


**Addis Ababa University**

**College of Business and Economics School of Commerce**

**Department of Project Management**

# Opportunities and Challenges of Managing Virtual Projects: Case of MODETH Outsource PLC

**A Thesis Submitted to the School of Commerce in Partial Fulfillment of the Requirements for the Award of Degree of Masters of Arts in Project Management**

By: Netsanet Eshetu

Advisor: Dr. Adane Atara

October, 2019

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**Approved by Board of Examiners**

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| Advisor | Signature | Date |
| _____ | _____ | _____ |
| Examiner (Internal) | Signature | Date |
| _____ | _____ | _____ |
| Examiner (External) | Signature | Date |

# Statement of Declaration

I, the undersigned, declare that the project work entitled 'Opportunities and Challenges of Managing Virtual Projects: Case of MODETH Outsource PLC' is my original work and has not been presented by any other researcher on the same topic.

**Declared by:**

Name: Netsanet Eshetu Mengistu

Signature: _____

Date _____

# ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE

# DEPARTMENT OF PROJECT MANAGEMENT

## STATEMENT OF CERTIFICATION

This is to certify that Netsanet Eshetu has carried out this research work on the topic entitled 'Opportunities and Challenges of Managing Virtual Projects: Case of MODETH Outsource PLC' under my supervision. This work is original in nature. It is sufficient for submission for the partial fulfillment for the award Degree of Masters of Art in Project Management submitted for examination.

**Dr. Adane Atara** **Signature_____ Date_____**

# Table of Contents

Table of Contents ..... i

Acknowledgements ..... v

List of Tables ..... vi

List of Figures ..... vii

Abbreviations and Acronyms ..... viii

Abstract ..... ix

Chapter One: Introduction ..... 1

1.1 Background of the study ..... 1

1.2 Background of the organization ..... 2

1.3 Statement of the Problem ..... 2

1.4 Objective of the study ..... 4

1.4.1 General Objective ..... 4

1.4.2 Specific Objective ..... 4

1.5 Research Questions ..... 4

1.6 Significance of the Study ..... 4

1.7 Scope of the Study ..... 5

1.8 Limitation of the Study ..... 5

1.9 Organization of the Study ..... 5

Chapter Two: Literature Review ..... 6

2.1 Overview of project and Project Management ..... 6

2.1.1Project ..... 6

2.1.2. Project Life Cycle and Project Phases ..... 7

2.1.3 Project Management ..... 9

2.1.4. Effective Project Management ..... 10

2.1.5. Project management Knowledge Area ..... 11

2.1.5.1 Project Integration Management ..... 11

2.1.5.2 Project Scope Management ..... 12

2.1.5.3 Project Time Management ..... 12

2.1.5.4 Project Cost Management ..... 13

2.1.5.5 Project Quality Management ..... 14

2.1.5.6 Project Human Resource Management ..... 14

2.1.5.7 Project Communications Management ..... 15

2.1.5.8 Project Risk Management ..... 15

2.1.5.9 Project Procurement Management ..... 16

2.1.5.10 Project Stakeholder Management ..... 16

2.1.6 Conceptual Framework ..... 17

2.2 Overview of Virtual Project Management ..... 18

2.2.1 Virtual Project Management ..... 18

2.2.2 Advantages of virtual teams, and of virtual project management ..... 18

2.2.3 Opportunities of Virtual Project Management ..... 19

2.2.4 Factors in a successful virtual team ..... 19

2.2.4.1 Trust ..... 20

2.2.4.2 Communications ..... 20

2.2.4.3 Leadership ..... 21

2.2.4.4 Goals ..... 22

2.2.4.5 Technology ..... 22

2.2.5 Challenges of Virtual project Management ..... 22

2.3 Virtual Organizations ..... 23

2.4 Virtual Team ..... 24

2.4.1 The Advantages and Disadvantages of Virtual Teams ..... 26

2.4.2 Virtual Teams versus Face to Face Teams ..... 27

Chapter Three: Research Design and Methodology ..... 29

3.1 Research Design and Approach ..... 29

3.2 Population of The study ..... 29

3.3 Sources of Data ..... 30

3.4 Methods of Data Collection ..... 30

3.5 Method of Data Presentation and Analysis ..... 31

3.6 Data Validity and Reliability ..... 31

3.7 Research Ethics ..... 31

Chapter Four: Data Presentation and Analysis ..... 33

4.1 Demographic Detail of Respondents..... 33

4.2. ICT Policy ..... 36

4.3. Knowledge, Attitude and Practice..... 38

4.4. Infrastructure ..... 40

4.5. Opportunities of Virtual Project Management ..... 41

4.6. Challenges of Virtual Project Management ..... 42

Chapter Five: Conclusion and Recommendation ..... 45

5.1 Conclusion..... 45

5.2 Recommendation..... 45

Reference ..... 47

Appendix I

Appendix II

Appendix III

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# List of Tables

TABLE 4.1SEX OF RESPONDENTS ..... 33

TABLE 4.2RESPONDENTS' AGE GROUP AND EXPERIENCE OF TEAM MEMBERS ..... 34

TABLE 4.3EDUCATIONAL LEVEL ..... 34

TABLE 4.4 POSITION OF RESPONDENTS ..... 35

TABLE 4.5 EXPERIENCE AS A MANAGER ..... 35

TABLE 4.6 EXISTENCE OF ICT POLICY IN THE COMPANY ..... 36

TABLE 4.7 EXISTENCE OF ICT POLICY IN THE COMPANY * INTRODUCTION OF ICT POLICY CROSS-TABULATION ..... 36

TABLE 4.8 INTRODUCTION AND IMPLEMENTATION OF ICT POLICY ..... 37

TABLE 4.9 EXISTENCE OF KNOWLEDGE, KNOWLEDGE SHARING SYSTEM, REFRESHMENT TRAINING AND TECHNICAL SKILL ..... 38

TABLE 4.10 EXISTENCE OF POSITIVE ATTITUDE ..... 40

TABLE 4.11 EXISTENCE OF MODERN INFRASTRUCTURE ..... 40

TABLE 4.12OPPORTUNITIES OF VIRTUAL PROJECT MANAGEMENT ..... 41

TABLE 4.13 CHALLENGES OF VIRTUAL PROJECT MANAGEMENT ..... 42

# List of Figures

FIGURE 2. 1 TYPICAL COST AND STAFFING LEVELS ACROSS A GENERIC PROJECT LIFE CYCLE STRUCTURE ..... 7

FIGURE 2. 2 SINGLE-PHASE PROJECT ..... 9

FIGURE 2. 3 CONCEPTUAL FRAMEWORK ..... 17

FIGURE 2. 4 ADVANTAGES OF VIRTUAL TEAMS ..... 27

FIGURE 2. 5 MANAGERS COMPETENCY TO MANAGE VIRTUAL PROJECTS ..... 39

# Abbreviations and Acronyms

ICT – Information and Communication Technology

IT – Information Technology

MODETH – MODETH is the name of the company that is to say Modern Ethiopia, but the Ethiopian Trade and Industry does not allow organizations to use the word ‘Modern’ as a qualifier to Ethiopia. So the owners decided to take ‘MOD’ from modern and ‘ETH’ from Ethiopia.

PMBOK – Project Management Body of Knowledge

SPSS – Statistical Package for Social Sciences

VP – Virtual Project

VPM – Virtual Project Management

# Abstract

*The aim of this study was assessing the opportunities and challenges of virtual project management by taking the case of MODETH Outsource PLC. The research followed a mixed approach to collect the necessary data from its respondents. Data was collected from project team members, managers, and company documents. 22 virtual project team members and 7 virtual project managers have participated in the study. All participants took part in filling the questionnaire which encompasses demographic detail, ICT policy, knowledge, skill and attitude of respondents, opportunities and challenges of virtual project management. All managers have been interviewed; telephone interview was conducted for the Dubai managers. The study identified cost saving and multi-cultural teams support to global clients as the major opportunities of the company in managing virtual projects. On the other hand, structure, communication, conflict management and resolution, and trust are identified as the major challenges the company faced in managing virtual projects. The study recommends the company, project managers and project team members to work in collaboration in order to benefit the best opportunities out of virtual project management. The company should minimize its challenges through capacitating its team members and managers, using up to date hardware technology, and devising communication channels and disseminating up to date information to all of its project members.*



*Key Words: virtual, team, project management, Knowledge area, opportunity, challenge*

# Chapter One: Introduction

## 1.1 Background of the study

Most projects today are trying to find new and innovative ways to be more competitive and efficient, and it is hardly surprising these often involve the use of new technologies. Without question, the emergence of new information and communication technologies has dramatically altered the way most projects function. As projects change the ways in which people communicate with one another, how they actually do their jobs changes as well. The workplace of the 21st Century is a quite different place than that even a few years ago. (Kimball, 1997)

Today it is more common for projects to be large, dynamic, and to evolve and change as circumstances dictate. Given these increased sources of complexity and complication for many (perhaps most) teams today, by adding the additional problems of having teams that are distributed (not co-located), working at different times, and perhaps working from different countries and time zones, and even with different native languages, one can see how quickly the levels of complexity dramatically increase. Another interesting aspect of projects today is that many workers on different teams or in matrix types of projects will have multiple-reporting relationships and will have different managers to report to for different projects on which they are working (Kimball, 1997).

