and factors hindering knowledge transfer are done in the context of information systems and information technology organizations. There are a few-if any at all-studies that have been done on telecom projects (ICT sector). Even out of a plethora of researches reviewed in IS/IT outsourcing projects, only a few focused on the public sector.

Another important gap identified in this review is that, to the best of the researcher's knowledge, there are no prior studies in Ethiopia context focused on practices and challenges of knowledge transfer in offshore outsourced projects especially in telecom sector.

It is therefore not clear from literature whether the same conclusions can be made to offshore turnkey outsourced projects of ethio telecom. Thus, this study will build on work already done by undertaking a holistic investigation by taking more factors, challenges and practices into consideration in order to thoroughly examine the impact they can have on knowledge transfer in telecom offshore outsourced projects. It also will have a huge contribution in improving the knowledge transfer practices of ethio telecom offshore outsourced projects.

1.3 Research Questions

The research questions derived from the identified gaps are:

1. Which knowledge transfer practices are not established in ethio telecom?
2. What are the challenges of knowledge transfer in ethio telecom project units?
3. What are the factors that influence knowledge transfer in offshore outsourced telecom projects?

1.4 Research Objective

The general objective of this study is to examine the practices, challenges and factors of knowledge transfer in offshore outsourced projects at ethio telecom.

The specific objectives of the study are;

- Assess the practice of knowledge transfer at ethio telecom.
- Assess factors that influence knowledge transfer in offshore outsourced ethio telecom projects.
- Investigate the challenges in project units.
- To provide suggestions to problems identified in the study, if any?

1.5 Significance of the study

More than ever, organizations are establishing close links and building connections with outside organizations and business partners in order to transfer new knowledge and skills and learn from the experience of others. However, knowledge transfer in outsourcing projects is a challenging process, and many organizations have not realized the expected significant benefits.

Therefore, this study has a huge importance in contributing towards a better and inclusive understanding of the practices, challenges and factors of knowledge transfer by giving special attention to offshore outsourced projects in telecom sector. It also enables to create a new proposition that can contribute to existing theory by incorporating unnoticed

practices, challenges and factors. Most of all, it will have great benefit in terms of improving the knowledge transfer practice in ethio telecom's outsourcing projects.

1.6 Scope of the study

The scope of this study is bound to investigating the practices, challenges and influencing factors of knowledge transfer in ethio telecom outsourcing projects. The challenges that will be emphasized include; lack of organizational readiness, organizational politics, organizational culture, national culture and language barrier. Besides these, the factors of knowledge transfer that will be examined comprise; client related, vendor related, transfer mechanisms and knowledge complexity. On top of this the major knowledge transfer practices of ethio telecom including strategies; knowledge transfer processes, Knowledge transfer policies and procedures, use of technology and structural fittingness will be covered.

This study focuses on knowledge transfer rather than perusing the entire knowledge management practice (capturing, storing and sharing). The emphasis of knowledge transfer is on disseminating important knowledge from vendors to ethio employees in a scalable, measurable way, such that vendor's unique wisdom and information is absorbed by ethio workforces. In other words, knowledge transfer results in the assurance that knowledge has accurately moved and been absorbed. It lays the foundation for knowledge capturing, storing and sharing within the company.

The study is a descriptive study and doesn't examine the relationships and cause-effect interactions between any of the factors mentioned above. Moreover, the study will be conducted only in Addis Ababa where a number of projects were undertaken. The specific projects that are being considered for this study include; wireless project, fixed line project, IS project and transmission project.

1.7 Limitation of the study

The main limitation of this research is that data collection is bound to only one telecom service provider. In this regard, it might be difficult to make generalizations to all telecom sector based on the findings of just ethio telecom. Restricting the sample population to Addis Ababa is another limitation of this study which is mainly associated with time restrictions and accompanied cost consequences. Moreover, the use of one data collection instrument in study is also another drawback to support arguments by use of triangulation.

1.8 Definition of terms

Terms here are conceptually and operationally defined for better understanding of the readers.

Offshore Outsourcing - the practice of hiring an external organization to perform some business functions ("Outsourcing") in a country other than the one where the products or services are actually developed or manufactured ("Offshore")

Turnkey - involving the provision of a complete product or service that is ready for immediate use

Knowledge - facts, information, and skills acquired by a person through experience or education

Vendor: A business entity who provides goods or services to a company or individuals

Barriers: An obstacle that prevents communication or progress of knowledge transfer.

1.9 Organization of the study

The study is divided into five chapters. Chapter one is the general introductions, which include background to the study, statement of the problem, research questions, objectives of the study, significance of the study, scope and limitations of the study, definition of key terms and organization of the study.

The second chapter presents review of the relevant literature on factors that affect knowledge transfer in outsourcing projects. The third chapter provides the methodology

used in obtaining the data including research approach, research design, population and sample, data source and types, data collection procedure and data analysis.

The fourth chapter presents the analysis of data and accompanied discussions and interpretations of data. Then the fifth chapter gives the conclusion and the recommendations of the study in-line with the findings.

Chapter 2. Literature Review

2.1 Outsourcing Background

Outsourcing of telecom network projects has become an emerging trend among global companies that seek new technologies and services from offshore vendors. One of the key issues in this kind of environment is the transfer of knowledge from vendors to client organizations. In recent years client organizations has begun to forge a shared understanding through which the transfer of knowledge becomes possible (Rai and Tang, 2010). Knowledge Transfer (KT) is an important process where an organization identifies and learns from specific knowledge which exists in another organization or in its different parts (Achara Khamaksorn et. al, 2016).

In the case of telecom operators, it is observed that the basic set of parameters influencing the decision of outsourcing is same as rest of the industry (Sunil Patil and Y.S. Patil, 2014). There are a number of drivers that have significant influence on the decision of outsourcing in the telecom sectors. Although cost reduction was the key driver in early stages, over a period of time factors such as risk sharing, revenue sharing, flexibility in control, nurturing innovations, acquiring required competencies, and maintaining competitive edge have assumed high level of importance in the decision of outsourcing services (Sunil Patil and Y.S. Patil, 2014).

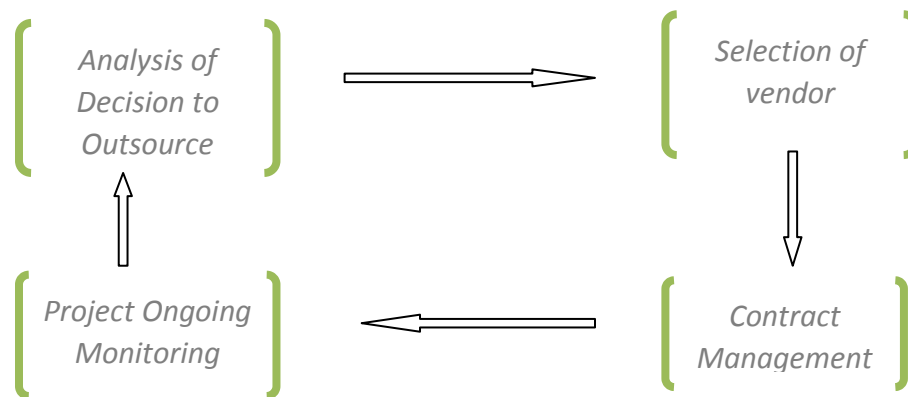
Due to the emergence of state of the art technologies in the business environment, organizations have always been interested in enhancing capability, optimizing cost and building good supplier relationships. Thus, in order to handle any kind of organizational work and to get involved in innovation activities, companies need to increase employee's capability through knowledge transfer during outsourcing projects. Otherwise, companies will stay dependent on vendors for the foreseeable future. The corporation that results from outsourcing may enable an organization to be a world-class performer for a whole suite of products and services where it could only be an average performer by itself (Tibor Kremic, Oya Icmeli Tukel, Walter O. Rom, 2006).

2.2 Outsourcing ICT Projects

outsourcing arrangement of Information Communication Technology (ICT) projects involves shifting some or all of the ICT related decision making autonomies, business processes, network infrastructure developments, internal operations and services to external providers who develop, install, and administer these activities in accordance with the deliverables, performance standards and outputs, as agreed in a project contractual agreement. Most firms in the area of ICT sector outsource their software application services delivery, ICT infrastructure development and security policy consulting activities.

In spite of the varying sorts of outsourcing approaches, the outsourcing process or cycle remains the same. The generic conceptual phases of ICT outsourcing cycle comprises of; the analysis of decision to outsource; selection of Service Providers; contract management and project on-going monitoring (S. R. H. S. Aris, N. H. Arshad, and A. Mohamed, 2008). Outsourcing of ICT projects plays a significant role in reducing operational costs, accessing highly skilled labor, reducing execution duration and improving the efficiency of their ICT services. However, it can also bring a potential risk that must be recognized and managed effectively. One of the most common and critical risk that needs special attention is information security risk.

Figure 2-1 Generic ICT Outsourcing Cycle



Source: Aris N. H. Arshad and A. Mohamed (2008)

2.3 Knowledge

Knowledge has become an area of rising interest in organizations and a source of competitive advantage. It involves awareness or understanding on facts, information, descriptions, or skills, which are attained either through experience or education by perceiving, discovering, or learning.

According to Ikujiro Nonaka and Hirotaka Takeuchi (1995), there are two types of knowledge: explicit knowledge, contained in manuals and procedures, and tacit knowledge, learned only by experience, and communicated only indirectly, through metaphor and analogy. Knowledge that helps an organization do its job is the combination of written knowledge (explicit knowledge), and the knowledge that is presently in the mind of the knower (tacit knowledge) (Roy Lubit, 2001).

The combination of written and experience-based knowledge is critical to achieving organizational missions. As mentioned earlier, knowledge that can be explicitly recorded or documented for collection is known as explicit knowledge and, knowledge that exists in the mind of the individual possessing it is known as tacit knowledge.

Organizations can realize the full value of their knowledge assets only when they can be effectively transferred between individuals. Based on the work of Nonaka and Takeuchi (1995), the following four processes are commonly used by organizations for knowledge conversion:

1. Socialization: sharing of experiences through observation, simulation and practice. It generally occurs through workshops, seminars, apprenticeships, and conferences.
2. Capture: the conversion of tacit knowledge (e.g. what one learned at a workshop) into explicit form (e.g. written report).
3. Dissemination: the copying and distribution of the explicit knowledge.
4. Internalization: process of experiencing knowledge through an explicit source, i.e. one can combine the experience of reading the workshop report with previous experiences

2.3.1 Tacit Knowledge

Tacit knowledge is a kind of knowledge that is stored in the heads of people. It is usually accumulated through a variety of study and experiences. The development of tacit knowledge is realized through the process of interaction with other people or individuals. Due to this, tacit knowledge generally grows through the practice of trial and error and the experience of success and failure. However, since tacit knowledge is built on experience and is stored in the mind of the apprehender, it needs exchange of ideas between individuals concerning a specific matter for it to be transferred properly.

According to Nonaka I. and Takeuchi H. (1995), tacit knowledge, is context-specific and is difficult to formalize, record, or articulate. It includes subjective insights, instincts and inferences. As intuitive knowledge, it is difficult to communicate and articulate. Besides, since tacit knowledge is highly individualized, the degree and facility by which it can be shared depends to a great extent on the ability and willingness of the person possessing it.

The sharing of tacit knowledge is a great challenge to many organizations. Tacit knowledge can be shared and communicated through various activities and mechanisms. Activities include conversations, workshops, on-the-job training and the like. Mechanisms include, among others, the use of information technology tools such as email, groupware, instant messaging and related technologies.

2.3.2 Explicit Knowledge

According to Nonaka and Takeuchi (1995), explicit knowledge is formal and systematic knowledge that is easily communicated and shared, like a specification document. Explicit knowledge can be transferred by storing it in a storage space, like a flash drive, where the receivers can access it easily.

Likewise, explicit knowledge can be documented and recorded easily. Collecting corporate lessons learned across an organization and storing the knowledge in information technology systems can be an effective method of capturing explicit knowledge for continuity. This mainly true in the case of outsourcing, where the vendor has to leave the client after a project has ended. In this case, their knowledge needs to be

in explicit format; otherwise the maintenance personnel will not be able to utilize it. In addition, even if the vendors do not leave the company right after a project has ended; there is still a risk that critical knowledge escapes the company in case the vendors have to leave at some point. Therefore extensive documentation is required to be written in projects.

According to Marjaana Liukkonen (2014), explicit knowledge is usually transferred from project teams to maintenance teams through documentation. Because tacit knowledge transfer to maintenance personnel starts late in the project, most of the knowledge is transferred at once at the end of the project. With the pressure to finish the implementation of projects before the end of the project, writing maintenance documentation can get a low priority, which again makes it likely that the maintenance documentation will be lacking.

2.4 Knowledge Transfer Process and Systems

The process of knowledge transfer can be considered as quite multifaceted. Based on reviews of previous literatures, it is clear that there are different theoretical approaches to knowledge transfer process: the communication model founded on the notions of Shannon (1948), the knowledge spiral model proposed by Nonaka and Takeuchi (1995), the general model proposed by Suzulanski (2000) and the Knowledge transfer process model for outsourcing projects proposed by Voigt (2007). In the following sections the generic models (communication model and the spiral model) will be explained briefly.

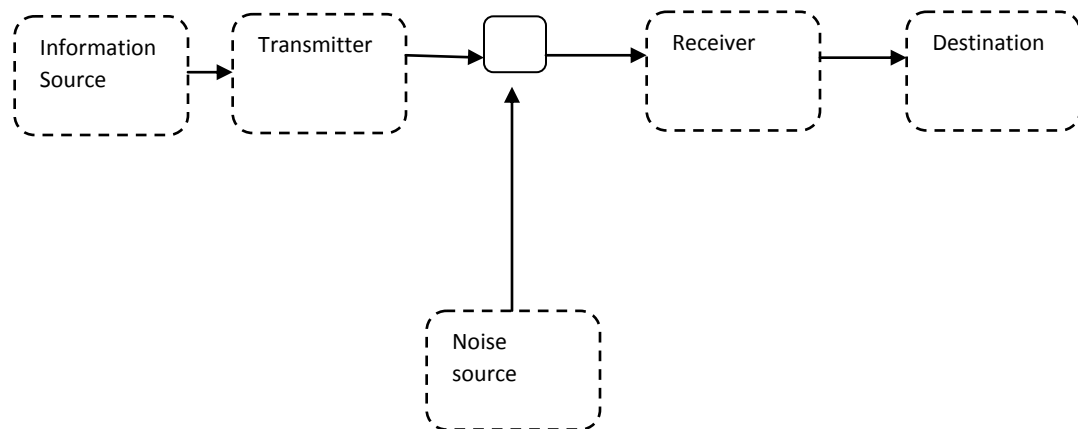
2.4.1 Communication Model

According to the notion of Shannon (1948), the communication model involves communication system consisting of five essential parts as presented below:

- Information source: the information source is the one which produces the sequence of messages to be communicated to the receiver terminal.
- Transmitter: the transmitter refers to a system that produces transmittable information.

- Channel: it is a medium responsible for transporting information from the transmitter to the receiver.
- Receiver: the receiver ordinarily performs the inverse operation of that done by the transmitter, reconstructing the message from the signal.
- Destination: It is the person or thing for whom the message is intended

Figure 2-2 Shannon's Communication Model



Source: Shannon (1948)

The knowledge transfer process can be influenced by the occurrence of noise. Generally, noise can be anything that hampers the transmission of the message. The more differences between the information source and the destination, the more likely that the received message deviates from the original message.

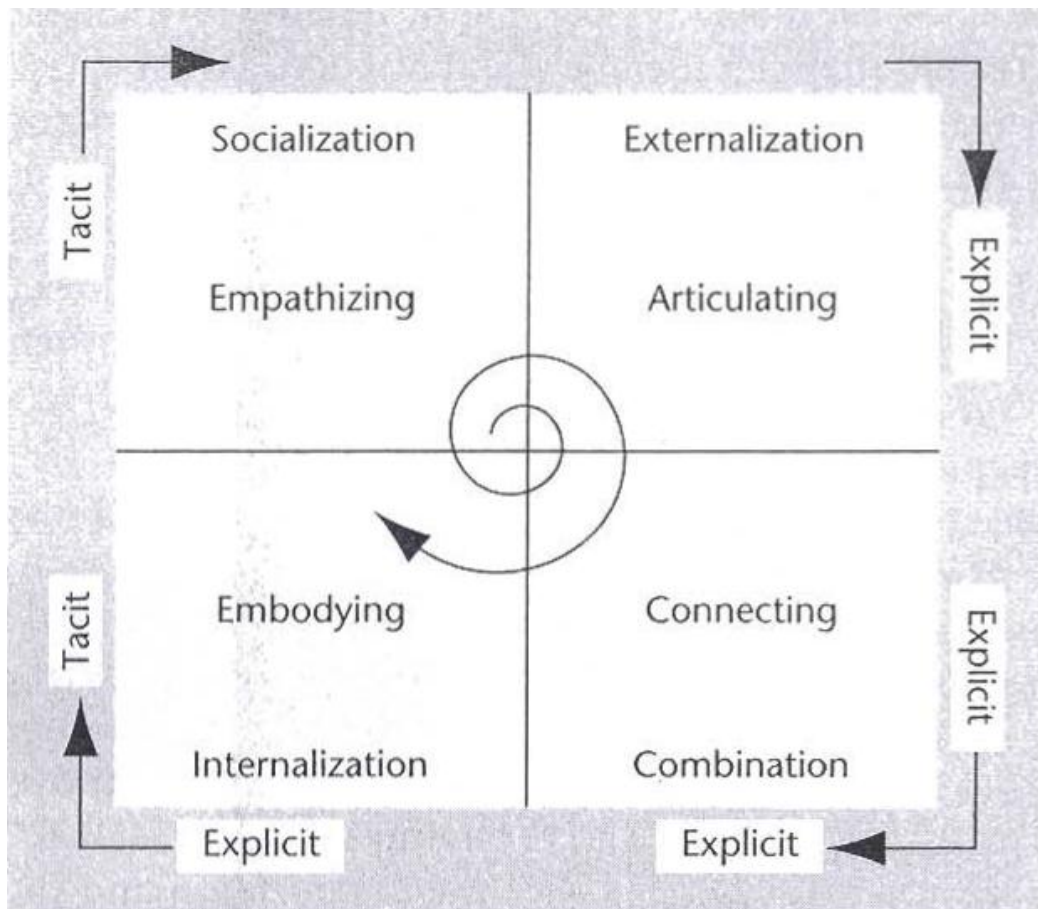
2.4.2 The Spiral Model

The process of organizational knowledge creation is not limited to the organization; it includes many interfaces with the environment as well. Firms acquire knowledge from outside sources such as customers, vendors and competitors and utilize such knowledge to create their own knowledge. Knowledge is created through interactions between individuals or groups with different types and contents of knowledge. It is through this

process of social conversion that the quality and quantity of both tacit and explicit knowledge expand (Nonaka and Takeuchi, 1995).