As cited in Nozariet. al (2016), Guillen, 2001 stated advancements in information technology together with rapid growth of internet have led to development of globalization. These advancements have caused failure of time and geographical barriers to the organizations which seek business and economic growth. This indicates regardless of time and geographical location business organizations are rapidly growing.

Progressive realization of world economy has led to increase of interaction and cohesion of economic systems which generally do not enable to coexist due to time and place limitations. As the result of increasing interactions in these systems, most of organizations have developed flexible and dynamic structures which can be immediately adjusted with customers' needs (Jarvenpaa & Leidner, 1994). This implies the extent of structural flexibility that is being manifested in today's dynamic organizations.

As cited in Ebrahimet. Al (2009), Cascio, 2000 stated responding to the increasing de-centralization and globalization of work processes, many organizations have responded to their dynamic environments by introducing virtual teams that collaborate by communication technologies across geographical, temporal, cultural and organizational boundaries to achieve common goal in their organizations outputs. Virtual teams are growing in popularity. Additionally, Hertel *et.al*. 2005, stated the rapid development of new communication technologies such as the internet has accelerated this trend so that today, most of the larger organization employs virtual teams to some degree.

## 1.2 Background of the organization

MODETH Outsource PLC is a technology focused company that started off as an outsourcing center in January, 2008 based in Addis Ababa, Ethiopia.

MODETH handles different virtual IT projects mainly event website development projects by developing a virtual project team in Addis Ababa and Dubai.

## 1.3 Statement of the Problem

Virtual organizations have a paramount advantage for the social, political and economic development of a country. Clients of virtual organizations are mainly international companies which enable them to play a great role in social interaction and knowledge transfer. They are also

good sources of foreign currency. As the National Bank of Ethiopia frequently reports, foreign currency is one of the greatest challenges in the importing industry of the country. However, the sector is not growing as expected to support the country's economy. There are only few virtual organizations in the country and MODETH Outsource PLC is one of these.

MODETH Outsource PLC designs and implements various virtual IT projects using virtual project teams that are located in various geographic locations. The assignment of virtual project team members in various projects helps MODETH to use its human resources more efficiently and cost effective. On the other hand, as the preliminary discussion with the key informant groups, some challenges were observed including cultural difference, language barriers, information redundancy as a result of multi-channel communication. However, to the best of the researcher's knowledge, sufficient research is not yet conducted in the area of virtual project management.

The purpose of this study is to provide a more thorough assessment of the link between the existing knowledge and organizational performance than currently exists in the literature. Moreover the research will identify the causes, factors and processes which are influential in the management of existing knowledge with in the areas of learning culture, knowledge building and organizational performance, like to find out the opportunities and challenges of virtual project management so as to come up with evidence based recommendation that solve the existing gaps and promote the sectors' development.

## 1.4 Objective of the study

### 1.4.1 General Objective

The general objective is assessing opportunities and challenges of virtual project management in MODETH.

### 1.4.2 Specific Objective

- To assess Issues related to ICT policy, rules, regulations, fairness (equity) in managing employees.
- To assess the knowledge, attitude, practice and perspective related to virtual project management (VPM).
- To identify the existence of relevant technology for project management.
- To identify opportunities of virtual project management.
- To identify the challenges of virtual project management.

## 1.5 Research Questions

1. Are there ICT policy, rules, regulations, fairness (equity) in managing employees?
2. To what extent does the project team have the required knowledge, attitude, practice and perspective related to virtual project management (VPM)?
3. To what extent does the organization have relevant technology for project management?
4. What are the opportunities of virtual project management?
5. What are the challenges of virtual project management?

## 1.6 Significance of the Study

The researcher will present the findings of the study to the organization. MODETH Outsource PLC. This will enable the company to have an outlook of the existing opportunities and challenges of managing virtual projects and indicates areas of improvement. In addition, since a copy the

research document will be available in the University's library, it will serve as an input for students and researchers for further research related to virtual project management.

## 1.7 Scope of the Study

The scope of the study is limited to assessing virtual project management in MODETH. Specifically, the research focused on opportunities and challenges of virtual projects conducted both in Addis Ababa and Dubai branches of MODETH.

## 1.8 Limitation of the Study

The research faced lack of sufficient time and literatures of virtual project management in Ethiopian context. In addition, the researcher did not get the chance to observe the work environment of the Dubai branch.

## 1.9 Organization of the Study

This research is organized in five chapters. Chapter one deals with the introduction part includes the background of the study, background of the organization, statement of the problem, research questions, objectives of the study, significance, scope and limitation of the study, and organization of the study. Chapter two deal with review of related literatures. Chapter three describes research design and methodology. Chapter four discusses data presentation, analysis and interpretation while the fifth chapter is the summary and conclusions from the findings and recommendation.

# Chapter Two: Literature Review

## 2.1 Overview of project and Project Management

### 2.1.1Project

A project is a temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates that a project has a definite beginning and end. The end is reached when the project's objectives have been achieved or when the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists. (PMBOK, 2013).

According to Williams (2008), a project is distinguished from regular work in that it's a one-time effort to change things in some way. So the creation of a new web site would be a project; ongoing maintenance and minor updates would not. As the above definitions reveal, a project is a time based undertaking conducted within a specified time period.

As explained in PMBOK (2013), every project creates a unique product, service, or result. The outcome of the project may be tangible or intangible. Although repetitive elements may be present in some project deliverables and activities, this repetition does not change the fundamental, unique characteristics of the project work. The idea of project uniqueness is strengthened in Munk-Madsen (2010) that considered information system project development as a task which is always unique, at least to the actual developers. If not so, they could solve the task once and just press "copy" for the rest. The feature of uniqueness entails that the task must be delimited both in scope and time. This delimitation may not be entirely clear in the beginning of the project, and it may change during the course of the project. Similarly, Heerkens (2002) stated that a project is a unique, one-time undertaking that will never again be done exactly the same way, by the same people, and within the same environment. The definitions imply that some projects like Websites can be

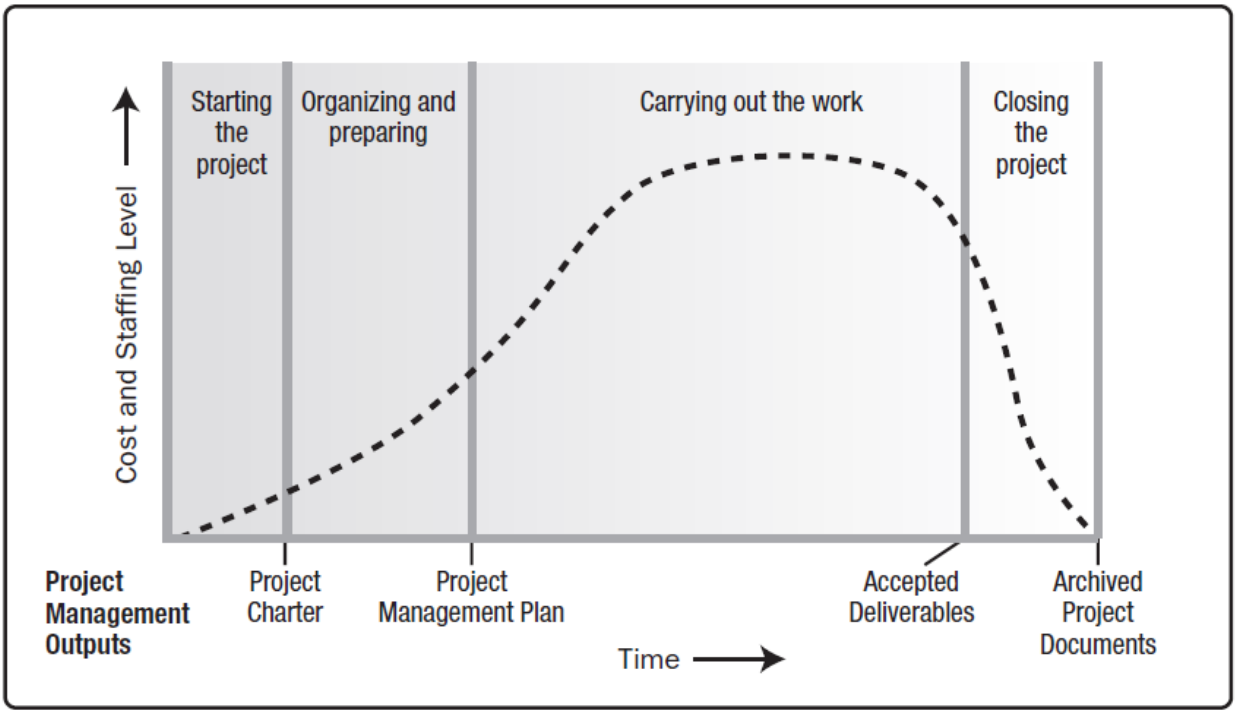
developed with the same or similar tools and by the same or different teams. However, each Website project remains unique with a different design, different purpose, different stakeholders, different target users, and so on.

### 2.1.2. Project Life Cycle and Project Phases

According to Martinic et al (2012), a project life cycle is a collection of sequential and sometimes overlapping project phases. Regardless of size and complexity, all projects can be mapped to generic life cycle structure as illustrated in Fig. 1:

- Starting the project,
- Organizing and preparing,
- Carrying out the project work, and
- Closing the project

*Figure 2. 1 Typical Cost and Staffing Levels across a Generic Project Life Cycle Structure*



A project phase is a collection of logically related project activities that result with completion of one or more deliverables. A phase may emphasize processes from a particular project management process group, but it is likely that most or all processes will be executed in some form in each phase. The phase structure allows the project to be segmented into logical subsets and provides a formal basis for control. Each phase is formally initiated to specify what is allowed and expected for that phase. The beginning of a phase is also a time to revalidate earlier assumptions, review risks and define in more detail the processes necessary to complete the phase deliverables. The project phase is generally concluded and formally closed with a review of the deliverables to determine completeness and acceptance. (Martinic et al., 2012)

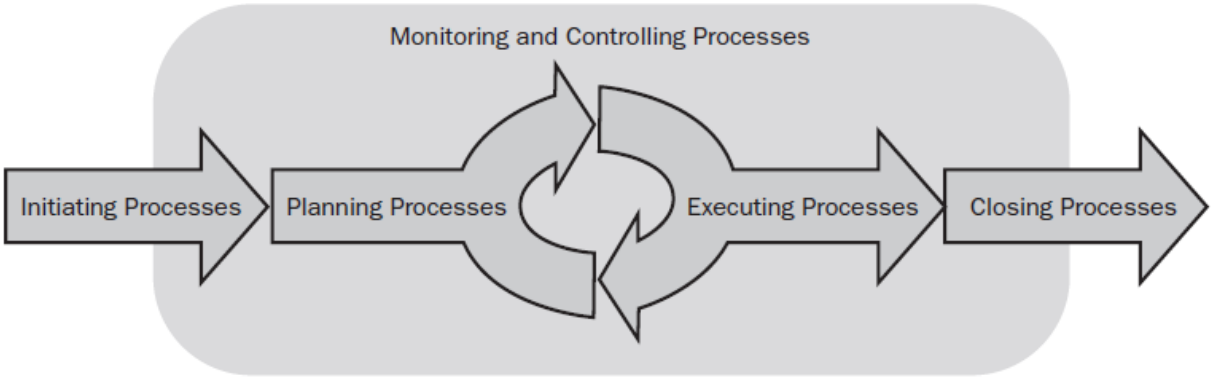
BMBOK, 2013 ($5^{th}$ ed)

The phase structure allows the project to be segmented into logical subsets for ease of management, planning, and control. The number of phases, the need for phases, and the degree of control applied depend on the size, complexity, and potential impact of the project. Regardless of the number of phases comprising a project, all phases have similar characteristics:

- The work has a distinct focus that differs from any other phase. This often involves different organizations, locations, and skill sets.
- Achieving the primary deliverable or objective of the phase requires controls or processes unique to the phase or its activities.
- The closure of a phase ends with some form of transfer or hand-off of the work product produced as the phase deliverable. This phase end represents a natural point to reassess the activities underway and to change or terminate the project if necessary. This point may be referred to as a stage gate, milestone, phase review, phase gate or kill point. In many cases, the closure of a phase is required to be approved in some form before it can be considered closed.

There is no single ideal structure that will apply to all projects. Although industry common practices will often lead to the use of a preferred structure, projects in the same industry—or even in the same organization—may have significant variation. Some will have only one phase, as shown in Figure 2-10. Other projects may have two or more phases.

*Figure 2. 2 Single-Phase Project*




## 2.1.3 Project Management

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. (PMBOK, 2013).

A project is a temporary attempt with finite and limited resources, and with objectives defined in advance by the ones who are financing and are interested in it. Generally, the final aim of a project is to create a unique tangible or intangible product (McGhee et al. 2007; PMI 2013). In this sense, temporary refers to the duration of the project, and implies a specific beginning and end date. A project is finished when its aims have been achieved, or when the project is ceased because the aimed targets cannot or will not be met, or when there is no longer need for the existence of the project. A project can also be terminated by the request of the client (PMI 2013).

Project management is the utilization and adaptation of specific knowledge, skills, practices, and tools in order to successfully meet the project requirements. According to the PMI (2013), the

usage of 47 groups of project management processes are necessary to execute project management properly.

These 47 groups are categorized into five extensive process groups which are initiating; planning; executing; monitoring and controlling; and closing. Additionally, project management consists of several tasks including, but not limited to the followings: requirement identification; plan and execution of the project based on stakeholders' needs and expectations; effective communication with all stakeholders; management of stakeholders toward realization of project requirements; creation of deliverables; balance among project restraints. Finding the balance among scope, schedule, quality, budget, risks and resources is one of the most complex parts of project management. If any of the listed factors change, one or more other factors are expected to be affected too (PMI 2013).

### 2.1.4. Effective Project Management

According to Mahesh et al. (2010) most information technology projects are fraught with problems and risk. A significant amount of these projects fail to materialize or bring about the full set of objectives they set out to deliver. Nearly all IT projects even while employing effective project management practices are affected by inherent risks and problems that arise in areas such as time, resources, scope and/or quality.

As cited in Mahesh et al (2010), researchers such as Tiwana and Kiel (2004) in a survey of managers of information systems presented six factors that contributed to risk and problems for IT projects. These are: inappropriate methodology use, lack of customer involvement, lack of formal management practices, uniqueness of the project, project complexity and volatility of requirements. These factors held true for traditional as well as globally outsourced IT projects.

## 2.1.5. Project management Knowledge Area

Project Management skills are organized around the ten knowledge areas described in the Project Management Body of Knowledge (PMBOK) published by the Project Management Institute.

### *2.1.5.1 Project Integration Management*

As defined in PMBOK guide, Project Integration Management includes the processes and activities required to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups. The following are the main activities indicated in the guide that ensure project integration management in any project.

- *Develop Project charter.* It is the process of developing a document that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities.
- *Develop Project Management Plan*. It is process of defining, preparing, and coordinating all subsidiary plans and integrating them into a comprehensive project management plan.
- *Direct and Manage Project Work.* It is the process of leading and performing the work defined in the project management plan and implementing approved changes to achieve the project's objectives.
- *Monitor and Control Project Work.* It is the process of tracking, reviewing, and reporting project progress against the performance objectives defined in the project management plan.
- *Perform Integrated Change Control*. It is the process of reviewing all change requests; approving changes and managing changes to deliverables, organizational process assets, project documents, and the project management plan; and communicating their disposition.

- *Close Project or Phase*. It is the process of finalizing all activities across all of the Project Management Process Groups to formally complete the phase or project.

### *2.1.5.2 Project Scope Management*

As described in the guide to PMBOK, project scope management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. Managing the project scope is primarily concerned with defining and controlling what is and is not included in the project. Project scope management processes include the following;

- *Plan Scope Management*- the processes of creating a scope management plan that documents how the project scope will be defined, validated, and controlled.
- *Collect Requirements*- the process of determining, documenting, and managing stakeholder needs and requirements to meet project objectives.
- *Define Scope*- the process of developing a detailed description of the project and product.
- *Create WBS*- the process of subdividing project deliverables and project work into smaller, more manageable components.
- *Validate Scope*- the process of formalizing acceptance of the completed project deliverables.
- *Control Scope*- the process of monitoring the status of the project and product scope and managing changes to the scope baseline.