According to Nonaka and Takeuchi's (1995) theory of knowledge creation, there are four distinct modes of knowledge conversion process: (a) Socialization (from tacit knowledge to tacit knowledge), (b) Externalization (from tacit knowledge to explicit knowledge), (c) combination (from explicit knowledge to explicit knowledge), (d) Internalization (from explicit knowledge to tacit knowledge). Figure.2-3 below shows the spiral model of knowledge creation proposed by Nonaka and Takeuchi's (1995).

Figure 2-3 Spiral Model of Knowledge Creation



Source: Nonaka and Takeuchi's (1995)

Socialization

Socialization is the process of bringing together tacit knowledge through shared experience. Since tacit knowledge is context-specific and difficult to formalize, the key to

acquiring it is to share the same experience through joint activities. Without some shared experience, it is extremely difficult for one person to project himself into another individual's thinking process.

Externalization

It is the process of articulating tacit knowledge as explicit knowledge. Out of the four modes of knowledge conversion, externalization is the key to knowledge creation because it creates new explicit concepts from tacit knowledge. When tacit knowledge is made explicit, knowledge becomes crystalized, at which point it can be shared by others.

Combination

Combination is the process of connecting discrete elements of explicit knowledge into a set of explicit knowledge that is more complex and systematic than any of its parts. Knowledge is exchanged and combined through such media as documents, meetings, telephone conversations and computerized communication networks. The reconfiguration of existing knowledge through sorting, adding, combining and categorizing can create new knowledge.

Usually combination comprises of three processes. First, explicit knowledge is collected from inside and outside the organization and then combined. Second, the new explicit knowledge is disseminated among the organizational units. Third, the explicit knowledge is edited or modified within the organization in order to make it more usable.

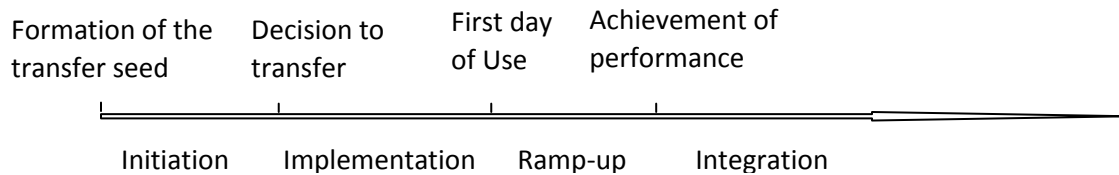
Internalization

It refers to the process of embodying explicit knowledge as tacit knowledge. It is closely related to learning by doing. Through internalization, knowledge that is created is shared throughout an organization. It helps to broaden, extend, and reframe organizational members' tacit knowledge. When knowledge is internalized in individuals' tacit knowledge bases through shared mental models or technical know-how, it becomes a valuable asset.

2.4.3 The general Knowledge Transfer Model

The general knowledge transfer model by Suzlanski (2000) contains four phases: initiation phase, implementation phase, ramp-up phase and Integration phase. Figure 2-4 below shows the knowledge transfer model proposed by Suzlanski (2000).

Figure 2-4 General Knowledge Transfer Model



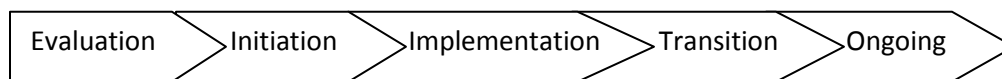
Source: Suzulanski (2000)

According to Suzlanski's model, the initiation phase determines the source and recipient of knowledge. And accordingly, a plan is established regarding the kind of interaction and media of interaction. During the implementation phase, the source and recipient of knowledge go through knowledge exchange and transfer activities. When the implementation phase is completed, the process enters into the ramp-up phase where the recipient takes over work from the source. The final phase, integration phase, is the phase where the knowledge receiver would transfer knowledge to his or her peers.

2.4.4 Process Model for Knowledge transfer in outsourcing

In this model proposed by Voigt et al. (2007), there are five phases; Evaluation, Initiation, Implementation, Transition and Ongoing phases. Figure 2-5 below shows the process model for knowledge transfer in outsourcing.

Figure 2-5 Process Model for Knowledge Transfer in Outsourcing



Source: Proposed by Voigt et al. (2007)

As per the notion of Voigt et al. (2007) which builds on the suzlanski model of knowledge transfer (2000), the evaluation and initiation phase include planning activities for the subsequent implementation and transition phase activities. The evaluation phase is used to judge the knowledge provider or source according to its knowledge transfer capabilities and knowledge management capabilities. On the other hand, the initiation phase involves activities such as demand analysis, knowledge identification and skill assessments. During the implementation phase, knowledge portals and document exchanges are used to a great extent by both parties. This is the phase where document standards and information integration are applied. The last phase, the transition phase, involves a gradual shift in responsibility from the source to the recipient. The process often follows a formal plan and concludes with sign-off milestone.

2.5 Tools for Knowledge Transfer Process

It is becoming vital to understand how to facilitate and improve the process of knowledge transfer in order to equip all workers with the right knowledge and to make them ready for usage and application of the knowledge. Knowledge transfer can efficiently work only in the case when right tools of communication are used and when they are used in the right environment and context. In addition to knowledge management, there are different tools which can be used to facilitate knowledge transfer process. Some of the most commonly employed tools include;

Information Technology (IT) Tools

Since knowledge is largely tacit and individually owned, it is difficult to have control over it. To exploit knowledge more efficiently organizations need to codify and store the individual's knowledge. This involves making tacit knowledge explicit and transposing individual knowledge into organizational knowledge. These transformation processes have been made possible through ICTs. The commonly used IT tools include;

Data management tools:

Data management tools comprise of data warehouses, data search engines, data modeling and visualization.

Information management tools:

Information management tools comprises of automated information search and retrieval agents, decision support technologies, executive information systems, and document management technologies.

Information communication tools:

The most commonly used information communication tools include computers, the internet, telecommunication, and conferencing tools.

Supplemental Knowledge Transfer Tools

The most common supplemental knowledge transfer tools include;

Smart hiring and management processes:

Some of the commonly used tools in this category include; dual term of office, Job shadowing, job rotation and Cross-training.

Person-to-person strategies:

The familiar person-to person strategies used to enhance knowledge transfer comprises of Coaching, mentoring, structured on-the-job training, Boot camps, knowledge fairs, meetings, conferences and Communities of practice

Documentation:

Documentations such as Job aids (manuals, desk guides, etc.), Critical incident review, storytelling, best practices and Document repositories are essential to improve knowledge transfer.

2.6 Knowledge Transfer

In most of the literature, knowledge transfer is treated as a universal practice, which is transferable from one country or company to another. In organizational theory, knowledge transfer is the practical problem of transferring knowledge from one part of the organization to another. Like knowledge management, knowledge transfer seeks to organize, create, capture or distribute knowledge and ensure its availability for future users.

There are two main types of knowledge that are often transferred from vendors to clients in ICT outsourcing projects: technical knowledge and business knowledge. Technical knowledge is usually associated with hardware and software technologies expertise that is used to translate business needs into a practical outcome. This involves knowledge such as programming, operating, configuring, maintaining and testing. In contrast, business knowledge is defined as a set of knowledge that enables professionals to understand the business domain, speak the language of business and interact with other business partners. This involves knowledge such as planning, project management, contract negotiation and risk assessment.

2.7 Challenges of Knowledge Transfer in Outsourced ICT projects

Though all knowledge transfer faces some obstacles, knowledge transfer in offshore outsourced ICT projects faces extra challenges due to cross-cultural, political, language, and relationship gaps. Knowledge transfer is often seen as resulting in a loss of power, and as a result knowledge that should be transferred is often withheld by vendors, leading to inefficiency in client organizations.

When organizations engage in inter-organizational knowledge transfer, they open their borders to flows of information and knowledge from external networks; sophisticated knowledge codification techniques allow knowledge sharing among organizations, even competitors strategic alliances, multi-national and transnational enterprises, and international projects (Yanqing Duan, Wanyan Nie and Elayne Coakes 2010). Transnational knowledge transfer has a challenge: its participants are often separated by time, space, culture, politics and language which may limit their ability to access, share, and absorb knowledge effectively.

There are different challenges that can prevent transnational knowledge transfer between offshore vendors and clients in information communication technology projects such as; organizational readiness, organizational culture, national culture, organizational politics, language barrier and relationship between vendors and clients.

Without a suitable infrastructure and organizational readiness, the successful implementation of KM is impossible. Moreover, organizational readiness for KM implementation includes the organizational capability to adopt and use of its advantages (Sepideh Shahidi, Neda Abdolvand and Saeedeh Rajaei Harandi 2015).

According to Sepideh Shahidi et al. (2015), successful implementation of knowledge transfer depends on organizational culture, development of suitable infrastructure, incorporate knowledge management system to organizational processes and information systems (IS); organizational structure; senior management support and organizational commitment.

In organizational behavior science, organizational politics is defined as “those activities carried out by people to acquire, enhance, and use power and other resources to obtain their preferred outcomes in a situation where there is uncertainty or disagreement”. Usually this kind of behavior shades its own shadows on individual’s knowledge transfer activities and can impact the organization as whole.

According to Marjaana Liukkonen (2014), it could be challenging to form a good relationship system between parties with in or between firms and it can prove to be a daunting task due to their lack of experience in working together. This is usually true in a project environment where a new vendor is involved.

2.8 Factors Influencing Knowledge Transfer

Although knowledge transfer has been recognized as one of the critical success factors in outsourcing, there is currently no work systematically reporting on how knowledge transfer is and can be managed in the firms involved in outsourcing relationships (Ben Voigt et al., 2007). Thus it is noticeable that there is lack of systematic approach in most organizations in relation to reporting and managing knowledge transfer in firms having outsourcing relationships with vendors. How firms can design, manage and support

knowledge transfer as a strategic goal of their outsourcing relationships is one of the most influential factors in knowledge transfer.

According to Jo Rhodes et al. (2008), whilst knowledge transfer is a major strategy for managing contemporary organizations, the impact of the key factors influencing the rate of organization knowledge transfer is relatively unknown. The study findings indicated that out of the particular organizational factors considered, IT systems had the most significant impact on organizational knowledge transfer followed by a structured learning strategy, and an innovative organizational culture. It is also noted that personalized (tacit) knowledge transfer had a strong influence on innovative capabilities development.

Anna Wiewiora et al. (2012), on the other hand, stated that effective knowledge transfer can prevent the reinvention of systems and ideas as well as the repetition of errors. Doing so will save substantial time, as well as contribute to better performance of projects and project-based organizations (PBOs). Findings of the empirical study show that barriers of knowledge transfer are classified into three main categories; Barriers related to social communication, Barriers related to inter-project transfer of documented lessons learned, Barriers related to project manager. As per the study finding, lack of time was noted the most frequently barrier in knowledge transfer. It is noted problem related to time cannot be simply fixed by allocating extra time for knowledge transfer activities, because time in projects is limited due to their temporary existence. PBOs must search for other solutions to empower knowledge transfer, perhaps by improving social communication, including requirements for documenting and transferring lessons learned in the project scope and budget, and by deploying PMOs formed of experienced practitioners who will provide expertise for projects, and link projects across an organization.

Trust among individuals, members of the team, project culture, values and the beliefs of the individuals and motivation of those involved in the project, both intrinsic and extrinsic also play vital role in knowledge transfer (Ionel NĂFTĂNĂILĂ, 2010). In order to overcome the barriers affecting the knowledge transfer process, project managers must

create an environment where knowledge workers must feel free to share and re-use their knowledge.

Zahran Al-Salti (2010) attempts to provide a synthesis of existing theoretical perspectives and empirical findings related to the factors that facilitate or hamper knowledge transfer success in IS outsourcing. According to the findings, there are four set of factors hindering IS outsourcing projects: knowledge-related, recipient-related, source-related and relationship-related that facilitate or inhibit knowledge transfer success.

Eckl V.C (2012) of knowledge between organizations with special focus on firm size. The findings of investigation indicate that the dominance of large enterprise in knowledge creation might become a barrier of knowledge transfer to small and medium enterprises if there is no value chain integration.

Ross Powera and Kathryn Cormicana (2015) presented five critical success factors critical to effective knowledge transfer i.e. (a) trust, (b) rewards, (c) communication, (d) leadership and (e) motivation.. These success factors are a synthesis of best practice in the area and useful to support the management of the knowledge transfer process. The findings show that all of these factors facilitate or hinder knowledge transfer in one or another way.

Similarly, Ganza Tresor Bigabwa et al. (2015) provided an overview of the research regarding different issues of knowledge transfer in project-based organization. It is a meta-analysis of some research done in leading journals over the last decade. The findings indicate that none of the issues discussed are in itself sufficient for successful knowledge transfer even if they yielded a valuable understanding of this developing topic. It implies that successful knowledge transfer and its management are inherently complex processes and needs further investigation in terms of identification of additional factors and devising a new conceptual framework.

Overall analysis of the literature reveal that there are mainly five sets of factors that facilitate or hamper knowledge transfer success in IS outsourcing: knowledge-related, recipient-related, source-related, relationship-related and transfer media related.

2.8.1 Knowledge-related Factors

The nature and the characteristics of the knowledge being transferred have been recognized as important factor that impact effectiveness of knowledge transfer. There are three major factors associated with knowledge namely; tacitness, complexity and causal ambiguity (Ugur Uygur, 2013). Among these, tacitness is technical or cognitive and is made up of mental models, values, beliefs, perceptions, insights and assumptions. So with the increase of the tacitness of knowledge, there would be difficulty to transfer knowledge effectively.

The complexity of knowledge has also been viewed as a major obstacle to the effectiveness of knowledge transfer. Knowledge complexity refers to the number of interdependent practices, persons, technologies and resources associated with a specific knowledge. Due to complexity of knowledge, it would also be difficult for it to be communicated between the source and the recipient. Usually complex knowledge involves transfer of greater amount of information compared to simple knowledge. Thus, complexity of knowledge directly influences knowledge transfer.

Similarly, Timbrell et al. (2001) studied the characteristics of knowledge in IS outsourcing projects in Australia and found that knowledge with high causal ambiguity is more challenging and much harder to transfer than less ambiguous knowledge. It can be concluded, therefore, that the greater the ambiguity of the causes and effects of the knowledge, the more difficult is to identify the related knowledge elements and subsequently the chances of transferring the knowledge are limited.

2.8.2 Vendor-related Factors

Vendors working on offshore outsourcing projects show various behaviors and characteristics that hinder knowledge transfer. The three factors that are identified in this set are vendor capability, vendor credibility, and vendor willingness towards knowledge transfer.

The outsourcing vendor is often expected to have the capability in terms of owning state of the art technologies, having latest hardware and software products, and retaining and recruiting competent employees. However, this is not the case in most outsourcing

vendors. Therefore lack of capability in the vendor's side will hinder effective knowledge transfer significantly.

Likewise, vendor's credibility is another influential factor in the transfer of knowledge management. Credibility is the extent to which a recipient perceives a vendor to be trustworthy and honest. A culture of mutual trust and assistance encourages team members to depend on one another and the information they share, thus increasing the likelihood that they will communicate openly and effectively to achieve their shared goals (Mian M. Ajamal et al. 2008).

The success of knowledge transfer is highly dependent on the willingness of the vendors to share their crucial knowledge. Szulanski (1996) claims that a knowledge source's ability and willingness to devote time and resources to support the transfer of knowledge to the recipient is essential for successful knowledge transfer.