### *2.1.5.3 Project Time Management*

Project Time Management includes the processes required to manage the timely completion of the project. According to PMBOK, project time management incorporates the following activities;

- *Plan Schedule Management*- It is the process of establishing the policies, procedures, and documentation for planning, developing, managing, executing, and controlling the project schedule.
- *Define Activities*- It is the process of identifying and documenting the specific actions to be performed to produce the project deliverables.
- *Sequence Activities*- It is the process of identifying and documenting relationships among the project activities.
- *Estimate Activity Resources*- It is the process of estimating the type and quantities of material, human resources, equipment, or supplies required to perform each activity.
- *Estimate Activity Duration*- It is the process of estimating the number of work periods needed to complete individual activities with estimated resources.
- *Develop Schedule*- It is the process of analyzing activity sequences, durations, resource requirements, and schedule constraints to create the project schedule model.
- *Control Schedule*- It is the process of monitoring the status of project activities to update project progress and manage changes to the schedule baseline to achieve the plan.

#### *2.1.5.4 Project Cost Management*

Project Cost Management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget. According to PMBOK cost management includes the below process

- Plan Cost Management— the process that establishes the policies, procedures, and documentation for planning, managing, expending, and controlling project costs.

- Estimate Costs— the process of developing an approximation of the monetary resources needed to complete project activities.
- Determine Budget— the process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline.
- Control Costs— the process of monitoring the status of the project to update the project costs and managing changes to the cost baseline.

#### *2.1.5.5 Project Quality Management*

As stated in the guide to project management body of knowledge, project quality management includes the processes that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. Project quality management works to ensure that the project requirements including product requirements are met and validated. These involves three processes;

- Plan Quality Management— the process of identifying quality requirements and/or standards for the project and its deliverables and documenting how the project will demonstrate compliance with quality requirements.
- Perform Quality Assurance— the process of auditing the quality requirements and the results from quality control measurements to ensure that appropriate quality standards and operational definitions are used.
- Control Quality— the process of monitoring and recording results of executing the quality activities to assess performance and recommend necessary changes.

#### *2.1.5.6 Project Human Resource Management*

The project team is comprised of the people with assigned roles and responsibilities for completing the project. They may have varied skill sets may be assigned full or part-time and may be added

or removed from the team as the project progresses. Thus, project human resource management includes the processes that organize, manage, and lead the project team.

As per the guide to PMBOK, project human resource management involves processes such as;

- Identifying and documenting specific project roles, responsibilities, required skills, reporting relationships, and creating a staffing management plan
- Confirming human resource availability, acquiring team member
- Improving competencies, team member interaction, and overall team environment to enhance project performance
- Developing team member i.e., providing feedback, resolving issues, and managing changes to optimize project performance

#### *2.1.5.7 Project Communications Management*

Project Communications Management includes the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and the ultimate disposition of project information. Effective communication creates a bridge between diverse stakeholders who may have different cultural and organizational backgrounds, different levels of expertise, and different perspectives and interests, which affect or have an influence upon the project execution or outcome. Project communication includes planning, managing, controlling of communication in the project.

#### *2.1.5.8 Project Risk Management*

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project. The objectives of

project risk management are to increase the likelihood and impact of positive events, and decrease the likelihood and impact of negative events in the project.

As described in guide to PMBOK, project risk management incorporates processes such as; how to conduct risk management; determining risks may affect the project; performing qualitative and quantitative analysis and developing options to enhance opportunities and to reduce threats. It also includes implementing risk response plans i.e., tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project.

#### *2.1.5.9 Project Procurement Management*

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team. The organization can be either the buyer or seller of the products, services, or results of a project. Project Procurement Management includes the contract management and change control processes required to develop and administer contracts or purchase orders issued by authorized project team members. It also includes controlling of any contract issued by an outside organization (the buyer) that is acquiring deliverables from the project performing organization (the seller), and administering contractual obligations placed on the project team by the contract. Project Procurement Management includes activities like; planning, conducting, controlling and closing of project procurement.

#### *2.1.5.10 Project Stakeholder Management*

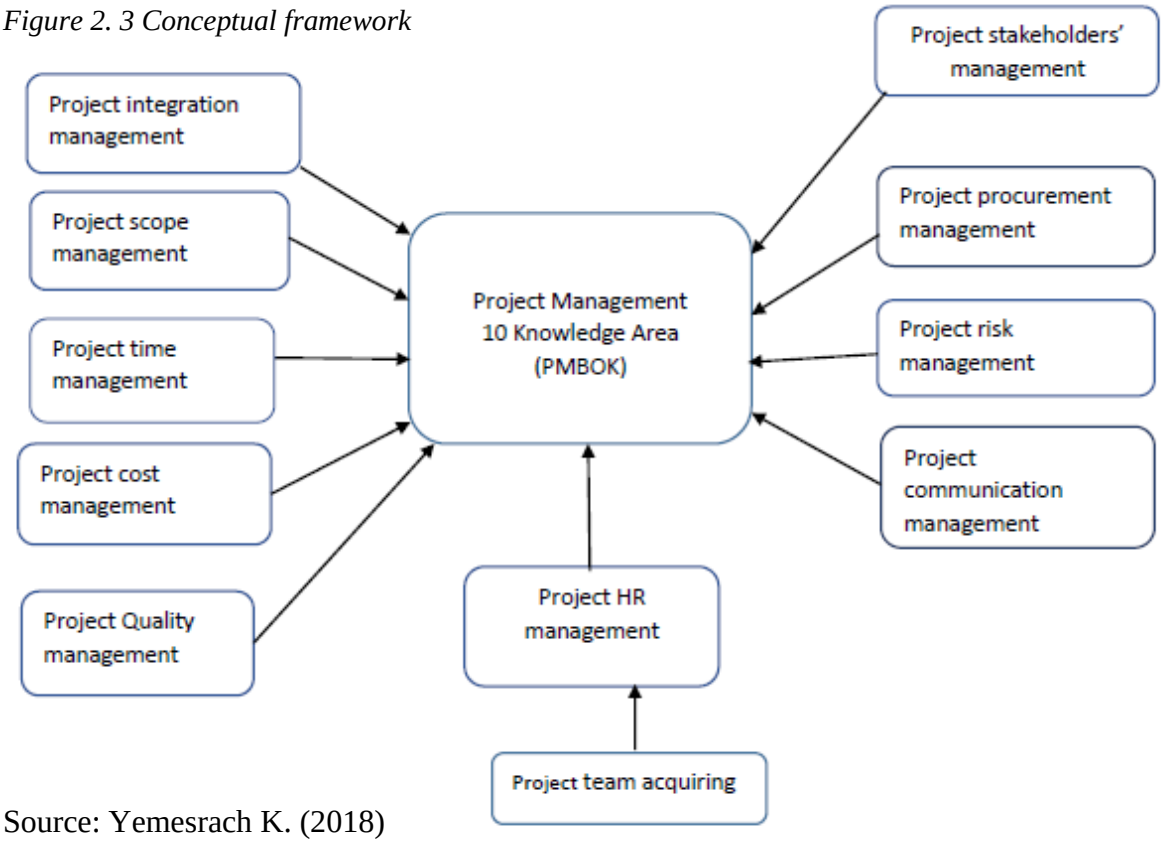
According to PMBOK, project stakeholder management includes the processes required to identify the people, groups, or organizations that could influence or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

Stakeholder management also focuses on continuous communication with stakeholders to understand their needs and expectations, addressing issues as they occur, managing conflicting interests and fostering appropriate stakeholder engagement in project decisions and activities.

### 2.1.6 Conceptual Framework

As indicated in PMBOK guide, there are ten project management knowledge areas coincide with the process groups that are; project initiation, project planning, project execution, monitoring and controlling and project closing. The knowledge areas take place during anyone of these process groups.

*Figure 2. 3 Conceptual framework*




Source: Yemesrach K. (2018)

## 2.2 Overview of Virtual Project Management

### 2.2.1 Virtual Project Management

Virtual project management is the system by which virtual teams collaborate for a finite period of time towards a specific goal to be achieved within time, within budget and according to specifications. Virtual teams are defined here as groups of geographically and organizationally dispersed knowledge workers brought together across time and space through information and communication technologies in response to specific customer needs or to complete unique projects. Technology helps create the "virtual workspace" that the team uses to communicate and collaborate. Virtual Project Management (VPM) is supplanting the traditional concept of project management because of persistent pressures to reduce costs and headcount, the need to quickly address customer problems, develop products, deliver services, and tap a more diverse pool of employees across the organization. Several studies suggest that Global Virtual Teams (GVTs) face significant challenges in four major areas: communication, culture, technology, and project management. Current research suggests that virtual team failure is directly related to the difficulties of building trust, positive relationships across the three boundaries of geographical distance, time zones, and cultural differences (Nauman and Iqbal, 2005).

### 2.2.2 Advantages of virtual teams, and of virtual project management

As cited in Gyöngyvér (2016), Berry (2011), stated that use of virtual teams is assumed to enhance flexibility, capability, and responsiveness. Its reason partly lies in the coactions and harmony among team members who have different personalities, different professional background, and different knowledge. First of all, virtual teams cease time and space being obstacles, and they are usually cost efficient. Furthermore, according to Pauleen (2003), enterprises can achieve significant savings if they use properly the special allowances of specific countries. They can save

the lost working hours and travelling costs of business trips too. Even if a company takes the costs of business trips or relocations, in case of a short deadline, it is not an option because of getting visas, arranging families and ongoing tasks take too long time. Another general advantage is the fact that virtual teams "can follow the Sun"

Also, Malhotra (2007) states that employees often work simultaneously in multiple teams because their special knowledge is needed at more places. This makes those individuals invaluable, so making them travel even for short face-to-face meetings would be counterproductive (Malhotra et al. 2007).

### 2.2.3 Opportunities of Virtual Project Management

The virtual teams offer the organizations an opportunity to hire the best available talent from every corner of the world. Multi-cultural teams are also supposed to cater to global clients in a better way as they can understand their demands easily. Since, the employees can work in their comfort zone, this acts as a mutual benefit for both the organization as well as employees. So, virtual organizations avail these benefits apart from an opportunity for global knowledge transfer and learning for its members. (Ankita, 2012)

### 2.2.4 Factors in a successful virtual team

Most of the traditional teams are similar to virtual teams. Successful and satisfying team experiences share the same characteristics or traits. Team performance may be virtual or not, and it primarily describes discipline – leader, peer and self-imposed. (Barczak, 2006)

The best and common factors of successful virtual teams are trust, communication; leadership, goal setting and technology (Cristina R. and Ciprian R., 2010).

#### *2.2.4.1 Trust*

Trust is the fundamental of all successful relationships that enhance virtual teams to succeed; they need to strengthen and facilitate their relationship carefully and intentionally. It is often an outcome of team members that all people in a team should be concerned to complete their assigned tasks. Moreover, trust is an essential element that exists in all successful personal and team relationships. A face to face introductory meeting plays a larger role in facilitating the development of trust and collaborative behaviors. (Shikha, 2013). The trust factor is the most crucial thing for virtual teams because of the lack of personal face-to-face interaction. As Gyöngyvér, 2016 explained, building trust is another excessive challenge in virtual teams. The characteristics of virtual teams such as time difference, cultural diversity, distance and the reliance on computer mediated technology have negative influence on trust, in general.

#### *2.2.4.2 Communications*

Although both virtual and traditional teams share the common characteristic of communication, one element of communication, which almost unanimously separates them, is the increased amount of asynchronous communication required in virtual teams. Individuals from different national cultures vary in terms of their communication styles and group behaviors, which include the motivation to seek and disclose individuating information and the need to engage in self-categorization. Even in a virtual team, where a team chat room exists or frequent meetings occur, virtual teams simply do not have the frequency of synchronous real-time communication characteristic of traditional team structures. Virtual team members must learn to excel as active communicators. The success of the team depends on the ability of team members to exchange information in face of the challenge of time and place. In building a culture of familiarity relationships, trust is key to enhancing the quality of communication.

As cited in Gyöngyvér (2016), Chhay et al. (2013) states the most conspicuous part of communication as a challenge in virtual teams is the lack of nonverbal communication. Communication without facial expressions, body language, or eye contact makes the job of the communicating parties less easy. Especially, that according to Chhay et al. (2013), 80% of the whole communication is nonverbal. Based on the research of AIM Strategies (2010), the lack of visual cues increases miscommunication and inconsistent expectations. This gap of nonverbal clues needs to be fulfilled by proper managerial communication style and methods. Also, frequent calls and video-audio tools for online meeting can help in addition to email and other nonverbal communications.

#### *2.2.4.3 Leadership*

Leadership is another quality that makes feeling success in both traditional and virtual teams. Leaders need to create coherence when attempting to mix the work processes of a virtual team member's home organization. Conflict resolution also requires significant leadership expertise. One of the responsibilities of the team leader is to be hyper-vigilant, to keep conflicts from spiraling out of control. Effective team leaders can also solve paradoxical situations and contradictions by performing multiple leadership roles at the same time.

#### *2.2.4.4 Goals*

Goals are vital for all teams, and they are so critical for those team members who do not see or meet each other frequently. At this time, the team's goals effectively become a moral force that incorporates the organization's strategy, the objectives of the various team members, and the needs of team members as a whole. All team members need to involve in the goal-setting phase of a project. This strategy enforces team members to work interdependently with shared information.

#### *2.2.4.5 Technology*

Virtual teams could not exist without the advanced technological tools available today. Some of these tools are synchronous, requiring people to be available at the same time, independent of geography. For example, the telephone, teleconferencing, video conferencing, chat rooms, and other tools, including voice-mail, email, faxes, and computer-mediated conferencing (CMC) are all technologies employed in this context. The work of virtual teams can also be enhanced by the use of a designated Web site. Advances in technology generally are at the heart of the increased use of virtual teams in organizations. However, for sustained success, virtual teams must continue to expand their means of electronic collaboration.

### 2.2.5 Challenges of Virtual project Management

The members of virtual teams hardly get an opportunity to meet each other in person. This often results into a lack of empathy and understanding among the team members. Virtual teams often lack an emotional bonding among the team members, between team and the leader, and with the organization. There is a greater risk of communication flaws in virtual organizations and thus the blame game is quite obvious. If the roles are not properly defined, there is chaos and confusion leading to conflicts and project delays. Effective supervision is also a challenge in case of virtual teams if the work is not delegated properly. The virtual organizations also face problems relating

to training and development of their employees not because they cannot arrange it online but it is sometimes hard to recognize their training needs. (Ankita, 2012)

Azimi(2011) discussed seven major challenges of virtual projects; these are time, trust, communication, culture, technology, leadership. Kurash D.,(2010) explained that time is one of the important challenges in implementing virtual projects because there are different time zones all over the world and it may be difficult to gather all team members together at the same time. When virtual projects need synchronous collaboration, setting a meeting time can pose a major problem, especially when a team is comprised of members from across the world. Hence, time can be considered as one of the major challenges in virtual project management.

Trust between or among team members is another challenge that virtual project managers face. According to Malhorta (2007) the importance of trust role in virtual teams will be more impressive by how information will be transferred during the course of virtual work. He recommended managers to build trust in a virtual team may be to treat team members in a logical and fair way and deliver on their promises.

## 2.3 Virtual Organizations

The intensive use of information technologies brings too many challenges and changes within/through organizations that a great deal of papers has been written on new forms of organization generated by the development of information technology. Nowadays, the real debate relating to new forms of business is summed up to virtual organizations (Ksenija, 2016).

As cited in Ksenija (2016), Pang (2001) simply defines a virtual organization as: “a flexible network of independent entities linked by information technology to share skills, knowledge and access to others' expertise in non-traditional ways“. Despite its diffuse nature, a common identity holds the organization together in the minds of members, customers, or other constituents.

Relationships within the virtual form are tenuous. In fact, a key implication of virtual organizing is that these forms are more reconfigurable, their boundaries are considerably more blurred, and their relationships are more likely to be contractual than traditional forms. The components (individual workers, teams, departments, units or firms) that make up a virtual organization are geographically distributed, functionally or culturally diverse, electronically linked, and connected via lateral relationships. In such an organization, employees work in a virtual work environment in which human, physical and technical resources are located where they contribute most effectively to attaining business objectives.

## 2.4 Virtual Team

As cited in Nader *et al*(2009),Gassmann and Von Zedtwitz (2003b) defined "virtual team as a group of people and sub-teams who interact through interdependent tasks guided by common purpose and work across links strengthened by information, communication, and transport technologies. Another definition suggests that virtual teams, are distributed work teams whose members are geographically dispersed and coordinate their work predominantly with electronic information and communication technologies (e-mail, video-conferencing, telephone, etc.) (Hertel et al., 2005), different authors have identified diverse.

The use of virtual teams is a much more prevalent practice today, and it is being found in many different types of organizations and not just in the "high tech" arena. (Rudy and Liesl: 2010)

As cited in Rudy and Liesl (2010), Duarte and Snyder (1999), stated virtual teams operate "…without the physical limitations of distance, time, and organizational boundaries. They use electronic collaboration technologies and other techniques to lower travel and facility costs, reduce project schedules, and improve decision-making time and communication.