2.8.3 Client-related Factors

The nature and characteristic of the client is also another factor that plays a role in the transfer of knowledge from the source to the receiver. As it is mentioned above, the success of knowledge transfer not only depends on the vendor to provide the necessary knowledge, but also on the ability of the client to absorb and utilize the transferred knowledge (Steensma and Lyles, 2000). Clients absorption capability, motivation and learning intent are the most critical factors affecting effective knowledge transfer.

Literature emphasizes that the presence of learning intent in the recipient organization is the first step towards effective knowledge transfer and learning (Tsang, 2002). Learning intent is defined by Tsang (2002) as the level of desire, will and actual commitment of the recipient with respect to learning and transferring knowledge from the source. If the recipient has the intent to learn and acquire knowledge possessed by the source, it will be better prepared psychologically to understand and assimilate the required knowledge (Easterby-Smith et al., 2008a).

On the other hand, the stronger the motivation to learn, the more likely it is that individuals will work harder on trying to learn and pick up new knowledge. Xu and Ma (2008) examined the key determinants of knowledge transfer success in ERP

implementation and suggest that the stronger the motivation to learn, the more likely it is that individuals will attempt to use and master new external knowledge.

Another factor found to influence knowledge transfer success is absorptive capacity. Absorptive capacity is defined as the ability of individuals to successfully replicate new knowledge (Wenpin Tsai, 2001). In addition to having the necessary learning intent, recipient organizations should also need to have sufficient absorptive capacity to absorb new knowledge gained from external sources.

2.8.4 Relationship Factors

At the heart of all knowledge transfer processes is a relationship between different stakeholders in a knowledge base institution. According to Szulanski (1996), knowledge is difficult to spread across different units within an organization in which preexisting relationships among units are absent. Therefore, the existence and nature of relationship and interaction between individuals of the client and the vendor organizations can impact the effectiveness and the success of knowledge transfer.

2.8.5 Transfer Mechanism

This set represents the channels that are utilized to transfer knowledge from the vendors to the clients. Knowledge transfer is only possible with formal and informal mechanisms that integrate, interpret and share knowledge anchored in individuals or groups of individuals (Sylvain Goyette et al., 2014).

2.9 Gap in Literature

Literature review has exposed the existence of a gap in literature regarding practices, challenges and factors in offshore outsourced projects. Below are stated the main gaps identified from literature review.

The first gap in the literature is the absence of comprehensive enquiry to identify the key practices, challenges and factors that facilitate or hinder knowledge transfer. Previous researches have focused on the type of knowledge transferred, the source itself, the

recipient and the relationship between the source and the recipient. However, there are relatively few or no researches focused on organizational practices, organizational readiness, organizational politics, national culture differences, organizational culture, incentives schemes, language barriers between the client and the vendor, informal contracts and lack of formalized knowledge transfer approaches. The researcher couldn't find any study that has examined all or part of these factors simultaneously in the context of outsourcing projects.

Secondly, the researcher has found that almost all of the studies on factors hindering knowledge transfer are done in the context of information systems and information technology organizations. There are a few-if any at all-studies that have been done on telecom projects. Even out of reviewed researches in IS/IT outsourcing projects, only a few are focused on the public sector.

Most studies are also relied on inputs of clients and don't address the views of vendors in their investigations. However, this study will take into account the insights of suppliers and clients in order to come up with all inclusive examination of the issue.

Another important gap identified in this review is that, to the best of the researcher's knowledge, there are no prior studies in Ethiopia context focused on practices and challenges of knowledge transfer in offshore outsourced projects especially in telecom sector.

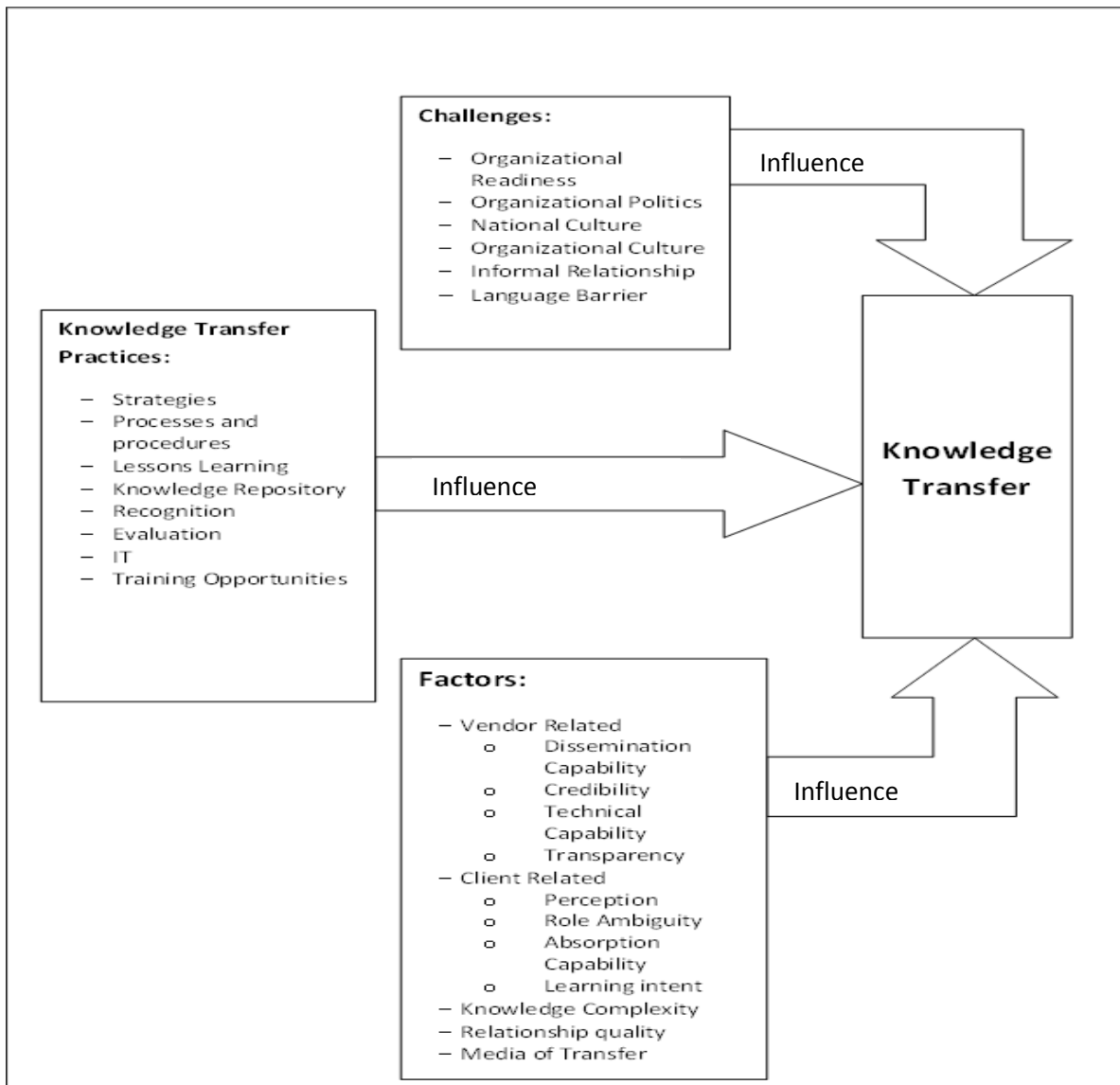
Therefore, this study can contribute to current theory by closing the aforementioned literature gap and provide an in-depth investigation and analysis by building on what has been done in previous studies. It also will help in exposing the current practices, challenges and factors of knowledge transfer in ethio telecom outsourcing projects for further action.

2.10 Preliminary Conceptual Framework

On the basis of the literature review presented above and the preliminary investigation on current practices, challenges and influencing factors, a preliminary conceptual model for knowledge transfer in an outsourced project is proposed by the present study. As shown in

Figure 2-6 below, the proposed preliminary model consists of eight different set of practices, six different set of challenges and eleven set of influencing factors.

Figure 2-6 Preliminary Conceptual Model of practices, challenges and factors influencing KT



Source: Own preliminary investigation

Chapter 3. Research Methodology

3.1 Research Approach

A quantitative research approach was employed to empirically measure the practices, challenges and factors of effective knowledge transfer in offshore outsourced projects of ethio telecom. The intent was to establish and validate the practices, challenges and factors influencing knowledge transfer and recognize obstacles in order to develop generalizations that contribute to project practices.

3.2 Research Design

Descriptive research design was used in order to understand the practices, challenges and factors affecting knowledge transfer in telecom offshore outsourced projects. Survey method was used to assess opinions and perceptions of project employees by use of rational reasoning, where the researcher forms a research question, collects data in an investigation of the problem, makes analysis and formulates conclusions. Accordingly the data from the investigation was used to answer the initial research questions.

3.3 Data sources and types

The data sources used in this study were project employees of ethio telecom working in different project units of the telecom expansion project (Wireless, Transmission, Fixed line, Information systems) and vendors' project staffs working in the same project. Employees working at different positions of the project were involved including project staffs, coordinators and project managers. The study was limited to Addis Ababa where a range of projects were undertaken.

3.4 Population and sample

The population for this study consists of ethio telecom, Huawei and ZTE project staffs working at different hierarchies including project staffs, coordinators, project managers and program managers. Convenience sampling technique was used to select project managers, coordinators and staffs from various project units in Addis Ababa. Project

performers were chosen as target population because of their involvement in project activities and operational tasks in the matrix based project organizational structure.

A survey research method was used to collect information about the selected sample population. The total target population size with in Addis Ababa area was around 250. Based on a 5% margin of error and a 95% confidence interval, the sample size was found to be 90. Table 3-1 hereunder shows the distribution of the target population and sample population.

Table 3-1 Target Population Distribution

Categories	Target Population	Sample Population	Percentage
Ethio telecom	200	72	80%
ZTE	25	9	10%
Huawei	25	9	10%
Total	250	90	100%

Source: Own survey, 2017

3.5 Data collection procedure

Respondents were contacted with the help of a self-administered questionnaire which was delivered in person. Questionnaires were used in this study for collecting opinions and practical experiences of project members from a range of projects including wireless project, fixed line project, transmission project and IS project. This particular instrument was selected due to its efficiency of data collection, cost benefits and time limitations. The survey consisted of closed ended questions that follow a logical progression starting with simple themes and progressing to complex issues to maintain the interests of respondents.

The first page of the questionnaire explained the objectives of the study. In subsequent sections, respondents were asked to use a five-point Likert-type scale to indicate the extent to which influencing factors affect knowledge transfer in their particular project environments.

3.6 Ethical consideration

The major ethical issues considered in conducting this research are:

- **Informed Consent:** A person knowingly, voluntarily and intelligently, and in a clear and manifest way, gives his consent.
- **Do not harm:** It is the professional mandate of the researcher to protect research participants and follow the guiding foundation of “do no harm” if human subjects are utilized in the study.
- **Respect for anonymity:** The subject's identity cannot be linked with personal responses.
- **Respect for privacy:** Private information such as opinions, beliefs and attitudes of individual will not be shared.
- **Fabrication of data:** falsifying of data would be avoided throughout the study to promote the pursuit of knowledge and truth.

3.7 Validity and Reliability

A few of the survey items were adopted from previous research studies and modified to the research sample. In order to verify the content validity, subject matter managers and experts were consulted. Moreover, appropriate time schedule was selected so that all the respondents provided appropriate answers without feeling the burden of time. The kind of instrument selected in this study also provided freedom and autonomy to respondents to express their true feelings. Similarly, the sampling technique employed in this study provides respondents across project lots a chance to participate in this survey based on their freewill.

On the other hand, reliability refers to the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure. In this study, Cronbach's alpha was used to evaluate the internal consistency of the test items.

3.8 Interpretation of Reliability Outputs

The Cronbach Alpha coefficient is an overall index of the scale where a small value implies lower reliability and a higher value indicates a better reliability. A high Cronbach Alpha coefficient can be an acceptable indicator of good internal consistency. Table 3-2 below presents list of related questionnaire items and the associated Cronbach's Alpha coefficient.

Table 3-2 Cronbach's Alpha Coefficient

No	Factor	Items	Cronbach's Alpha Coefficient
1	Organizational Readiness	9,10,11,12,13,14,15,16	0.891
2	Organizational Politics	17,18,19,20,21,22	0.791
3	Organizational Culture	23,24,25,26	0.825
4	National Culture	27,28,29,30	0.793
5	Language Barrier	31,32	0.834
6	Relationship Factor	33,34	0.725
7	Knowledge Complexity	43,44	0.755
8	Formal Knowledge Transfer Mechanism	45,46	0.658
9	Informal Knowledge Transfer Mechanism	47,48	0.648
10	Quality of Relationship	49,50	0.67

3.9 Data Analysis and Presentation

Analysis of the data was done by use of an SPSS 20 statistical analysis tool and all questionnaire items were assessed on a five-point Likert type scale. Descriptive statistics such as frequency, percentage and median were used to answer the research objective.

Key findings were presented sequentially one after the other. Consequently the resulting finding was interpreted, discussed, summarized and presented in the form of narrations, graphs or tables. In addition, presentation of the findings was done without overstating the empirical evidence.

Chapter 4. Results and Discussions

4.1 Introduction

Data is collected through a self-administered questionnaire distributed to respondents in person by use of convenience sampling. The total sample size in this study is 90. The sample distribution among the different target units indicates 72 employees (80%) from ethio telecom, 9 employees (10%) from ZTE Corporation and the remaining 9 employees (10%) from Huawei Co. Ltd. The response rate is 95.83% (69 employees) on ethio telecom side, 100% (9 employees) on ZTE side and 100% (9 employees) on Huawei side. The overall response rate is 96.66%.

This chapter is organized into five parts. The first part presents the demographic characteristics of the respondents. The second part presents results associated with the practices of knowledge transfer. The third part presents results of the challenges of knowledge transfer. The fourth part reveals results of the factors of knowledge transfer. The last part of the chapter compares the extent of practices, challenges and factors based on their mean value as perceived by the respondents.

4.2 Demographic Characteristics of the Respondents

Regarding the male and female distribution of ethio telecom respondents, 60 respondents (86.96%) are males and the rest 9 respondents (13.04%) are females. Correspondingly, 8 male respondents (88.89%) and 1 female respondent (11.11%) from ZTE Corporation and 7 male respondents (77.78%) and 2 female respondents (22.22%) from Huawei Co. Ltd responded to the survey questionnaire.

When it comes to educational background, 79.4% of ethio respondents have first degree, 14.7% have a master's degree and the rest 5.9% have certificate or diploma. Likewise, 66.7% of ZTE respondents have first degree and 33.3% of the respondents have a master's degree. 55.55% of Huawei respondents have first degree and the rest 44.44% have acquired a master's degree.

Regarding departmental composition of ethio respondents, 15.9% are from IS, 20.3% are transmission, 37.7% are from fixed line and 26.1% are from wireless projects. On the

other hand, the departmental composition of ZTE respondents shows that 55.6% are from IS, 33.3% from transmission and 11.1% are from fixed line projects. Similarly, 11.1% of Huawei respondents are from IS domain, 33.3% are from transmission domain, 11.1% are from fixed line projects and 44.4% are from project learning service department.

Table 4-1 below shows the detail demographic characteristics of the respondents:

Table 4-1 Demographic Characteristics of Respondents							
Description		Number			Percentage		
		ethio Telecom	ZTE	Huawei	ethio Telecom	ZTE	Huawei
No of Respondents		69	9	9	95.83%	100%	100%
Age	18-30	14	4	-	20.29%	44.44%	-
	31-40	34	5	9	49.27%	55.55%	100%
	41-50	18	-	-	26.09%	-	-
	50+	3	-	-	4.35%	-	-
Gender Composition	Male	60	8	7	86.96%	88.88%	77.77%
	Female	9	1	2	13.04%	11.11%	22.22%
Educational Background	Diploma	4	-	-	5.8%	-	-
	First Degree	55	6	5	79.71%	66.66%	55.55%
	Master's Degree	10	3	4	14.49%	33.33%	44.44%
Project Lots Composition	Wireless	18	-	-	26.09%	-	-
	IS	11	5	1	15.94%	55.55%	11.11%
	Transmission	14	3	3	20.29%	33.33%	33.33%
	Fixed Line	26	1	1	37.68%	11.11%	11.11%
	Learning Service	-	-	4	-	-	44.44%

Source: Own Survey Result

4.3 Knowledge Transfer Practices

Results found from the survey on the presence of knowledge transfer strategy, processes and procedures, lessons learning, knowledge repository, evaluation, recognition, information technology, and existence of training opportunities are presented and discussed in the following subsections.

Table 4-2 Overall Response Statistics on Practices of KT

Employer		KT Strategy	KT Process	Lessons Learned	Knowledge Repository	Recognition	Evaluation	IT	Training Opport.	
ethio telecom	N	Valid	69	69	69	69	69	69	68	
		Missing	3	3	3	3	3	3	4	
	Mean		2.5362	3.1014	2.8406	2.7391	3.4638	3.0580	2.72	2.8676
	Std. Deviation		1.23169	1.30773	1.19587	1.34659	1.40984	1.40256	1.349	1.24474
vendor	N	Valid	18	18	18	18	18	18	18	
		Missing	0	0	0	0	0	0	0	
	Mean		1.5000	1.7778	1.8889	1.6667	1.9444	1.8333	1.611	1.7778
	Std. Deviation		.51450	.80845	1.23140	1.02899	.93760	.78591	.9785	.94281

Source: Own survey, 2017

The mean values of practices as perceived by respondents show that lack of recognition schemes, lack of clear processes and procedures are the most significant practices affecting knowledge transfer. Training opportunities and adequacy of lessons learned are the second set of practices followed by knowledge repository, IT infrastructure and knowledge transfer strategy.