As cited in Shikha (2013), Townsend et al. (1998) defined virtual teams as "Groups of geographically and/or organizationally dispersed co-workers that are assembled using a combination of telecommunications and information technologies to accomplish an organizational task".

According to Inka, 2013, what makes a virtual team different and separates it from a conventional team, is typically the lack of physical proximity among team members and/or their leader and use of technology for the main means of communication instead of face-to-face interaction.

Forming virtual teams and matrix organizations are considered to be efficient solutions when helping organizations fight the turbulence of global markets and fierce competition. According to scholars, virtual teams are teams, whose members are based in different geographic locations, but work on similar goals and tasks cross-functionally and interdependently. The team members typically use technology for interaction, as they have limited opportunities for face-to-face working. (Malhotra et. al. 2007).

As cited in Inka (2013), Berry (2011) states when team members are forced to use varying methods of communication due to distance, it changes the patterns of work, relationships of the team members, decision making processes and general understanding of the tasks at hand. Even though remote work forces to use virtual procedures in these teams, they still share some of the same dynamics and characteristics of regular teams.

According to Gregory, 2011, a virtual team has the following six attributes, sharing the first four with almost all teams:

- The team usually but not always has a definable and limited membership, and there is awareness by team members of this shared membership, and even if membership changes somewhat the team remains intact.
- The members of the team function interdependently, usually with a shared sense of purpose that is either *given* to them or constructed by the team itself.
- The members of the team are jointly responsible for outcomes.
- The members of the team collectively manage their relationships across (and perhaps between) organizational boundaries.
- The members of the team may be geographically dispersed
- The members of the team predominately rely on computer-mediated communication rather than face-to-face communication to accomplish their tasks.

### 2.4.1 The Advantages and Disadvantages of Virtual Teams

As cited in Inka (2013), Lipnack & Stamps (2000) explains as virtual teams foster productivity, quality and flexibility in an organization and create potential savings for the company in terms of reached scalability and reduced real estate and travel expenses. Virtual teams also offer speedy solutions and rapid knowledge transfer in today's hectic business environment and the technology available has made us all practically neighbors in terms of connectivity potential and market access. These distributed teams defy time zones, organizational barriers, hierarchies and distance. In an optimal situation, innovation and learning across the organization becomes easier and creativity blooms.

*Figure 2. 4 Advantages of Virtual Teams*




As cited in Inka (2013), Jones et al. (2005) have singled out three main advantages that clarify the benefits of the use of virtual teams. Shown in Figure 2. The main reasons companies have started investing in the development of virtual teams are organizational agility, cost savings and the ability to hire the best person for the job, no matter where he/she is located. Inter-company relocations are expensive for the employer and often trouble inducing and a source of stress for the employee. Distributed working abilities offer solutions for this and also reduce significantly the costs for business-related travel and real estate management.

### 2.4.2 Virtual Teams versus Face to Face Teams

Bell et al. (2002), maintained that traditional teams work in close physical proximity and work under the same roof having face to face interactions while virtual teams, on the other hand are physically separated and rely on host of technologies such as electronic mail, videoconferencing, electronic-mails, telephones and groupware (hardware and software applications that facilitate group work) for communication and information exchange. Virtual teams are more complex in

comparison to face to face teams as (a) they cross boundaries related to time, distance (geography) and organization and (b) they use electronic technological means to communicate and collaborate i.e. they are compared on the basis of spatial distance and communication media. Geographically dispersed communication does not contain close physical proximity, frequency of interaction, and breadth and depth of physical cues through non-verbal communication as compared to face to face teams.

# Chapter Three: Research Design and Methodology

The Objective of this research is to assess the opportunities and challenges of virtual project management, a case study in MODETH Outsource PLC. This chapter aims to describe the research design and methodology used to address the research problems. In addition, population of the study, the sampling method, the data sources, data collection and analysis method also will be discussed in this chapter.

## 3.1 Research Design and Approach

This study focuses on assessing the existing situation regarding the opportunities and challenges of virtual project management. Hence, it follows descriptive research design. Regarding its approach, the study is conducted using mixed research approach. Mixed methods procedures employ aspects of both quantitative methods and qualitative procedures. Mixed methods research has increased in popularity in recent years. Their combined use provides an expanded understanding of research problems (John, 2009).

This study employed the mixed research approach. Because this approach has increased in popularity in recent years. The combined use both qualitative and quantitative methods provide an expanded understanding of research.

## 3.2 Population of The study

As Nicholas W. (2011:175) stated, population is a collective term that used to describe the total quantity of cases of the type which are the subject of the study. The population of this study was all project dedicated staffs of MODETH Outsource PLC in Addis Ababa and branch office in Dubai, 30 employees. The study conducted census since the number of the target population is manageable.

## 3.3 Sources of Data

According to Prabhat and Meenu (2015:69) primary and secondary data are the two basic sources of information. The primary data can be collected through laboratory measurement, field observation, questionnaires, interviews, opinions, schedules etc.by the researcher. The secondary data can be collected from technical publications such as manuals, handbooks, data sheets, and standards, books and journals, official publications of the Central government, state governments, local bodies, private data services and computer data base. This research will use both primary and secondary data. The primary data will be collected from all project employees using questioners and interview will be conducted with project managers. In addition, document analysis will be employed as secondary data.

## 3.4 Methods of Data Collection

As a method of data collection, the questionnaire is a very flexible tool that has the advantages of having a structured format, is easy and convenient for respondents, and is cheap and quick to administer to a large number of cases covering large geographical areas. There is also no personal influence of the researcher, and embarrassing questions can be asked with a fair chance of getting a true reply (Walliman, 2011).

The research uses the data collected using questioner and interview from the project team members as a primary data source and document review was used as a secondary data source.

Questioner was distributed to all project employees through internet delivering method, because of the geographical location and time difference of the respondents.

Face-to-face interviews were carried out for the Addis Ababa branch project managers, two employees and Telephone interviews were conducted for those in Dubai branch project managers, five employees.

The company ICT policy was reviewed.

## 3.5 Method of Data Presentation and Analysis

The researcher used tables, graphs and percentage to analyses the collected data using SPSS as a data analysis tool.

## 3.6 Data Validity and Reliability

Kothari (2004: 73-75) states, Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. Validity can also be thought of as utility. In other words, validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested. The questioner's validity has been checked by pilot test to ensure if it fully address the issues indicated in the research question.

The questionnaire was pre tested to ensure that it is clear and comprehensible to the respondents. To this end, questionnaire was filled by four respondents and more clarifications were made using the feedback from them.

The test of reliability is another important test of sound measurement. A measuring instrument is reliable if it provides consistent results. Reliable measuring instrument does contribute to validity, but a reliable instrument need not be a valid instrument.

Cronbach's Alpha was used to assess the questionnaire's internal consistency. Consequently, the Cronbach's Alpha internal consistency coefficient is 0.83 which indicates good reliability. The figure shows that the items in the questionnaire have good inter-correlation as a group.

## 3.7 Research Ethics

There are two aspects of ethical issues in research: the first one is the individual values of the researcher relating to honesty and frankness and personal integrity. Secondly, the researcher's

treatment of other people involved in the research, relating to informed consent, confidentiality, anonymity and courtesy. (Nicholas, 2011)

The researcher protected research participants' personal privacy and the researcher has got informed consent of the respondents. They are informed about the objective of the study that the data will be used for the academic purpose only.

# Chapter Four: Data Presentation and Analysis

In this chapter, the collected data is presented, analyzed and interpreted. The data was collected through questionnaire, interview and document analysis regarding the opportunities and challenges of virtual project management considering the case of MODETH Outsource PLC. A total of 30 questionnaires were distributed to all the project team members and managers and 29 were returned which accounts 96.7 percent response rate. The data is presented using mixed approach.

## 4.1 Demographic Detail of Respondents

*Table 4.1Sex of Respondents*

| Sex | Frequency | Percent |
|---|---|---|
| Male | 19 | 65.5 |
| Female | 10 | 34.5 |
| Total | 29 | 100.0 |

As Table 4.1 depicts most of (65.5 percent) the company's employees are male. This implies existence of imbalance between male and female employees in the company. As the data collected through interview revealed, this is mainly attributed to the working hours of the company. The company works 24 hours shifting its employees. According to the manager, female employees/ candidates are not comfortable with the night shift.

*Table 4.2Respondents' age group and Experience of team members*

| Age of Respondents | | |
|---|---|---|
| Age group | Frequency | Percent |
| 20-25 | 12 | 41.4 |
| 26-31 | 12 | 41.4 |
| 32-37 | 4 | 13.8 |
| 38-43 | 1 | 3.4 |
| Total | 29 | 100.0 |
| Experience as a team Member | | |
| Service Year | Frequency | Percent |
| 1-3 | 20 | 74.1 |
| 4-6 | 5 | 18.5 |
| 7-9 | 2 | 7.4 |
| Total | 27 | 100.0 |

Table 4.2 shows that out of 29 employees 24 (82.8 percent) are aged 31 and below. From the given data, one can identify that majority of the employees are young or in their early adulthood.

The managers stated that, the company believes in hiring fresh graduates since they are adaptive to new technology and flexible in working hour and location. On top of that, all employees have less than ten years of experience as a virtual project team which could be attributed to many factors such as lack of experienced staff in virtual project and the task's nature to invite less experienced staff.

*Table 4.3Educational level*

| Educational Level | Frequency | Percent |
|---|---|---|
| Bachelor | 28 | 96.6 |
| Masters | 1 | 3.4 |
| Total | 29 | 100.0 |

As indicated in the above Table all employees except one (96.6percent) have a bachelor degree. This implies that both the managers and team members of the company are executing their tasks with their first degrees. The projects handled in the company do not demand higher level education than first degree.

**Position of respondents**

*Table 4.4 Position of respondents*

| Position | Frequency | Percent |
|---|---|---|
| Manager | 7 | 24.1 |
| Team Member | 22 | 75.9 |
| Total | 29 | 100.0 |

From what is shown in Table 4.4, one can learn that nearly one fourth of the employees were project managers while 76 percent were team members. The project division's structure, which is attached (Annex 1), depicts that there are three major project sub divisions managed by accounts manager, project manager and quality assurance manager. Since the company works 24 hours a day and 5 days a week, each sub division is run by two or more managers.

An independent sample t-test was conducted to check if there is a significant mean difference between position of employees and the other variables. Accordingly, the result revealed that the managers (M=7.6 sd=1.67) face more cultural and language barriers than the team members (M=4.0, sd=2.83). This difference is statistically significant as ($t=2.39$; $p<.05$).

*Table 4.5 Experience as a manager*

| Experience | Frequency | Percent |
|---|---|---|
| 1-3 | 5 | 71.4 |
| 4-6 | 2 | 28.6 |
| Total | 7 | 100.0 |

A question was presented in order to identify the service year employees have in managing projects, accordingly their responses are organized in the above Table. The Table shows that only the employees who currently assumed managerial position have the experience whereas, 76 percent of the employees have never served as a manager. Most of the employees who served as a manager have a less than four years of experience in managing virtual projects. This implies that virtual project management is at its keen stage in the company. During the interview, the project managers explained that the company appointed managers from the project team.

## 4.2. ICT Policy

### Existence of ICT policy in the Company

*Table 4.6 Existence of ICT policy in the Company*

| | Frequency | Percent |
|---|---|---|
| Yes | 26 | 89.7 |
| No | 3 | 10.3 |
| Total | 29 | 100.0 |

Respondents were asked whether they know the existence of ICT policy or not. To this effect, 3(10.3 percent) did not know the policy's existence. In relation to this issue, one of the project manager said that there was a trial to disseminate the ICT policy to the employees however the company was not consistently conducting this task.

*Table 4.7 Existence of ICT policy in the Company * Introduction of ICT Policy Cross-tabulation*

| Item | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Total |
|---|---|---|---|---|---|---|
| Existence of ICT policy in the Company | 1 | 1 | 8 | 11 | 5 | 26 |

Table 4.8 Introduction and Implementation of ICT Policy

| Rate | Frequency | Percent |
|---|---|---|
| Strongly Disagree | 1 | 3.8 |
| Disagree | 2 | 7.7 |
| Neutral | 8 | 30.8 |
| Agree | 10 | 38.5 |
| Strongly Agree | 5 | 19.2 |
| Total | 26 | 100.0 |

As Table 4.7 and 4.8 indicate, of the 26 employees who know the existence of the ICT policy, 10 (38.5 percent) did not agree on the introduction of the ICT policy to the project team. This indicates even though ICT policy exists, the company fails to introduce it consistently to the new staff.

This gap is also reflected on the implementation of the ICT policy as responded by 11 (**42.3** percent) of the employees. As the managers explained during the interview, the policy is not well implemented due to two basic reasons. The first one is to be flexible and minimize highly administrative issues stated in the policy to the employees. While analyzing the company's policy document, the researcher found out that the content is limited to resource utilization. It dictates how the employees should use the available resources of the company.

## 4.3. Knowledge, Attitude and Practice

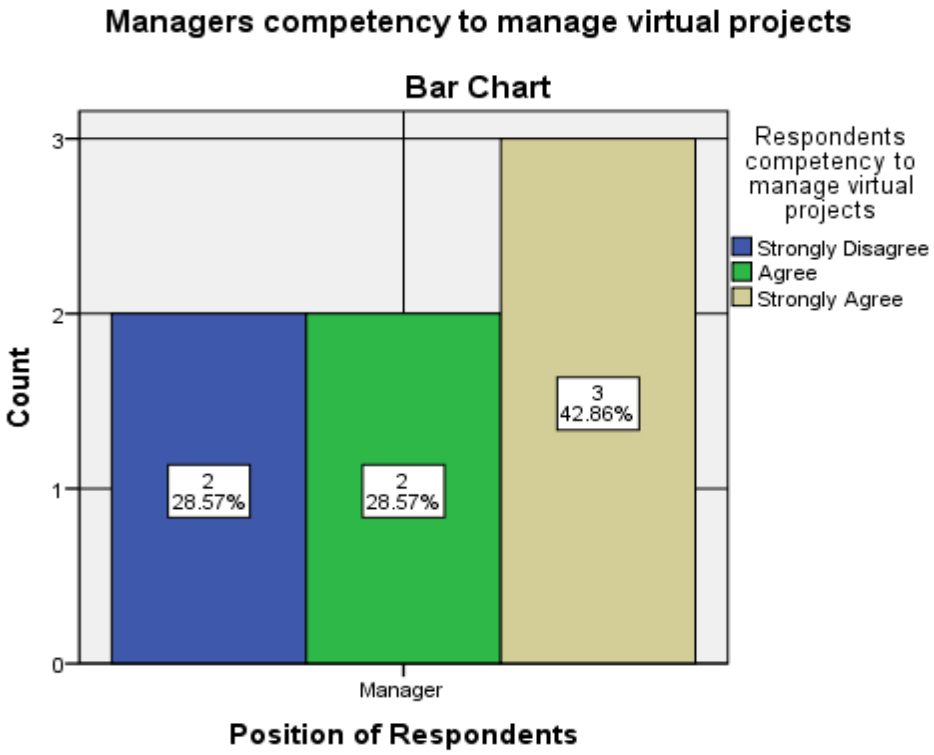
Table 4.9 Existence of Knowledge, Knowledge Sharing system, refreshment training and technical skill

| Rate | Knowledge of VP (M=3.70, SD=1.42) | | Knowledge Sharing system (M=3.4, SD=1.7) | | Refreshment Training (M=3.60, SD=1.27) | | Technical Skill (M=3.60, SD=1.58) | |
|---|---|---|---|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| Strongly Disagree | 1 | 3.4 | 5 | 17.2 | 1 | 3.4 | 3 | 10.3 |
| Disagree | 2 | 6.9 | 0 | 0.0 | 6 | 20.7 | 0 | 0.0 |
| Neutral | 5 | 17.2 | 4 | 13.8 | 3 | 10.3 | 4 | 13.8 |
| Agree | 14 | 48.3 | 11 | 37.9 | 13 | 44.8 | 10 | 34.5 |
| Strongly Agree | 7 | 24.1 | 9 | 31.0 | 6 | 20.7 | 12 | 41.4 |
| Total | 29 | 100.0 | 29 | 100.0 | 29 | 100.0 | 29 | 100.0 |

Table 4.9 depicted that above one fourth (27.6 percent) of the project team did not agree on having knowledge regarding virtual projects. This indicated the existence of knowledge gap in the project team. Similarly, 31 percent of the virtual project team members didn't agree on the existence of knowledge sharing system in the company. In addition 34.5 percent of the virtual project team members didn't agree on the existence of refreshment training for new technology. The aforementioned figures imply on one hand, the existence of project team members who lack sufficient knowledge on virtual projects and on the other hand the company's capacity building system is not well established. One of the managers mentioned that the company provides a basic training at the time of employees' recruitment and it left the continuous professional development responsibility to the team itself. According to the manager, team members are expected to arrange self-learning mechanisms such as experience sharing programs by themselves and they are supposed to do this during their downtime. The effect also reflected in respondents' competency.