The standard deviation values also revealed that there is higher level of agreement among respondents on adequacy of lessons learned followed by knowledge transfer strategy, training opportunity, knowledge transfer processes and procedures, knowledge repository, IT infrastructure, evaluation and recognition schemes.

4.3.1 Strategy, Processes and Procedures

4.3.1.1 Knowledge transfer Strategy

As seen from table 4-2, survey results of ethio telecom respondents on existence of knowledge transfer strategy show that 13 respondents (18.8%) agreed strongly, 30 respondents (43.5%) agreed slightly, 8 respondents (11.6%) have a neutral stance. Over a quarter of the respondents (26.1%) have either slightly disagreed or strongly disagreed.

From the above finding, we can understand that majority of ethio’s respondents (62.3%) have either strongly agreed or slightly agreed on the presence of knowledge transfer strategy with in the company. Bearing in mind the importance of knowledge transfer strategy on overall success of knowledge transfer, the existence of a robust strategy lays the foundation from which the company can build on.

The results found from vendors also reveal that half of the respondents (50%) have agreed strongly and the other half of the respondents (50%) have agreed slightly on the existence of knowledge transfer strategy. This result is in line with the finding attained from ethio telecom.

Table 4-3 Group Responses toward Existence of Knowledge Transfer Strategy

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	13	18.1	18.8	18.8
		Slightly Agree	30	41.7	43.5	62.3
		Neither agree nor disagree	8	11.1	11.6	73.9
		Slightly Disagree	12	16.7	17.4	91.3
		Strongly Disagree	6	8.3	8.7	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total	72	100.0			
vendor	Valid	Strongly Agree	9	50.0	50.0	50.0
		Slightly Agree	9	50.0	50.0	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

4.3.1.2 Knowledge Transfer Processes and Procedures

Regarding the presence of knowledge transfer processes, almost one in ten (10.1%) of the respondents in ethio telecom agreed strongly, marginally over 3 in ten (30.4%) respondents agreed slightly whereas 17.4% of the respondents neither agreed nor disagreed. 16 respondents (23.2%) disagreed slightly and the other 13 respondents (18.8%) disagreed strongly.

The above results demonstrate that large part of the respondents (42%) have either disagreed strongly or disagreed slightly on the existence and implementation of processes and procedures within ethio telecom outsourcing projects. Unless established processes and clear procedures are in use throughout the company, it would be difficult to implement knowledge transfer and monitor its performance. Table 4-3 below shows the response distribution among respondents.

On the contrary, 38.9% of respondents from vendors' side agreed strongly on the presence of knowledge transfer processes and procedures. Half of the respondents (50%) agreed slightly and another 1 respondent (5.6%) neither agreed nor disagreed. The remaining 1 respondent (5.6%) disagreed slightly on this query.

Table 4-4 Group Response towards Presence of Knowledge Transfer Processes and Procedures

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	7	9.7	10.1	10.1
		Slightly Agree	21	29.2	30.4	40.6
		Neither agree nor disagree	12	16.7	17.4	58.0
		Slightly Disagree	16	22.2	23.2	81.2
		Strongly Disagree	13	18.1	18.8	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total	72	100.0			
vendor	Valid	Strongly Agree	7	38.9	38.9	38.9
		Slightly Agree	9	50.0	50.0	88.9
		Neither agree nor disagree	1	5.6	5.6	94.4
		Slightly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

As seen from the above results, it is clear that findings found from ethio telecom are somewhat different from what is reported by vendors. The difference in judgment between these two groups might account to either lack of accurate information regarding working processes and procedures within ethio telecom or limited understanding of ethio's internal processes and procedures.

4.3.2 Lessons Learning & Project Knowledge Repository

4.3.2.1 Lessons Learning

As illustrated in table 6, the survey outcome on adequacy of lessons learned reveals that over ten percent (10.1%) of ethio telecom respondents agreed strongly, 37.7% of the respondents agreed slightly, 21.7% of the respondents neither agreed nor disagreed, and 18.1% of the respondents disagreed slightly whereas 11.1% of the respondents disagreed strongly. Based on this, it is clear that large part of ethio telecom employees (47.8%) feel that lessons learned are documented adequately.

On the other hand, 44.4% of vendors' respondents agreed strongly, 44.4% of the respondents agreed slightly on the matter, while the rest 11.1% disagreed strongly. Table 4-4 depicts the response distribution among vendor employees;

Table 4-5 Group Responses towards the Practice of Capturing Lessons Learned

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	7	9.7	10.1	10.1
		Slightly Agree	26	36.1	37.7	47.8
		Neither agree nor disagree	15	20.8	21.7	69.6
		Slightly Disagree	13	18.1	18.8	88.4
		Strongly Disagree	8	11.1	11.6	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	8	44.4	44.4	44.4
		Slightly Agree	8	44.4	44.4	88.9
		Strongly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

The outcome from both ethio telecom and vendors expose that lessons learned are documented appropriately in order to capture project best experiences. Particularly in the case of ethio telecom where infrastructure projects are huge in size, lack of adequate lessons from previous projects would have led to failures in terms of extended schedules and cost overruns.

4.3.2.2 Knowledge Repository

When it comes to the practice and use of knowledge repository, almost one in five (20.3%) of the respondents from ethio telecom agreed strongly, nearly four in ten (31.9%) of the respondents agreed slightly, over fourteen percent (14.5%) of the respondents neither agreed nor disagreed, almost one in five (20.3%) of the respondents disagreed slightly whereas 13% of the respondents disagreed strongly. The results show that most respondents (52.2%) either strongly agreed or slightly agreed on the use of knowledge repository to enhance project knowledge transfer.

In the same way, responses from vendors reveal that 57.1% of the respondents agreed strongly, 21.4% agreed slightly, 7.1% neither agreed nor disagreed and the remaining 14.3% disagreed slightly. Majority of the respondents (78.5%) either strongly agreed or slightly agreed on use of knowledge repository to enhance knowledge transfer. Please see table 4-5 for further details.

Responses found from both ethio telecom and vendors indicate that the practice of knowledge repository in ethio telecom is established so as to enhance project knowledge transfer. Therefore, the conclusions found from ethio telecom and vendor respondents have illustrated the same findings.

Table 4-6 Raters response towards the use of knowledge repository

Employer		Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	14	19.4	20.3
		Slightly Agree	22	30.6	31.9
		Neither agree nor disagree	10	13.9	14.5
		Slightly Disagree	14	19.4	20.3
		Strongly Disagree	9	12.5	13.0
		Total	69	95.8	100.0
vendor	Valid	Strongly Agree	11	61.1	61.1
		Slightly Agree	4	22.2	22.2
		Neither agree nor disagree	1	5.6	5.6
		Slightly Disagree	2	11.1	11.1

Source: Own survey, 2017

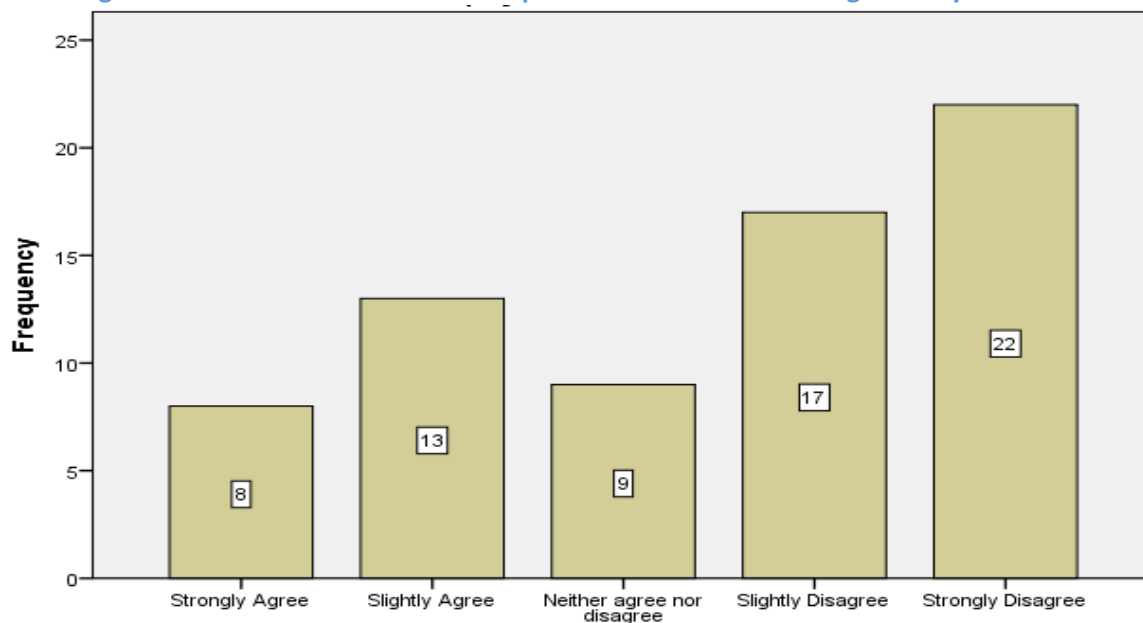
4.3.3 Recognition, Evaluation, IT, and Formal and Informal Training Opportunities

4.3.3.1 Recognition

In the case of recognition given to knowledge transfer activities, slightly over one in ten (11.6%) respondents of ethio telecom agreed strongly, 18.8% of the respondents agreed slightly, while 13% of the employees neither agreed nor disagreed. On the contrary, almost a quarter (24.6%) of the employees disagreed slightly and slightly over three in ten (31.9%) disagreed strongly.

As seen in Figure 4-1 below, majority of ethio's respondents (56.5%) either disagreed slightly or disagreed strongly on the availability of a recognition system. Therefore, it can be taken as one of the reasons for lack of proper knowledge transfer in project environments.

Figure 4-1 Ethio telecom's Raters response on existence of recognition system



Source: Own survey, 2017

On the other hand, findings from vendors' side illustrate that one-third of vendors' respondents (33.3%) agreed strongly, exactly half (50%) of the employees agreed slightly, 5.6% of the employees neither agreed nor disagreed and somewhat over one in ten (11.1%) of the respondents agreed slightly.

A large part of vendors' respondents (83.3%) have reported the existence of recognition for accomplishments in knowledge transfer activities. Table 4-6 below depicts the response distribution of vendors.

Table 4-7 Vendors' response towards availability of a recognition system to KT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	6	33.3	33.3	33.3
	Slightly Agree	9	50.0	50.0	83.3
	Neither agree nor disagree	1	5.6	5.6	88.9
	Slightly Disagree	2	11.1	11.1	100.0
	Total	18	100.0	100.0	

Source: Own survey, 2017

The finding from the two groups of respondents has brought contradictory outcomes. Since ethio telecom employees are the ones who are on the receiving side of the recognition, it might be thought that the finding from vendors' responses is a bit unusual.

4.3.3.2 Evaluation

As listed in table 4-7 below, 11 ethio telecom respondents (15.9%) agreed strongly on the evaluation of training content and quality to enhance project knowledge transfer. Almost a quarter (24.6%) of the respondents agreed slightly, while a fair share of 18.8% has a neutral perspective. In contrast, 18.8% of the respondents disagreed slightly while 21.7% of them disagreed strongly.

Likewise, one-third (33.3%) of vendors employees reported strong agreement while 55.6% agreed slightly. A small portion of the respondents (5.6%) neither agreed nor disagreed on the matter where as 5.6% of the report revealed slight disagreement. Table 4-7 below shows the response distribution on vendors' side;

Table 4-8 Project team response towards evaluation of training content and quality

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	11	15.3	15.9	15.9
		Slightly Agree	17	23.6	24.6	40.6
		Neither agree nor disagree	13	18.1	18.8	59.4
		Slightly Disagree	13	18.1	18.8	78.3
		Strongly Disagree	15	20.8	21.7	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	6	33.3	33.3	33.3
		Slightly Agree	10	55.6	55.6	88.9
		Neither agree nor disagree	1	5.6	5.6	94.4
		Slightly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

It can be understood that a large portion of ethio telecom respondents (40.5%) either disagreed strongly or disagreed slightly. Equivalent number of ethio employees (40.5%) also agreed either strongly or slightly on this case. On the contrary, majority of vendors' respondents (83.3%) agreed either slightly or strongly on evaluation of training content and quality.

The findings from the vendors' side looks like a bit prejudiced as vendors are the major stakeholders to evaluate project training contents and quality based on client feedback. Usually training modules, contents and associated prices are preset by vendors to serve all clients throughout the world. Due to this they are often reluctant to make any adjustments to their training contents and quality unless a special arrangement is made.

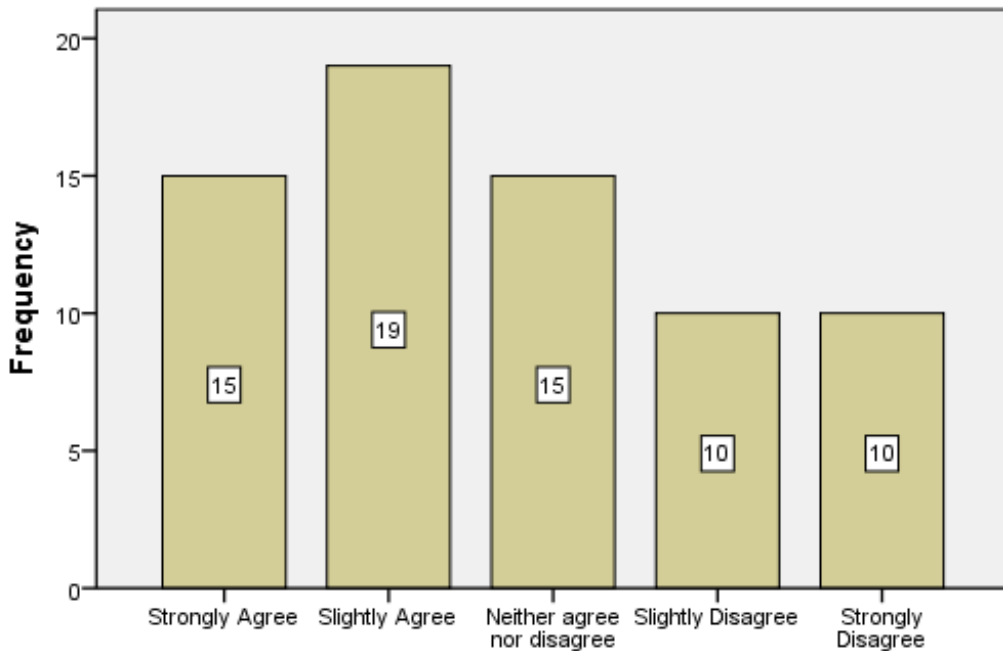
4.3.3.3 Information Technology

In the case of Information technology infrastructure readiness to enhance knowledge transfer activities, slightly over 20 percent (21.7%) of ethio telecom employees agreed

strongly. Likewise 27.5% of the employees agreed slightly while 21.7% of respondents have a neutral belief. Slightly over a quarter (26%) of the respondents disagreed slightly.

Figure 4-2 below shows the response distribution among ethio telecom employees regarding use of information technology infrastructure to support knowledge transfer. The result portrays that majority of the employees (49%) either agreed strongly or slightly to the availability of IT infrastructure to support knowledge transfer.

Figure 4-2 Project teams response on use of information technology infrastructure



Source: Own survey, 2017

Results found from vendors also revealed similar outcomes. 55.6% of the respondents agreed strongly, 38.9 agreed slightly while 5.6% of the group disagreed strongly. As it is seen from table 4-8, most of the employees (94.5%) are in agreement with the availability of IT infrastructure to facilitate and support knowledge transfer.

Table 4-9 Vendors employees' responses towards use of IT infrastructure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	10	55.6	55.6	55.6
	Slightly Agree	7	38.9	38.9	94.4
	Strongly Disagree	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

Source: Own survey, 2017

Based on the above findings, it can be understood that most of the respondents have acknowledged the availability of Information Technology infrastructure to support and enhance project knowledge transfer in ethio telecom. This is not a coincidence as ethio telecom is one of the key players in information technology and communication sectors.

4.3.3.4 Opportunities to Formal and Informal Trainings

As seen in table 4-9 below, concerning the creation of opportunities to formal and informal trainings, 14.7% of ethio respondents agreed strongly, 29.4% of the respondents agreed slightly, 20.6% of the respondents neither agreed nor disagreed, and 25% of the response shows slight disagreement. However, the other 10.3% of the respondents disagreed strongly.

Based on this, it can be summarized that a large number of ethio respondents (30) either agreed strongly or agreed slightly on the existence and creation of opportunities in offshore project environments. So, according to the respondents, majority believe there is an established practice with regard to creation of training opportunities in the company.

Similarly, results found from vendors reveal that 8 respondents (44.4%) agreed strongly, another 8 respondents (44.4%) agreed slightly and the rest 2 respondents (11.2%) disagreed slightly. That means 16 respondents (88.8%) have either agreed strongly or agreed slightly on the creation of training opportunities.

Table 4-10 Raters responses on opportunities to formal and informal training

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	10	13.9	14.7	14.7
		Slightly Agree	20	27.8	29.4	44.1
		Neither agree nor disagree	14	19.4	20.6	64.7
		Slightly Disagree	17	23.6	25.0	89.7
		Strongly Disagree	7	9.7	10.3	100.0
		Total	68	94.4	100.0	
	Missing	System	4	5.6		
	Total		72	100.0		
vendor	Valid	Strongly Agree	8	44.4	44.4	44.4
		Slightly Agree	8	44.4	44.4	88.9
		Slightly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

The findings from ethio telecom and vendors disclose that majority of the survey respondents are in agreement either strongly or slightly on creation of opportunities for formal and informal trainings in offshore outsourced project environments.

4.4 Challenges of Knowledge Transfer in Offshore Outsourced Projects

Results found from the survey on the challenges of knowledge transfer such as organizational readiness, organizational politics, organizational culture, national culture, language barrier, and relationship challenges are presented and discussed in the following subsections.

The overall response statistics for each item is shown in table 4-10 below;

Table 4-11 Overall Response Statistics on Challenges of KT

Employer			Organiz. Readiness	Organiz. Politics	Organiz. Culture	National Culture	Language Barrier	Relationship Challenge
ethio telecom	N	Valid	69	69	69	69	69	69
		Missing	3	3	3	3	3	3
	Mean		2.4348	2.9130	2.7826	2.6232	2.1014	2.7391
	Std. Deviation		.96220	.95084	1.24699	1.00149	.95709	.99487
vendor	N	Valid	18	18	18	18	18	18
		Missing	0	0	0	0	0	0
	Mean		4.1111	4.0000	2.1667	3.6667	3.5556	3.6667
	Std. Deviation		1.02262	1.08465	1.20049	1.02899	1.19913	1.23669

Source: Own survey, 2017

Based on mean values of challenge items as shown in table 4-10, it can be deduced that language barrier is the most significant challenge followed by organizational readiness, national culture, relationship challenge, organizational culture and organizational politics. The standard deviation value also revealed that employees have higher level of agreement on organizational politic followed and language barrier followed by organizational readiness, relationship challenge, national culture and organizational culture.

4.4.1 Organizational Readiness

Referring to survey questions on lack of organizational readiness, part of the respondents from ethio telecom (14.5%) agreed strongly, over forty percent (42%) of the respondents agreed slightly, one-third of the respondents (33.3%) neither agreed nor disagreed, 5.8% of the respondents disagreed slightly, and 4.2% of the respondents stated strong disagreement. As listed below, Table 4-11 gives detail response distribution between the respondents.

From this results, we can deduce that majority of ethio telecom’s respondents doesn’t reach agreement in their organization’s readiness to facilitate and enhance knowledge transfer in offshore outsourced telecom projects.

On the contrary, 38.9% of the respondents from vendors' teams disagree strongly on lack of organizational readiness, 44.4% disagreed slightly, and 11.1% of the respondents neither agreed nor disagreed. Only 5.6% (1 respondent) have agreed strongly. Hence, most of the vendor respondents either disagreed strongly or disagreed slightly (83.3%) on lack of organizational readiness.

Table 4-12 Project teams response on lack of organizational readiness

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	10	13.9	14.5	14.5
		Slightly Agree	29	40.3	42.0	56.5
		Neither agree nor disagree	23	31.9	33.3	89.9
		Slightly Disagree	4	5.6	5.8	95.7
		Strongly Disagree	3	4.2	4.3	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	1	5.6	5.6	5.6
		Neither agree nor disagree	2	11.1	11.1	16.7
		Slightly Disagree	8	44.4	44.4	61.1
		Strongly Disagree	7	38.9	38.9	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

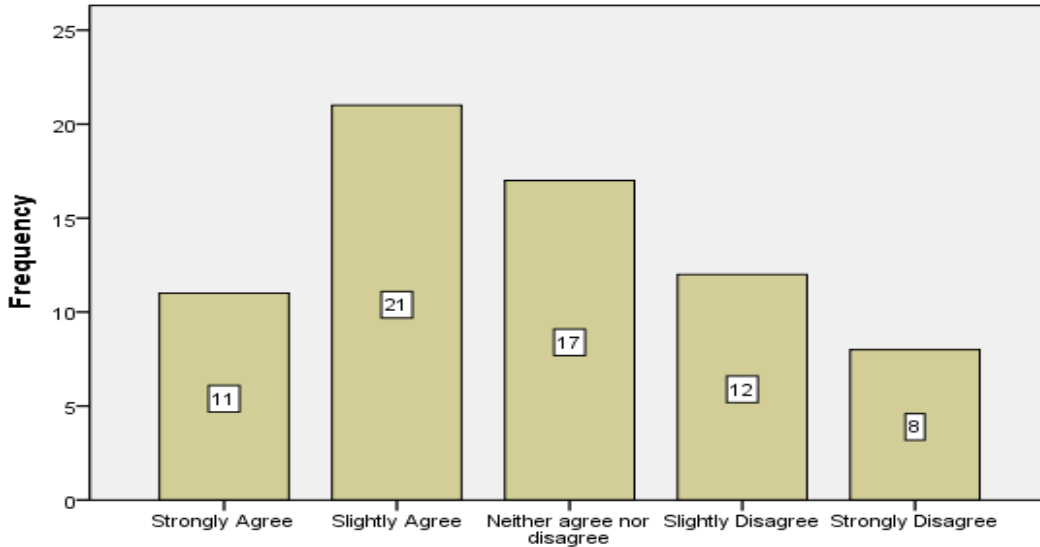
The presence of opposing views from the two groups of respondents regarding organizational readiness is somewhat vague. However, to some extent, it can be assumed that either vendors are a bit reserved to disclose their partner's condition or else they are comfortable with what is happening inside the organizations and are not willing to expose the gap.

4.4.2 Organizational Culture

On the survey question regarding the positive role of organizational culture on knowledge transfer in the company's outsourcing projects, 11 respondents (15.9%) agreed strongly, 21 respondents (30.4%) agreed slightly, 17 respondents (24.6%) neither agreed nor

disagreed, 12 respondents (17.4%) disagreed slightly and the remaining 8 respondents (11.6%) disagreed strongly. Figure 4-3 below illustrates the response distribution of ethio telecom employees.

Figure 4-3 Raters response on presence of favorable organizational culture



Source: Own survey, 2017

As shown in table 4-12 below, most of the respondents have either agreed strongly or agreed slightly to the impacts brought about by organizational culture on transfer of knowledge in outsourcing projects.

In the case of vendors, 6 respondents (33.3%) agreed strongly, 7 respondents (38.9%) agreed slightly and 2 respondents (11.1%) have a neutral viewpoint. A small portion of the vendors' employees (2) disagreed slightly and the other 1 respondent disagreed strongly. The result indicates that majority of the respondents (13) have either agreed strongly or agreed slightly. This result is in conformity with what was found from ethio telecom team as stated before.

Table 4-13 Raters response on presence of supportive organizational culture

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	11	15.3	15.9	15.9
		Slightly Agree	21	29.2	30.4	46.4
		Neither agree nor disagree	17	23.6	24.6	71.0
		Slightly Disagree	12	16.7	17.4	88.4
		Strongly Disagree	8	11.1	11.6	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	6	33.3	33.3	33.3
		Slightly Agree	7	38.9	38.9	72.2
		Neither agree nor disagree	2	11.1	11.1	83.3
		Slightly Disagree	2	11.1	11.1	94.4
		Strongly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

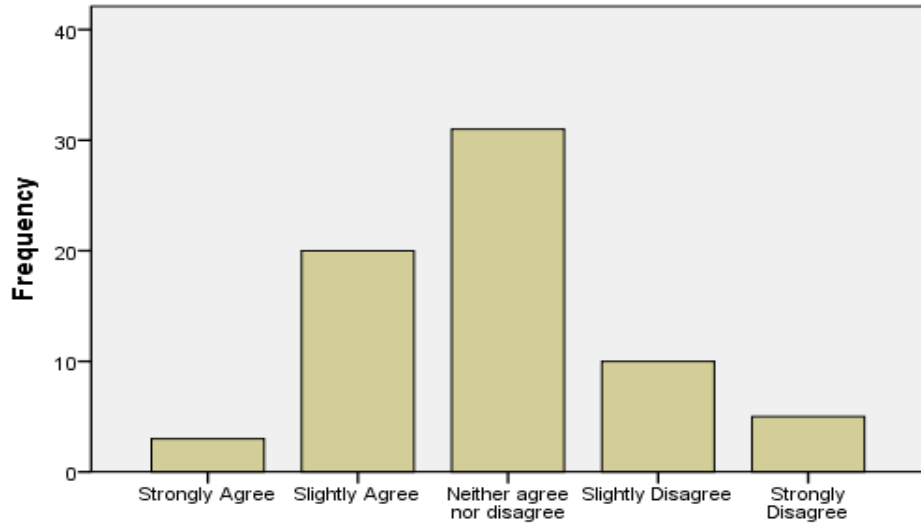
Source: Own survey, 2017

4.4.3 Organizational Politics

When it comes to existence of undesirable organizational politics impacting transfer of knowledge, 3 respondents (4.3%) agreed strongly, 20 respondents (29%) disagreed slightly, and 31 respondents (44.9%) neither agreed nor disagreed. While on the contrary, 10 respondents (14.5%) disagreed slightly and the remaining 5 respondents (7.2%) disagreed strongly. Figure 4-4 shows the response distributions on the existence of adverse organizational politics impacting transfer of knowledge.

From this result it can be concluded that a large part of the respondents on ethio telecom side (44.9%) neither agreed nor disagreed. These are the swinging respondents who are not sure of the absence or presence of organizational culture on their project environment impacting knowledge transfer. The next significant number of employees (23) have either strongly agreed or slightly agreed and the other 15 respondents (21.7%) have either disagreed slightly or disagreed strongly. However, it would be clever to contemplate organizational politics as a challenge in this kind of conditions where a vast majority of the respondents are uncertain.

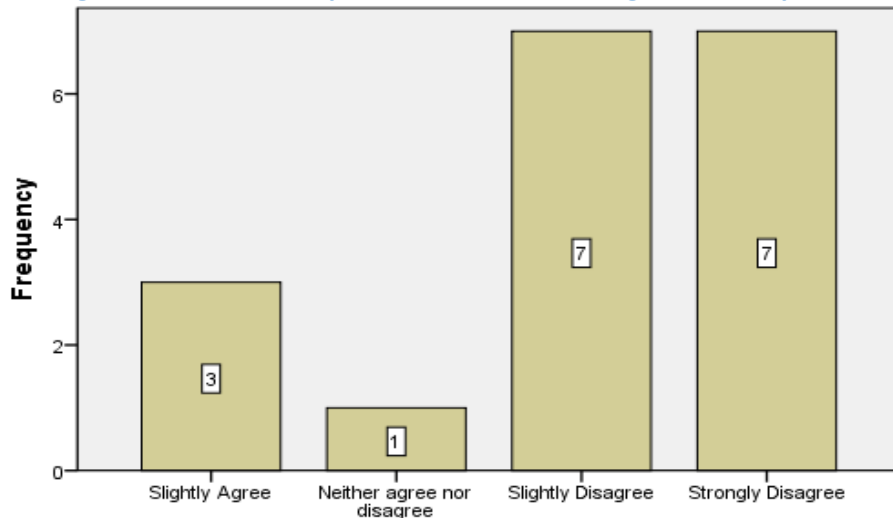
Figure 4-4 Ethio employees response on existence of organizational politics impacting KT



Source: Own survey, 2017

Referring to vendors responses, as seen in Figure 4-5 below, 14 respondents (77.8%) have either disagreed strongly or disagreed slightly on the challenge of organizational politics in knowledge transfer. This outcome is totally divergent from ethio telecom respondents' observation where majority of the respondents have a neutral stance and the next major portion of respondents have some kind of agreement. One reason for getting contrasting views on existence of organizational politics might be the level of exposure vendors have to ethio telecom's work environment.

Figure 4-5 Vendors response on existence of organizational politics impacting KT



Source: Own survey, 2017

4.4.4 National Culture

As seen from table 4-13, majority of ethio telecom’s employees (47.8%) felt the adverse influence of national culture on knowledge transfer. Out of these, 13% of the respondents agreed strongly while 34.8% of the respondents agreed slightly. Conversely, 20.3% of the respondents disagreed slightly while one respondent (1.4%) reported a strong disagreement. There are also 21 respondents (30.4%) who stand neutral.

Referring to vendors responses, we can deduce that most of the respondents (72.3%) have either disagreed strongly or disagreed slightly. Out of these respondents, 16.7% reported strong disagreement while 55.6% of vendor employees reported slight disagreement. Besides, 22.2% of the respondents reported slight agreement whereas 5.6% of the respondents stand neutral.

Table 4-14 Project teams response on the influence of national culture on KT

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	9	12.5	13.0	13.0
		Slightly Agree	24	33.3	34.8	47.8
		Neither agree nor disagree	21	29.2	30.4	78.3
		Slightly Disagree	14	19.4	20.3	98.6
		Strongly Disagree	1	1.4	1.4	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total	72	100.0			
vendor	Valid	Slightly Agree	4	22.2	22.2	22.2
		Neither agree nor disagree	1	5.6	5.6	27.8
		Slightly Disagree	10	55.6	55.6	83.3
		Strongly Disagree	3	16.7	16.7	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

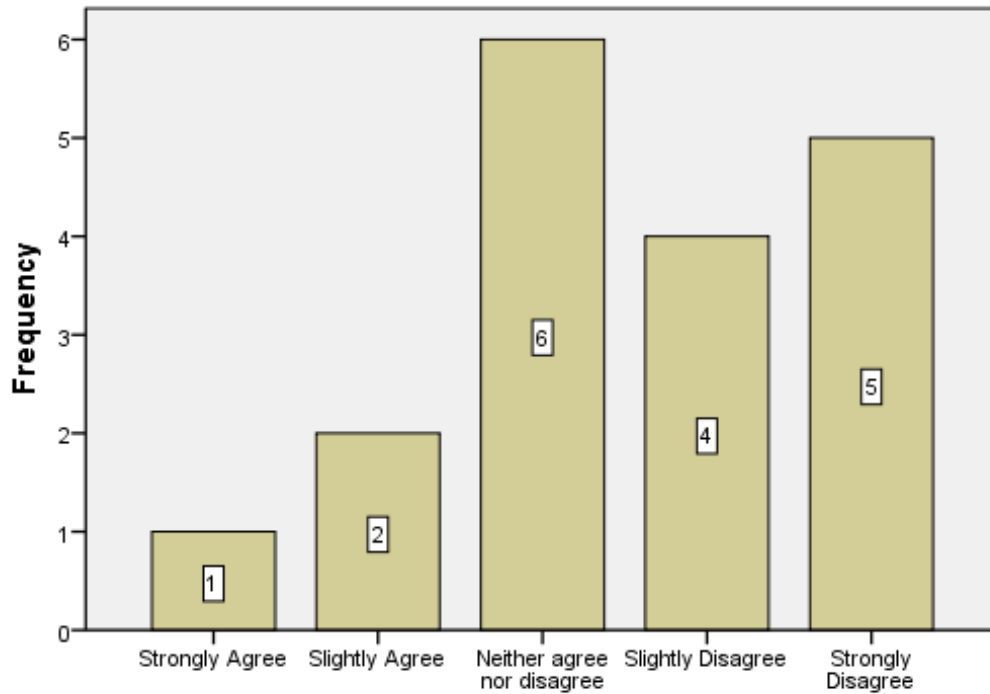
The results found from the two teams are contradicting. Most of the individuals on ethio telecom side (47%) acknowledged national culture difference as a challenge whereas majority respondents from vendor’s side don’t think it as a challenge. So, the two groups have different perspectives on this issue. But considering vendor teams working experience in so many foreign countries, their view is somewhat understandable.

However ethio telecom teams do not have this kind of vast experience to neglect national culture’s impact in their search for technical and business knowledge.

4.4.5 Language Barrier

Regarding the challenge associated with language differences and difficulty to understand vendors’ accent, a vast majority of ethio telecom’s respondents (76.8%) have agreed either strongly or slightly. 8 respondents (11.6%) have a neutral stance, 7 respondents (10.1%) disagreed slightly while 1 respondent disagreed strongly. Figure 4-6 shows the response distribution among respondents on the challenge brought about by language gaps.

Figure 4-6 Ethio telecom staffs response on influence of language barrier on KT



Source: Own survey, 2017

On the other hand, as seen in table 4-14, 9 vendors’ respondents (50%) disagreed either slightly or strongly, 6 respondents (33.3%) have a neutral stand, 2 respondents agreed slightly (11.1%) and the remaining 1 respondent disagreed strongly.

Table 4-15 Project teams response on the negative role of language barrier

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	18	25.0	26.1	26.1
		Slightly Agree	35	48.6	50.7	76.8
		Neither agree nor disagree	8	11.1	11.6	88.4
		Slightly Disagree	7	9.7	10.1	98.6
		Strongly Disagree	1	1.4	1.4	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	1	5.6	5.6	5.6
		Slightly Agree	2	11.1	11.1	16.7
		Neither agree nor disagree	6	33.3	33.3	50.0
		Slightly Disagree	4	22.2	22.2	72.2
		Strongly Disagree	5	27.8	27.8	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

Conferring to the results from the ethio telecom, it is clear that language barrier has been a big challenge for most of ethio telecom employees (76.8) in their pursuit to capture knowledge at their project environments. On the contrary, most vendors' respondents (50%) do not think language barrier as a challenge to transfer knowledge.

The understanding from this result is that language barrier has been a big challenge in ethio telecom offshore outsourcing environments even if vendors feel the other way round. The inability to communicate properly both in technical terms and business language has been acknowledged as one of the challenge areas in offshore outsourced telecom projects.

4.4.6 Relationship Challenges

As per the information gathered concerning the challenge brought about by relationships between vendors and ethio telecom on knowledge transfer; 44.9% of ethio telecom's respondents agreed either slightly or strongly, 30.4% of the respondents are neutral,

21.7% of the respondents disagreed slightly whereas 2.9% of ethio employees disagreed strongly. Table 4-15 shows the response distribution among the two groups;

Table 4-16 Employees response on the challenges exerted by inappropriate relationships

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	6	8.3	8.7	8.7
		Slightly Agree	25	34.7	36.2	44.9
		Neither agree nor disagree	21	29.2	30.4	75.4
		Slightly Disagree	15	20.8	21.7	97.1
		Strongly Disagree	2	2.8	2.9	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total	72	100.0			
vendor	Valid	Slightly Agree	5	27.8	27.8	27.8
		Neither agree nor disagree	2	11.1	11.1	38.9
		Slightly Disagree	5	27.8	27.8	66.7
		Strongly Disagree	6	33.3	33.3	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

The above results confirm that most of ethio telecom's respondents (44.9%) acknowledged relationship between vendors and ethio telecom as a challenge in the company's effort to capture valuable project knowledge.

In contrast, 11 respondents (61.1%) from vendors' teams reported either a slight disagreement or strong disagreement, 2 respondents are neutral while 5 respondents (27.8%) reported slight agreement. Based on the above results, we can deduce that, majority of vendors employees either disagreed slightly or disagreed strongly to the challenge experienced by ruined relationships and mistrusts between vendors and clients impacting knowledge transfer.

Even though majority of vendors' teams reported their disagreements, gap in relationship quality has been identified as challenge hindering knowledge transfer by majority of ethio's respondents. Relationships shall be merely based on formal contracts and strong-willed trust to facilitate knowledge transfer in offshore outsourced projects. However,

according to majority ethio respondents, the practice of informal contracts and wide ranging mistrusts between the parties has been a challenge.

4.5 Factors Affecting Knowledge Transfer Activity

Results found from survey regarding factors of knowledge transfer such as vendor related factors (dissemination capability, willingness, aptitude, trustworthiness), client related factors (perception, role ambiguity, competence, learning intent), knowledge complexity, knowledge transfer mechanisms, and relationship factors are presented and discussed in the following subsections.

4.5.1 Vendor Related Factors

There are four factors identified during the preliminary investigation in this category i.e. Dissemination Capability, Willingness, Technical Capability and Trustworthiness. Table 4-16 below shows the response statistics.

Table 4-17 Overall response statistics on vendor related factors

Employer			Vendor's Dissemination Capability	Willingness of Vendors	Vendor's Capability	Vendor's Trustworthiness
ethio telecom	N	Valid	68	69	68	69
		Missing	4	3	4	3
	Mean		3.3824	3.3188	2.9412	3.2754
	Std. Deviation		1.15938	1.33387	1.34810	1.22335
vendor	N	Valid	18	18	18	18
		Missing	0	0	0	0
	Mean		1.8333	1.8889	1.6111	1.7222
	Std. Deviation		.92355	.90025	.97853	.95828

Source: Own survey, 2017

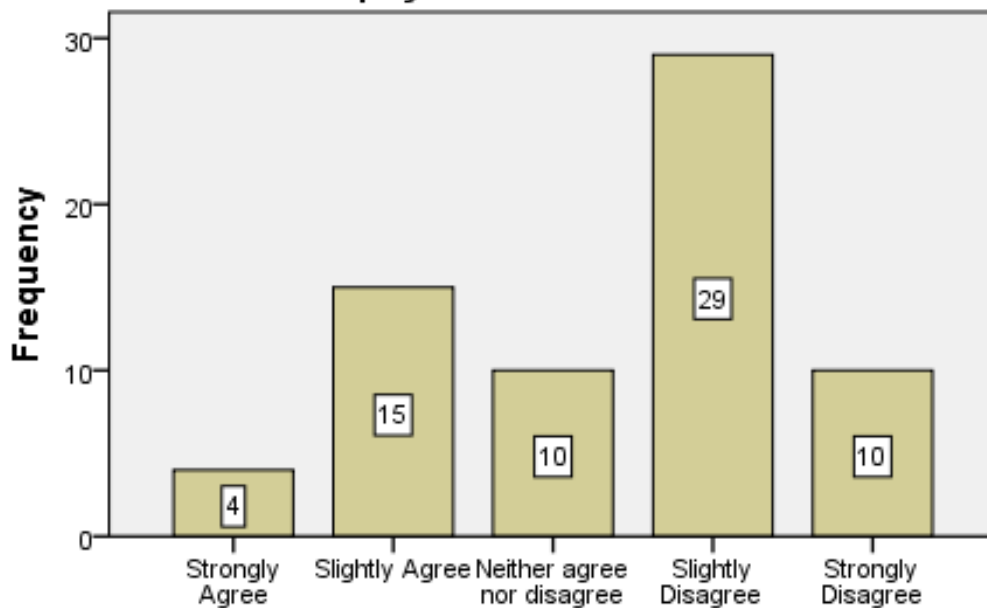
When looking at the mean values of vendor related factors, it is clear that dissemination capability, willingness and trustworthiness are the three significant barriers as perceived by employees. Vendors' capability is the termed as the least significant factor by the respondents. By looking at the standard deviation values, it is also apparent that employees have a higher level of agreement towards lack of vendor dissemination

capability followed by lack of trustworthiness, lack of willingness and incapability of vendor teams.

4.5.1.1 Dissemination Capability

According to the survey made on ethio telecom employees on the vendors' dissemination capability, 54.2% of the respondents disagreed either slightly or strongly, 14.7% of the respondents are neutral while the remaining 27.9% of the respondents agreed either slightly or strongly as shown in figure 4-7 below.

Figure 4-7 Ethio telecom project staffs response on vendor's dissemination capability



Source: Own survey, 2017

It can be summarized that majority of ethio telecom's respondents (54.2%) have shown their disagreement on the capability of vendors to disseminate knowledge in project environments. Even if vendors have the required expertise in the area, according to most respondents, they don't have the capability to disseminate knowledge to client teams.

Survey results found from vendors, on the contrary, reveals that 88.9% of the respondents agreed either slightly or strongly as shown in table 4-17 below. This is totally in contrast with what has been reported in ethio telecom. However, it could be argued that this kind of report is rather expected from vendor teams as they are likely to cover their blame.

Table 4-18 Project teams response on vendors' dissemination capability

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	4	5.6	5.9	5.9
		Slightly Agree	15	20.8	22.1	27.9
		Neither agree nor disagree	10	13.9	14.7	42.6
		Slightly Disagree	29	40.3	42.6	85.3
		Strongly Disagree	10	13.9	14.7	100.0
		Total	68	94.4	100.0	
	Missing	System	4	5.6		
	Total	72	100.0			
vendor	Valid	Strongly Agree	7	38.9	38.9	38.9
		Slightly Agree	9	50.0	50.0	88.9
		Slightly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

Hence, most ethio telecom employees who gave their outlook have a common understanding in relation to the lack of knowledge dissemination capability on the vendor side. The situation has its own negative consequence on ethio telecom's effort of capturing the necessary knowledge that allows full control of operational activities within the company.

4.5.1.2 Willingness to Transfer Knowledge

With respect to willingness of vendors to transfer knowledge, 53.6% of the respondents either slightly disagreed or strongly disagreed, 36.2% of the respondents agreed either slightly or strongly and 10.1% of the respondents are neutral as seen in table 4-18 below.

Responses from vendors on their willingness to transfer knowledge show that 88.9% of the respondents have either agreed slightly or agreed strongly and the remaining 11.1% disagreed slightly.

Table 4-19 Project teams response on willingness of vendors to transfer knowledge

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	6	8.3	8.7	8.7
		Slightly Agree	19	26.4	27.5	36.2
		Neither agree nor disagree	7	9.7	10.1	46.4
		Slightly Disagree	21	29.2	30.4	76.8
		Strongly Disagree	16	22.2	23.2	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	6	33.3	33.3	33.3
		Slightly Agree	10	55.6	55.6	88.9
		Slightly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

Based on the abovementioned results, majority of ethio telecom respondents (53.6%) have identified lack of willingness on the vendor side as influencing factor in transferring the required knowledge. However, significant number of vendor respondents (88.9) does not consider lack of willingness as an influencing factor.

Since client teams are on the receiving side, it would be normal to consider ethio telecom employees' viewpoint appropriately. Thus, capturing the required knowledge would be tough if there is a lack of willingness on the vendor side. This kind of situations might also force ethio telecom to look for vendors support in case of network interruptions and technical failures.

4.5.1.3 Technical Capability

Concerning technical capability of vendors to transfer quality knowledge, 45.6% of employees from ethio telecom agreed either slightly or strongly, 13.2% of the respondents are neutral, and 41.2% of the respondent disagreed either slightly or strongly as seen in table 4-19 below. Therefore, most of ethio telecom's respondents think that

vendors have the essential technical capability but fairly a good portion of the employees (41.2%) think the opposite.

Similar investigations on vendors also show that 88.9% of the respondents have acknowledged vendors' capability to transfer quality knowledge. The remaining 11.1% of respondents disagreed slightly.

Table 4-20 Group response towards vendors' capability

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	11	15.3	16.2	16.2
		Slightly Agree	20	27.8	29.4	45.6
		Neither agree nor disagree	9	12.5	13.2	58.8
		Slightly Disagree	18	25.0	26.5	85.3
		Strongly Disagree	10	13.9	14.7	100.0
		Total	68	94.4	100.0	
	Missing	System	4	5.6		
	Total	72	100.0			
vendor	Valid	Strongly Agree	11	61.1	61.1	61.1
		Slightly Agree	5	27.8	27.8	88.9
		Slightly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

Hence, most respondents on both groups admitted the capability and expertise of vendors to transfer knowledge in offshore outsourced telecom projects. This is one of the core vendor attributes that comfort client teams in project settings.

4.5.1.4 Lack of Trustworthiness

As seen in table 4-20 below, majority of the respondents from ethio telecom (53.4%) disagreed either slightly (39.1%) or strongly (14.5%) on vendors' trustworthiness to transfer a quality knowledge. 14.5% of the respondents are neutral while over thirty percent (31.9%) of the respondent agreed either slightly or strongly.

On vendor side, 88.9% of the employees agreed either strongly or slightly and the rest 11.1% disagreed slightly. This is contradicting to what has been reported by client teams.

Table 4-21 Project teams response towards vendor’s trustworthiness

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	6	8.3	8.7	8.7
		Slightly Agree	16	22.2	23.2	31.9
		Neither agree nor disagree	10	13.9	14.5	46.4
		Slightly Disagree	27	37.5	39.1	85.5
		Strongly Disagree	10	13.9	14.5	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	9	50.0	50.0	50.0
		Slightly Agree	7	38.9	38.9	88.9
		Slightly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

Usually vendors expect to handle network maintenance activities at the cost of ethio telecom for the foreseeable future while ethio telecom employees look to overtake the task as soon as project work is completed. Due to this, there is always a reliability issue raised from client teams. This is also supported by the realities on the ground where ethio telecom teams are still dependent on vendor expertise even after the project is completed so long ago.

4.5.2 Client Related Factors

Client side factors identified during preliminary investigation affecting knowledge transfer include; Perception, Role Ambiguity, Absorption Capability and Learning Intent. In the following sections survey findings will be presented one after the other. Table 4-21 below shows the response statistics in relation to client related factors.

Table 4-22 Project teams response Statistics on Client Related Factors

Employer		Client Perception	Role Ambiguity	Absorption Capacity	Learning Intent	
ethio telecom	N	Valid	69	69	69	
		Missing	3	3	3	
	Mean		1.9565	2.5507	2.2609	1.8261
	Std. Deviation		.93045	1.23117	1.14599	.95419
vendor	N	Valid	18	18	18	
		Missing	0	0	0	
	Mean		1.9444	2.2222	1.8889	2.1111
	Std. Deviation		.87260	1.16597	1.13183	1.18266

Source: Own survey, 2017

Based on the mean value of employees’ perception, role ambiguity and absorption capacity are relatively categorized as more affecting factors. Client perception problems and lack of learning intent are the second set of affecting factors as perceived by respondents. The standard deviation values also reveal that employees have a higher level of agreement towards client perception followed by absorption capability, role ambiguity and leaning intent respectively.

4.5.2.1 Perception

When it comes to respondents view on perception of ethio telecom teams, as seen in table 4-22 below, almost eight in ten (79.7%) of the respondents from ethio telecom agreed either slightly or strongly on the presence of good perception on knowledge transfer. Slightly over five percent (5.8%) of the respondents disagreed either strongly or slightly while 14.5% of the employees have a neutral stance.

The insight of vendor employees towards client team’s perception on knowledge transfer is also similar. 88.9% of the respondents agreed either slightly (61.1%) or strongly (27.8%) whereas 11.1% of vendor employees disagreed slightly.

Thus, majority of the respondents from both teams share the idea that ethio telecom teams do not have perception problem. Perception is an important factor in employees’ internal motivation towards capturing project knowledge.

Table 4-23 Project teams response on right perception of ethio telecom project staffs

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	23	31.9	33.3	33.3
		Slightly Agree	32	44.4	46.4	79.7
		Neither agree nor disagree	10	13.9	14.5	94.2
		Slightly Disagree	2	2.8	2.9	97.1
		Strongly Disagree	2	2.8	2.9	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total	72	100.0			
vendor	Valid	Strongly Agree	5	27.8	27.8	27.8
		Slightly Agree	11	61.1	61.1	88.9
		Slightly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

4.5.2.2 Role Ambiguity

On the clarity of roles with in ethio telecom projects that enhances knowledge transfer, almost six in ten (60.9%) of the ethio employees agreed either slightly or strongly as seen in table 4-23 below. 13% of the respondents are neutral but 26.1% of respondents reported either a slight disagreement or a strong disagreement.

Likewise, 72.2% of vendor teams have either agreed slightly or agreed strongly to clarity of roles within ethio telecom projects. 16.7% of respondents disagreed either strongly or slightly though 11.1% are neutral.

Hence, large parts of both teams agreed on clarity of roles within ethio telecom offshore outsourced projects. So according to the respondent’s feedback, project staffs within the organization know assigned roles in their own work area.

Table 4-24 Employees response on role Ambiguity in project environment

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	13	18.1	18.8	18.8
		Slightly Agree	29	40.3	42.0	60.9
		Neither agree nor disagree	9	12.5	13.0	73.9
		Slightly Disagree	12	16.7	17.4	91.3
		Strongly Disagree	6	8.3	8.7	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	5	27.8	27.8	27.8
		Slightly Agree	8	44.4	44.4	72.2
		Neither agree nor disagree	2	11.1	11.1	83.3
		Slightly Disagree	2	11.1	11.1	94.4
		Strongly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

4.5.2.3 Absorption Capability

As seen in table 4-24, on the topic of absorption capability of ethio telecom teams, the majority of ethio telecom’s respondents (66.7%) either agreed strongly (29%) or agreed slightly (37.7%). 17.4% of the respondents disagreed either slightly (13%) or strongly (4.3%) while the remaining 15.9% of ethio’s employees are neutral.

In the case of vendors, 15 respondents (83.3%) reported either slight agreement (38.9%) or strong agreement (44.4%). Slightly more than five percent of the respondents (5.6%) are neutral and the rest 2 respondents (11.2%) showed either slight disagreement (5.6%) or strong disagreement (5.6%).

Absorption capability of ethio telecom teams is outstanding according to most of the respondents. Thus, it is not a major concern for knowledge transfer according to the survey result. The result is also somewhat supported by the educational background of ethio telecom employees where a large group of the respondents (94.2%) are holders of either a first degree or a second degree.

Table 4-25 Raters' response on absorption capacity of ethio telecom project staffs

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	20	27.8	29.0	29.0
		Slightly Agree	26	36.1	37.7	66.7
		Neither agree nor disagree	11	15.3	15.9	82.6
		Slightly Disagree	9	12.5	13.0	95.7
		Strongly Disagree	3	4.2	4.3	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	8	44.4	44.4	44.4
		Slightly Agree	7	38.9	38.9	83.3
		Neither agree nor disagree	1	5.6	5.6	88.9
		Slightly Disagree	1	5.6	5.6	94.4
		Strongly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

4.5.2.4 Intent to Learn

The last but not the least client side factor is the intent of employees to learn. On this respect, it is found that 57 of ethio telecom's respondents (82.6%) either agreed strongly (44.9%) or agreed lightly (37.7%). 5 employees (7.2%) are neutral but 7 respondents (10.1%) disagreed slightly as seen in table 4-25 below.

Similarly, vendors response exposed that most respondents (77.8%) have either agreed strongly (33.3%) or agreed slightly (44.4%) to the commitment of ethio telecom teams towards learning. 5.6% of the employees are neutral and 16.7% of the respondents disagreed either slightly or strongly.

Therefore, a large portion of respondents from ethio telecom and vendor teams have acknowledged the learning intent of ethio project workforces. As it stands, learning intent wouldn't be reckoned as influencing factor in the current project setting. On top of having a highly capable workforce, the presence of committed employees rewards ethio telecom in its pursuit of technical and business project knowledge.

Table 4-26 Project teams response on Learning Intent of ethio telecom project staffs

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	31	43.1	44.9	44.9
		Slightly Agree	26	36.1	37.7	82.6
		Neither agree nor disagree	5	6.9	7.2	89.9
		Slightly Disagree	7	9.7	10.1	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total		72	100.0		
vendor	Valid	Strongly Agree	6	33.3	33.3	33.3
		Slightly Agree	8	44.4	44.4	77.8
		Neither agree nor disagree	1	5.6	5.6	83.3
		Slightly Disagree	2	11.1	11.1	94.4
		Strongly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

4.5.3 Knowledge Related Factors

When it comes to complexity of transferred knowledge, most ethio telecom respondents (44.9%) agreed either strongly (13%) or slightly (31.9%), 26.1% of the respondents are neutral whereas almost three in ten (29%) of the respondents have disagreed either slightly (17.4%) or strongly (11.6%) as seen in table 4-26 below.

In the case of vendors, 33.3% respondents exhibited either strong agreement (5.6%) or slight agreement (27.8%). Similar portion of respondents (33.3%) have a neutral stand and the remaining 33.3% of respondents disagreed either slightly (27.8%) or strongly (5.6%).

Table 4-27 Employees response on knowledge complexity

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	9	12.5	13.0	13.0
		Slightly Agree	22	30.6	31.9	44.9
		Neither agree nor disagree	18	25.0	26.1	71.0
		Slightly Disagree	12	16.7	17.4	88.4
		Strongly Disagree	8	11.1	11.6	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	1	5.6	5.6	5.6
		Slightly Agree	5	27.8	27.8	33.3
		Neither agree nor disagree	6	33.3	33.3	66.7
		Slightly Disagree	5	27.8	27.8	94.4
		Strongly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

According to the above findings, majority respondents acknowledged the presence of knowledge complexity in their project work environments. The problem mainly affects ethio telecom’s effort to capture knowledge from vendor teams in project settings. It also holds back employs determination in gaining knowledge on state of the art technologies and new advancements.

4.5.4 Relationship Related Factor

As shown in table 4-27, majority of ethio telecom’s respondents (79.7%) have either strongly agreed (31.9%) or slightly agreed (47.8%) on the existence of good vendor-client relationship which relied on use of formal contract procedures. 17.4% of the respondents are neutral while 2 employees (2.9%) disagreed slightly.

From the outcome of client responses, on the other hand, 83.3% of the respondents either agreed strongly (27.8) or agreed slightly (55.6%) on existence of quality relationships. The remaining 16.7% of the respondents are neutral.

Table 4-28 Response of project teams on the Influence of Relationship Quality

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	22	30.6	31.9	31.9
		Slightly Agree	33	45.8	47.8	79.7
		Neither agree nor disagree	12	16.7	17.4	97.1
		Slightly Disagree	2	2.8	2.9	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
Total			72	100.0		
vendor	Valid	Strongly Agree	5	27.8	27.8	27.8
		Slightly Agree	10	55.6	55.6	83.3
		Neither agree nor disagree	3	16.7	16.7	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

The results found from the two groups revealed similar outcome. In both cases vast portion of the respondents have agreed on existence of quality relationships. Quality relationships can assist and boost knowledge transfer by increasing trust and minimizing time expended in offshore outsourced telecom projects.

4.5.5 Transfer Mechanism

4.5.5.1 Formal Transfer Mechanism

When asked about efficiency of formal training mechanisms, over seventy five percent (75.4%) of the employees in ethio telecom either strongly agreed (20.3%) or slightly agreed (55.1%). Almost fifteen percent (14.5%) of the respondents are neutral and a small percentage of respondents (10.1%) have either disagreed strongly (4.3%) or disagreed slightly (5.8%).

Less than a quarter of vendor respondents (22.2%) agreed strongly, almost four in ten (38.9%) of the respondents agreed slightly, one-third of the respondents (33.3%) neither agreed nor disagreed where as 5.6% of the respondents disagreed slightly.

Therefore, majority of the respondents from ethio telecom (75.4%) and vendor organizations (61.1%) either agreed strongly or agreed slightly as shown in table 4-28

below. Hence, formal training mechanisms such as class room and laboratory trainings, documents and on-the-job trainings are thought as central to effective transfer of knowledge in ethio telecom.

Table 4-29 Response of project teams on effectiveness of Formal KT Mechanism

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	14	19.4	20.3	20.3
		Slightly Agree	38	52.8	55.1	75.4
		Neither agree nor disagree	10	13.9	14.5	89.9
		Slightly Disagree	4	5.6	5.8	95.7
		Strongly Disagree	3	4.2	4.3	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total	72	100.0			
vendor	Valid	Strongly Agree	4	22.2	22.2	22.2
		Slightly Agree	7	38.9	38.9	61.1
		Neither agree nor disagree	6	33.3	33.3	94.4
		Slightly Disagree	1	5.6	5.6	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

4.5.5.2 Informal Transfer Mechanism

Slightly over half (52.2%) of ethio telecom’s respondents either agreed strongly (11.6%) or agreed slightly (40.6%) on the effectiveness of informal knowledge transfer mechanisms in outsourcing projects. Almost three in ten (29%) of the respondents are neutral though still there are small parts of the respondents who expressed their disagreement either slightly (15.9%) or strongly (2.9%).

As seen in table 4-29 below, two-third of the respondents from vendors’ teams also expressed their agreement on effectiveness of informal training mechanisms either strongly (27.8%) or slightly (38.9%). Over twenty percent of the respondents (22.2%) neither agreed nor disagreed and slightly more than one in ten (11.1%) of the respondents disagreed slightly.

As can be seen from the results, informal knowledge transfer is not termed as a factor hampering knowledge transfer in ethio telecom; rather it is one of the mechanisms that facilitate transfer of project knowledge in offshore outsourced telecom projects. Majority of the respondents from both teams acknowledged the importance of informal ties, social events and social relationships in the transfer of project knowledge.

Table 4-30 Response of project teams on Effectiveness of Informal KT Mechanism

Employer			Frequency	Percent	Valid Percent	Cumulative Percent
ethio telecom	Valid	Strongly Agree	8	11.1	11.6	11.6
		Slightly Agree	28	38.9	40.6	52.2
		Neither agree nor disagree	20	27.8	29.0	81.2
		Slightly Disagree	11	15.3	15.9	97.1
		Strongly Disagree	2	2.8	2.9	100.0
		Total	69	95.8	100.0	
	Missing	System	3	4.2		
	Total	72	100.0			
vendor	Valid	Strongly Agree	5	27.8	27.8	27.8
		Slightly Agree	7	38.9	38.9	66.7
		Neither agree nor disagree	4	22.2	22.2	88.9
		Slightly Disagree	2	11.1	11.1	100.0
		Total	18	100.0	100.0	

Source: Own survey, 2017

4.6 Extent of practices, challenges and factors perceived by respondents

In the following part those practices, challenges and factors perceived as barriers to knowledge transfer by majority of ethio telecom respondents will be examined based on their mean average weight. Accordingly, ranking of barriers (practices, challenges and factors) and their significance will be presented.

In order to rank the practices, challenges and factors impacting knowledge transfer, the average mean response for each test item is calculated first. Then, the weight is calculated by dividing the average mean response of each test item by the sum of average responses for all test items under consideration.

4.6.1 Extent to which lack of practices were acknowledged as obstacles

In this category, lack of processes and procedures, lack of recognition scheme, and inefficient evaluation of training quality and content will be examined and ranked as perceived by ethio telecom employees. Table 4-30 below shows the weights of organizational practices impacting knowledge transfer.

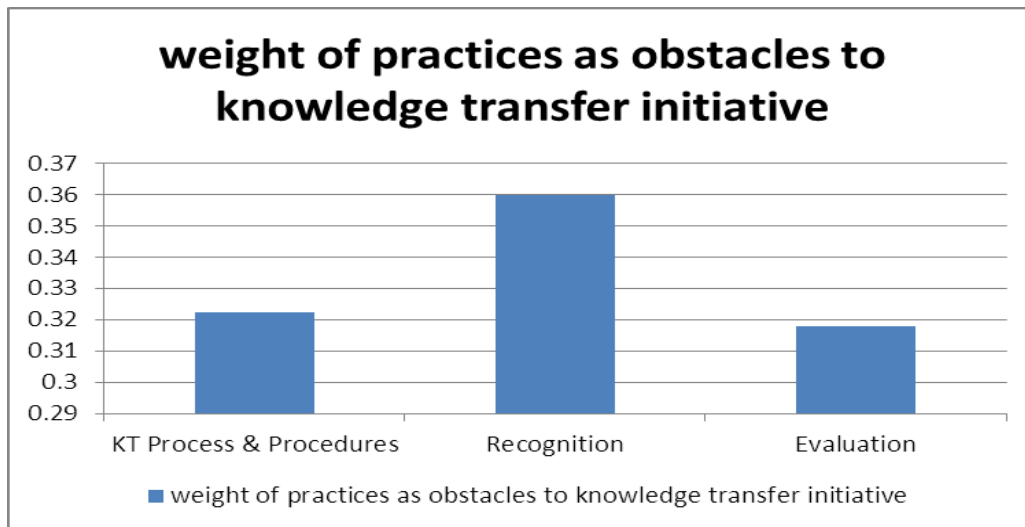
Table 4-31 Extent to which lack of practices were acknowledged as obstacles

Description	KT processes and procedures	Recognition	Evaluation
Total Response	69	69	69
Mean	3.1014	3.4638	3.058
Std. Deviation	1.30773	1.40984	1.40256
Weight	0.322283648	0.359942639	0.317773714

Source:

Own survey, 2017

Figure 4-8 Weight of the lack of organizational practices hindering knowledge transfer



Source: Own survey, 2017

As it is seen in the above figure, lack of proper recognition to knowledge transfer acts has been perceived as the most significant influencer to knowledge transfer effectiveness. Absence of proper Knowledge transfer processes and procedures have also been perceived as the second significant influencer while ineffective evaluation of training content and quality has been perceived as the least significant.

4.6.2 Extent to which Challenges were acknowledged as obstacles

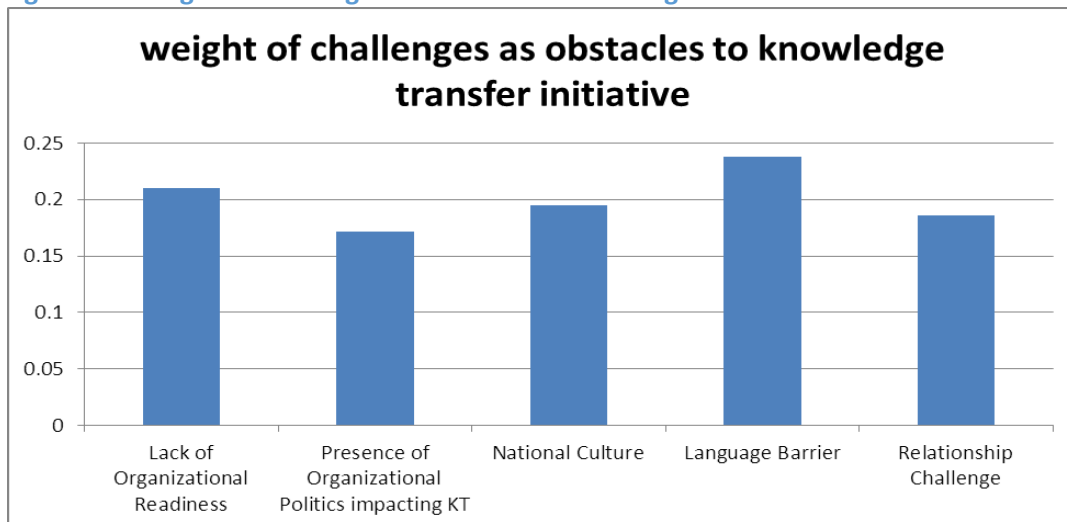
Challenges such as lack of organizational readiness, organizational politics, national culture differences, language barrier, and relationship challenges are examined and ranked accordingly. Table 4-31 below shows the weight of organizational challenges impacting knowledge transfer based on ethio telecom employees' perception.

Table 4-32 Extent to which challenges were acknowledged as obstacles

Description	Lack of Organizational Readiness	Organizational Politics	National Culture Difference	Language Barrier	Relationship Challenge
Number of respondents	69	69	69	69	69
Mean	2.4348	2.9130	2.6232	2.1014	2.7391
Standard Deviation	0.96220	0.95084	1.00149	0.95709	0.99487
Weight	0.190045249	0.227375566	0.204751	0.164027	0.213800905

Source: Own survey, 2017

Figure 4-9 Weight of challenges as barriers to knowledge transfer



Source: Own survey, 2017

Based on figure 4-9, it would be reasonable to deduce that presence of language barrier followed by lack of organizational readiness are the most significant challenges perceived by ethio telecom respondents. National culture differences and relationship challenges are the second significant challenges of knowledge transfer as perceived by ethio telecom respondents. Organizational politics is the least perceived challenge to knowledge transfer.

4.6.3 Extent to which factors were acknowledged as obstacles

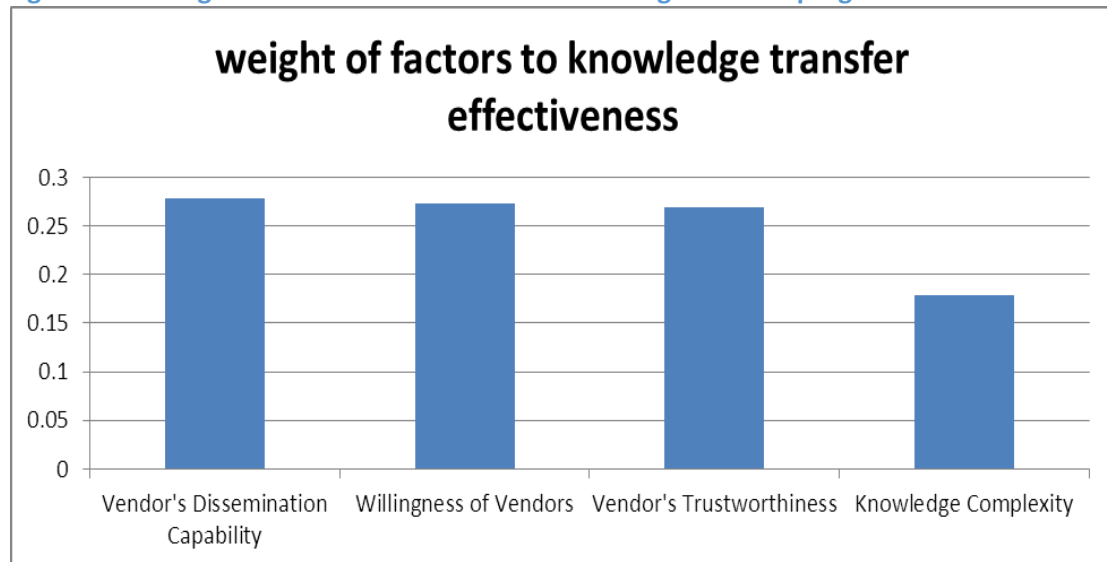
In this category, factors such as vendors’ dissemination capability, vendors’ willingness, vendors’ trustworthiness and knowledge complexity are considered. Table 4-32 below shows the weight of factors influencing knowledge transfer based on ethio telecom employees’ perception.

Table 4-33 Extent to which factors were acknowledged as difficulties

Description	Vendor's Dissemination Capability	Willingness of Vendors	Vendor's Trustworthiness	Knowledge Complexity
Number of respondents	68	69	69	69
Mean	3.3824	3.3188	3.2754	2.8261
Std. Deviation	1.15938	1.33387	1.22335	1.21215
Weight	0.264191776	0.259230897	0.255834859	0.220742467

Source: Own survey, 2017

Figure 4-10 Weight of factors as obstacles to knowledge transfer program



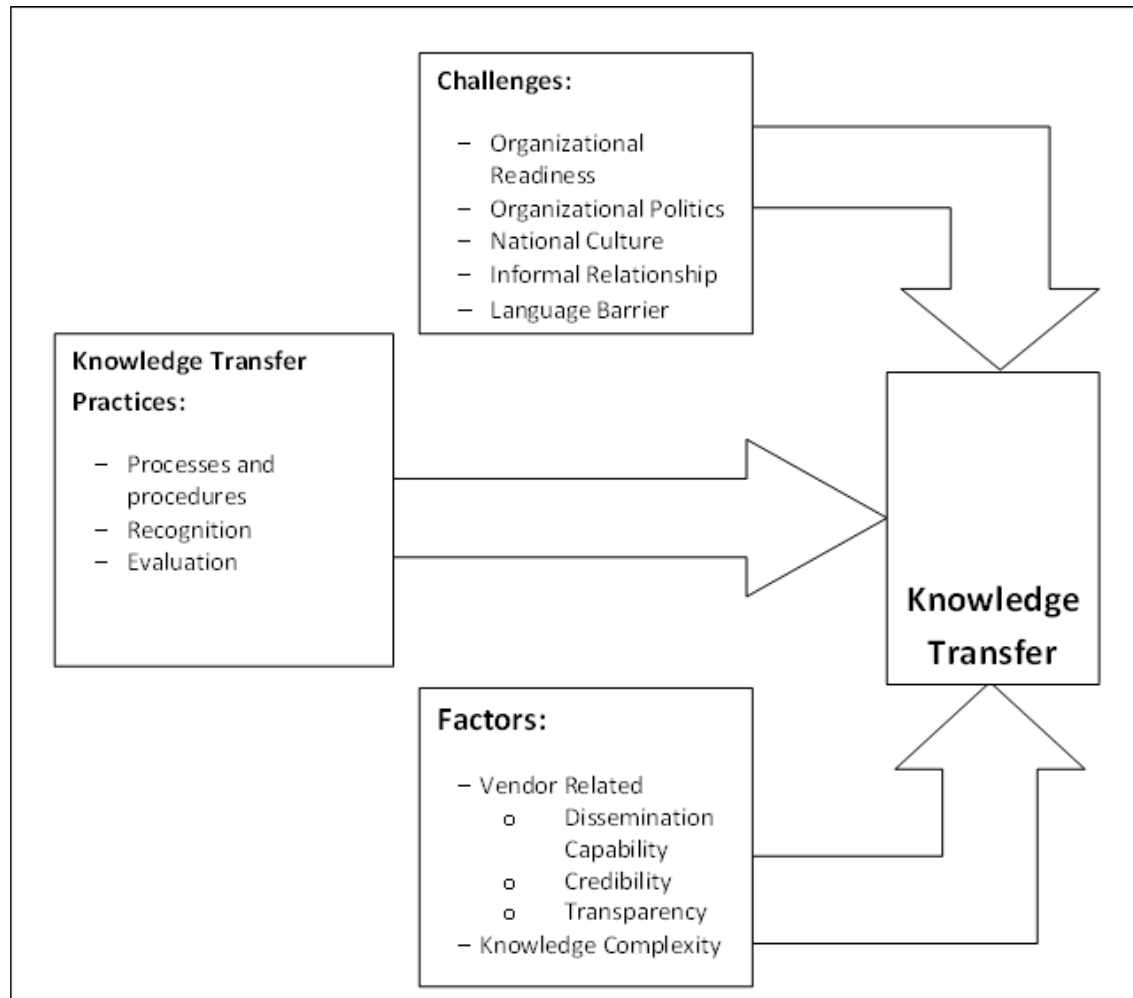
Source: Own survey, 2017

According to the weight of factors shown in the above figure, vendors’ dissemination capability is the most significant factors as perceived by ethio telecom employees. The second significant factor is willingness of vendors followed by vendors’ trustworthiness. The least significant factor, as perceived by ethio telecom employees, is knowledge complexity.

4.7 Revised Conceptual Model

Based on the findings from the analysis above, the preliminary conceptual framework on practices, challenges and factors of knowledge transfer in telecom projects is revised as shown in figure 4-11 below.

Figure 4-11 Revised conceptual model on knowledge transfer in telecom projects.



Source: Own survey, 2017

From the above revised conceptual framework, it is apparent that there are 3 set of knowledge transfer practices affecting knowledge transfer in ethio telecom as perceived by employees. These include, absence of clear processes and procedures to support knowledge transfer, lack of recognition schemes to motivate employees, and inefficient evaluation of training content and quality contributing to ineffective knowledge transfer from vendors to clients. Practices such as strategies, lessons learning, IT, opportunities to

formal and informal training, and knowledge repository are not considered as affecting practices by the respondents.

Besides there are 5 set of challenges hampering knowledge transfer in ethio telecom in the current setup as perceived by ethio telecom and vendor respondents. These include organizational readiness, organizational politics, national culture, informal relationships and language barrier. Organizational readiness mainly encompasses negligence, lack of formalized knowledge transfer approaches, lack of willingness and motivation and lack of clear picture on the kind of knowledge transferred and associated budget. Whereas organizational politics is informal efforts used in organizations to achieve other targeted objectives. According to the perception of ethio telecom and vendors' employees' organizational culture is not labeled as a challenge to knowledge transfer.

Likewise, the revised framework also revealed the factors that affect knowledge transfer as perceived by ethio telecom and vendor employees. These comprise of knowledge related factors (Knowledge complexity) and vendor related factors (dissemination capability, credibility, and transparency). According to the perception of ethio telecom and vendors' employees' factors such as vendors' capability, client related factors, knowledge transfer mechanisms and relationships are not categorized as affecting factors.

Chapter 5. Conclusion and Recommendation

5.1 Conclusion

This research empirically investigated and verified the practices, challenges and factors of knowledge transfer in offshore outsourced telecom projects. It is found, as predicted, the knowledge transfer practices in ethio telecom offshore outsourced projects are not full-fledged. The major areas of findings in the current knowledge transfer practices are lack of established processes and procedures, lack of incentives to knowledge transfer initiatives and inefficient evaluation of training content and quality.

The company is also going through lots of challenges hindering the effectiveness of knowledge transfer in the current project settings. The major findings comprise; lack of organizational readiness, undesirable organizational politics, national culture differences, language barrier and inappropriate client-vendor relationships. All of these have been deemed to bring great challenge towards ethio telecom's knowledge transfer practice in offshore outsourced projects.

Although most of ethio telecom and vendors project work force are academically accomplished, the findings from this study demonstrate that the existence of a variety of aptitude factors hamper the current knowledge transfer progression. Some of the factors affecting knowledge transfer include; limited capability of Vendors' to disseminate knowledge, lack of willingness and trustworthiness on vendor teams, and complexity of transferred knowledge.

The researcher hopes that this study will contribute to ethio telecom's understanding of the current knowledge transfer practices, challenges and accompanying factors impacting knowledge transfer in offshore outsourced projects. This understanding possibly will also be used to gain a competitive edge and advance the company's position in the telecom sector.

5.2 Recommendation

5.2.1 Recommendation to Future Studies

The researcher hopes that this paper stimulates future researches on this intricate but exciting topic. First, some of the limitations outlined in this study can be eliminated by adding other measurement instruments such as, interview and observation protocol for data triangulation and by extending the intervention with inclusion of regional employees and if possible, other service providers.

In addition, a number of factors that are not included in this study can be considered in future researches to provide an all-inclusive view of knowledge transfer. Client related factors, such as age, motivation and experience; vendor related factors such as experience and accessibility; knowledge related factors such as tacitness and ambiguousness are not examined in this study.

Certain challenges like organizational readiness, organizational politics and organizational culture are also too broad to localize and classify limitations. Hence, in the future, it would be ideal to itemize and analyze these variables in detail to get a more clear insight. Likewise, organizational practices, such as project and program teams' arrangement, Continuous assessment of project staffs, and allocation of adequate training time are not covered in the present study.

Hence together with other unnoticed variables, the aforesaid variables shall be considered in future studies in order to provide a clear and comprehensive view of the practices, challenges and factors of knowledge transfer in offshore outsourced telecom projects. It would also be noteworthy if other telecom service providers are considered in future studies.

5.2.2 Recommendation to Ethio Telecom

In order to reduce the problems associated with knowledge transfer practices, accompanied challenges and variety of factors, the following recommendations are made to ethio telecom by the researcher;

- 1) The senior management shall focus on improving the current knowledge transfer practices by giving due attention to the following areas;

- i. The company shall have a mature knowledge transfer process and procedures to support offshore outsourced projects.
 - ii. There shall be a framework for addressing incentive schemes. The use of incentive system is needed to motivate and encourage employees to share knowledge freely. Besides the current practice of giving incentives based on performance and milestone achievement, it would be advisable to offer incentives based on knowledge transfer. The incentive scheme can be either in monetary terms or non-monetary terms.
 - iii. Continuous evaluation of training contents and their quality shall be implemented in project settings by deploying system based feedback mechanism to collect valuable information from trainees and stakeholders.
- 2) The organization shall also look in to the challenges of knowledge transfer by giving special consideration to the following core points;
- i. The level of organizational readiness to embark on knowledge transfer in offshore outsourced projects has to get better. Especially on devising a formalized knowledge transfer approach, developing a knowledge base for lessons learned, improving willingness and motivation, getting clear picture on the kind and depth of knowledge, and assigning core and support teams to implement knowledge transfer.
 - ii. Reducing the impact of undesirable organizational politics to enhance knowledge transfer and instilling a no-blame culture.
 - iii. Develop a mechanism to cope with the impact brought about by the difference in national culture between client teams and vendor teams.
 - iv. Put a strict requirement on the vendor teams' language proficiency in order to profoundly improve the effectiveness of knowledge transfer.
 - v. Formalize all kind of relationships with vendors to avoid informal contracts and mistrusts.

- 3) In relation to the factors influencing knowledge transfer;
 - i. Education and experience of vendor staffs shall be assessed carefully ahead of project commencement. Besides, the performance of vendor teams shall be monitored by ethio telecom including their capability to disseminate knowledge, willingness and trustworthiness to share quality knowledge.
 - ii. In order to deal with knowledge complexity, ethio telecom teams shall get an exhaustive non-vendor specific technology trainings. It can help to nurture the knowledge of employees on non-proprietary design principles and unbiased business practices in a particular area of development.

5.2.3 Recommendation to Vendors

To enhance the effectiveness of knowledge transfer practices, the following recommendation are made to vendors' teams:

1. Vendors' management shall work on improving the language proficiency of their international staffs.
2. It is necessary to build a good relationship with client teams based on formal contracts to manage the project properly and informal ties to improve the working relationships between parties.
3. In relation to vendor related factors;
 - i. Dissemination capability of vendor teams needs to develop in terms of communication skill, selection of medium and capacity building.
 - ii. Vendors' shall also improve their credibility irrespective of their relationship with client teams through transfer of honest and substantiated theoretical and practical knowledge.
 - iii. Management group of the vendors' teams has to work on the willingness of their employees to transfer quality knowledge both in training environments and on-the-job mentoring through creation of a friendly and supportive environment and nurturing group cohesiveness.

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Appendix: Questionnaire

KNOWLEDGE TRANSFER STUDY

QUESTIONNAIRE

Dear Respondent:

The purpose of this Thesis is to investigate and analyze the practices and challenges of knowledge transfer in offshore outsourced telecom projects as part of the fulfillment for the master of art in project management. This study has a huge importance in contributing towards a better and inclusive understanding of the barriers to knowledge transfer. It also will have undisputed contribution to existing theory. Most of all, it will have great benefit in terms of improving the knowledge transfer practices in ethio telecom's offshore outsourcing projects.

Direction:

This survey asks for your perception and experience about practices, challenges and factors of knowledge transfer in ethio telecom's offshore outsourced projects. Because it asks for your judgment, there is no right or wrong answers. Please respond based on your own judgment, regardless of what others expect or what is socially acceptable. Your responses will be held in strict confidence and we guarantee complete anonymity. I would like to thank you for taking the time out of your busy life to respond to the attached questionnaire. Your answers are of the greatest importance to the success of this study.

Please complete the questionnaire within two days.

Thank you for your time and effort.

Contact Information:

Email: sintufish@gmail.com

This questionnaire consists of 7 pages | Please answer all questions

Part-I:

Please respond to the following requests either by checking the appropriate box or filling on the space provided to the right of the corresponding statement.

A. Basic Information

1. What age group do you belong to?

18 -30 years 31 -40 Years 41 – 50 Years 50+

2. Gender: Male Female

B. Educational Background

1. What is the highest level of education you have received?

Certificate/Diploma First Degree Master’s degree Doctoral

C. Employment Background

1. Name of your current employer: _____

2. Which department do you belong to: _____

Part-II:

Please evaluate the Practices, Challenges and Factors of knowledge transfer from the context of ethio’s current offshore outsourced projects indicating your agreement or disagreement by checking the appropriate box to the right of the corresponding survey statement. Use the following rating guidelines.

1 = strongly agree

2 = slightly agree

3 = neither disagree nor agree

4 = slightly disagree

5 = strongly disagree

A. Knowledge Transfer Practices

	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
KT Strategy, KT Procedures and Processes						
1	There exists a knowledge transfer strategy to support offshore outsourced projects.					
2	There are established processes and clear procedures to facilitate project knowledge transfer					
Lessons Learned, Project Knowledge Repository						
3	Lessons learned that attempt to document and share project best practices are practiced properly.					
4	Project knowledge repository is used to enhance project knowledge transfer					
Recognition, Evaluation, Implementation of IT, Opportunities for formal and informal Training						
5	There is a reward and incentive system for knowledge transfer.					
6	Training content and quality is continuously evaluated to make sure it is both current and effective, making changes accordingly.					
7	IT infrastructures are available to support knowledge transfer in outsourcing project environments.					
8	Opportunities are created for both formal and informal KT mechanisms (brainstorming, conferences, seminars, exhibitions, learning resource centers, data mining tools, mentoring, coaching, project reviews, intranet, trainings...)					

B. Challenges of Knowledge Transfer

	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
Organizational Readiness						
9	The organization neglects the importance of knowledge transfer in offshore outsourced projects.					
10	The organization lacks formalized knowledge transfer approaches to accurately and efficiently capture, translate, organize, and store information.					
11	Lessons learned from project experiences are inadequate.					
12	Employees lack willingness and motivation to capture and share knowledge					
13	Issues related to confidentiality, copy right and reliability were not addressed in the organization.					
14	Change management program was not well-organized to facilitate knowledge transfer.					
15	The organization lacks clear picture on the type of knowledge and associated budget to develop and implement the knowledge transfer strategy					
16	The organization is without a core and support teams to implement knowledge transfer					
Organizational Politics						
17	There is a trend of criticizing ideas and people in the company.					
18	Playing blame game is common in the company.					
19	Supervisors usually Identify who's at fault and publicly ridicule them.					
20	Respect is given for the loudest opinion.					
21	Employees share ideas and information expecting benefit from it.					
22	There is a trend of not letting employees talk within the company.					
Organizational Culture						
23	The atmosphere of the company helps employees trust others					

24	Project coordinators and managers trusts employees' working capability					
25	The senior managers support employees to provide alternative perspectives and contribute their efforts					
26	The company encourages employees' learning and tolerates employees' mistakes					
	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
National Culture Challenges						
27	Working with vendors having different cultural backgrounds was a major challenge.					
28	It is easier to capture knowledge from local vendors compared with foreign vendors					
29	Incompatibility with foreign vendors in work behavior and decision making process created a major challenge for knowledge transfer.					
30	Considerable time is spent on reviewing, clarifying, and resolving the meaning of subject areas resulting in delayed knowledge transfer.					
Language Barrier						
31	Language barrier between clients and vendors created a challenge for us to understand certain issues and definitely hinder our knowledge transfer effort.					
32	Even if vendors can speak English language, it is difficult to understand their accent.					
Relationship Challenges						
33	Relationship between client and vendor are ruined so that it affected transfer of technical and business knowledge.					
34	Relationships are based on informal contract and mistrust so that it hampered transfer of technical and business knowledge.					

C. Factors of Knowledge Transfer

a. Vendor Related

	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
Dissemination Capability, Willingness, Technical Capability, Trustworthiness						
35	Vendors are capable of disseminating knowledge without difficulty.					
36	Vendors were willing and transparent so that they usually allowed access to their knowledge-base.					
37	Vendor's have the required capability and expertise to provide the needed knowledge					
38	Vendors were reliable and trustworthy to transfer quality knowledge.					

b. Client Related

	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
Perception, Role Ambiguity, Absorption Capability, Learning Intent						
39	Employees have good perception about the benefits of capturing and disseminating knowledge in the company.					
40	Employees' roles within the project office were clear so that everybody knows the kind of knowledge needed in his work area.					
41	Project staffs have the desired competence to absorb new knowledge from vendors.					
42	Employees have the desire, commitment and intent to learn and acquire new knowledge from vendors.					

c. Knowledge Related

	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
Complexity of Knowledge						
43	Some of the knowledge possessed by vendors was complex, and thus hard to be transferred.					
44	Some knowledge was really complex and took time to understand in spite of attending several seminars, workshops and trainings offered by vendors.					

d. KT Mechanism Related

	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
Formal, Informal						
45	knowledge is formally and easily transferred through documents, meetings and trainings					
46	On-the-job training and mentoring are more effective to capture project knowledge from vendors					
47	Knowledge transfer can be enhanced through the use of a variety of social events					
48	Social relationships and informal ties enabled tacit knowledge transfer					

e. Relationship Related

	Survey Statements	Strongly Agree	Slightly Agree	Neither Disagree or Agree	Slightly Disagree	Strongly Disagree
Relationship between vendor and client						
49	Good relationships with vendors allowed smooth transfer of technical and business knowledge.					
50	Relationships were based on formal contract and trust and hence allowed smooth transfer of technical and business knowledge					