Respondents were asked to indicate their level of agreement on their competency in executing virtual projects. Accordingly, 7 (24.1 percent) did not agree that they are competent to execute the tasks.

*Figure 2. 5 Managers competency to manage virtual projects*




Out of the 7 virtual project managers, 2(28.57%) believed that they are not competent to manage virtual projects. One of the interview participants mentioned that client wise communications require high level of competency which is sometimes beyond the manager's current knowledge and skill. As the interviewee elaborated client wise communication requires successful accomplishments in kick of meetings, requirement analysis and understanding and satisfying clients' demand.

*Table 4.10 Existence of positive attitude*

| | Frequency | Percent |
|---|---|---|
| Strongly Disagree | 2 | 6.9 |
| Disagree | 2 | 6.9 |
| Agree | 7 | 24.1 |
| Strongly Agree | 18 | 62.1 |
| Total | 29 | 100.0 |

Majority of the respondents i.e. 86.2 percent have a positive attitude towards virtual projects and the way they are managed. However, 13.8 percent did not have a positive attitude towards virtual projects and their management.

## 4.4. Infrastructure

*Table 4.11 Existence of modern infrastructure*

| Rate | **Hardware Technology (M=3.56, SD=1.42)** | | **Software Technology (M=3.89, SD=1.54)** | | **Internet Connection (M=3.33, SD=1.41)** | | **Security (M=3.33, SD=1.5)** | |
|---|---|---|---|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| Strongly Disagree | 1 | 3.4 | 2 | 6.9 | 2 | 6.9 | 2 | 6.9 |
| Disagree | 5 | 17.2 | 2 | 6.9 | 3 | 10.4 | 3 | 10.3 |
| Neutral | 6 | 20.7 | 5 | 17.2 | 7 | 24.1 | 6 | 20.7 |
| Agree | 5 | 17.2 | 4 | 13.8 | 10 | 34.5 | 10 | 34.5 |
| Strongly Agree | 12 | 41.2 | 16 | 55.2 | 7 | 24.1 | 8 | 27.6 |
| Total | 29 | 100.0 | 29 | 100.0 | 29 | 100.0 | 29 | 100.0 |

Reliable and up-to-date infrastructure is vital component in managing and executing virtual projects. The respondents were asked to indicate their level of agreement on the up to datedness of the hardware and software technology, reliable and strong internet connection and highly

secured technology. Consequently, 41.4 percent, 31 percent, 41.4 percent and 37.9 percent of the project team members did not agree on the existence of up-to-date hardware technology, software technology, reliable and strong internet connection and highly secured technology respectively. However the data from the interview reflected different perspectives on up to datedness, reliability and security of the infrastructure. The managers of the Dubai team stated that infrastructure is not a major problem for them, they even appreciate the high speed internet connection and the hardware technology. But they have reservations in software and security issues. While the managers of the Ethiopian branch have complaints on the frequent power and internet interruption and use of outdated hardware technology.

## 4.5. Opportunities of Virtual Project Management

Table 4.12 Opportunities of virtual project management

| List of opportunities | Rank in percent | | | | |
|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | Cumulative |
| Global knowledge transfer and learning | 20.7 | 27.6 | 13.8 | 37.9 | 100.0 |
| Opportunity to hire the best available talent | 17.2 | 34.5 | 34.5 | 13.8 | 100.0 |
| Multi-cultural teams provide support to global clients | 31.0 | 17.2 | 41.4 | 10.4 | 100.0 |
| Cost saving | 31.0 | 20.7 | 10.3 | 37.9 | 100.0 |
| Cumulative | 100.0 | 100.0 | 100.0 | 100.0 | |

Respondents were asked to rank the most important opportunities of virtual project management in the company's context. Accordingly, 31 percent of the respondents put cost saving and multi-cultural teams support to global clients in the first rank. Even though the listed items are considered as opportunities of virtual project management in the literature, the respondents of this research gave relatively scanty consideration for the opportunities. As can be seen from Table 4.10, global

knowledge transfer and learning is taken as opportunity by 20.7 percent of the team members and opportunity to hire the best available talent by 17.2 percent. This implies that the company and the project team members are not fully utilizing the opportunities provided by virtual project management.

## 4.6. Challenges of Virtual Project Management

Table 4.13 Challenges of virtual project management

| List of challenges | Rank | | |
|---|---|---|---|
| | 1st | 2nd | 3rd |
| Culture and language barriers | 3.4 | 13.8 | 3.4 |
| Communication challenge | 6.9 | 13.8 | 17.2 |
| Information security | 10.3 | 3.4 | 10.3 |
| Information redundancy | 13.8 | 6.9 | 6.9 |
| Team structure | 13.8 | 6.9 | 13.8 |
| Time zone difference | 17.2 | 3.4 | 3.4 |
| Trust building | 3.4 | 6.9 | 10.3 |
| Conflict resolution and management | 6.9 | 17.2 | 20.7 |
| Knowledge sharing | 13.8 | 10.3 | 3.4 |
| Leadership challenge | 6.9 | 17.2 | 6.9 |
| Cumulative | 100.00 | 100.0 | 100.0 |

One of the items in the questionnaire was to rank the most important challenges of virtual project management in the company's context. Accordingly, the respondents ranked the items and the feedback they provided is organized in the above Table. Consequently, the four most important challenges are identified as conflict resolution and management, communication challenge, team structure and leadership challenge in that order. One of the managers also mentioned structural problem as a major challenge of the company. He said:

> "Recently, I'm appointed as a project manager. The major challenge I have been facing since my appointment is related to structural issues. Both the team members and the managers tend to overlook the formal structure; they rather use informal communication to execute their tasks. This is disappointing and it also affects responsibility and accountability of the project team members and managers."

Other project managers have also reflected communication gaps as major challenges in managing virtual projects. One of the managers from the Dubai branch stated the company fails to disseminate up to date information to team members and managers. She stated that:

> "Communication is the major challenge I am facing. For instance, I was not informed about structural changes and appointment of a new manager in the Ethiopian team until recently. Hence, we [the Dubai team] used to do things in the former way, this had caused communication gaps between the Dubai and Ethiopia teams."

The data collected through the questionnaire reflected that trust is considered as a challenge only by 10.3 percent of the respondents. However, one of the managers said that trust is a major challenge for managers of the Dubai branch. He elaborated,

> "The facilities and services provided in Ethiopia are not dependable enough, as you know power and Internet interruptions are quite frequent, most of the team members are also less experienced to handle complex projects when compared with those in Dubai. Hence, when a complex project comes it is usually assigned to the Dubai team."

There is also another manager who faced challenges related to trust. He said controlling the physical presence of employees who are working virtually is difficult. There are team members who abuse their working hours. Some of them leave their workplace after logging in and running the project.

Three respondents mentioned lack of socialization as a challenge they face in virtual projects. From the above data it is possible to infer that structure, communication, conflict management and resolution, and trust are the major challenges the company faced in managing virtual projects.

# Chapter Five: Conclusion and Recommendation

## 5.1 Conclusion

The study was aimed at assessing the challenges and opportunities of virtual project management by taking the case of MODETH Outsource PLC. The research followed a mixed approach to collect the necessary data from its respondents. Data was collected from project team members, managers, and company documents. 22 virtual project team members and 7 virtual project managers have participated in the study. All participants took part in filling the questionnaire which encompasses demographic detail, ICT policy, knowledge, skill and attitude of respondents, opportunities and challenges of virtual project management. All managers have been interviewed; telephone interview was conducted for the Dubai managers. The study identified cost saving and multi-cultural teams support to global clients as the major opportunities of the company in managing virtual projects. On the other hand, structure, communication, conflict management and resolution, and trust are identified as the major challenges the company faced in managing virtual projects.

## 5.2 Recommendation

Based on the findings presented in chapter four, the research forwarded the under listed recommendations.

- In order to attain the gender balance and benefit from the knowledge, skills, attitudes and perspective of women, the company should facilitate women friendly working environment such as working time arrangement and promoting the work from home policy.
- The company should update its ICT policy in collaboration with all stakeholders to make it comprehensive enough in addressing issues related to virtual project management. In addition, should work towards introducing and implementing the policy.

- The company, project managers and project team members should work in collaboration to benefit the best opportunities out of virtual project management.
- The company should use participatory approach while making structural changes and should formally introduce new structures to all stakeholders, support and supervise their enforcement.
- In order to minimize the communication challenge, the company should devise a communication strategy so as to communicate updates to all project team members and managers who are working in Dubai and Ethiopia branches. The managers should also take their stake in sharing relevant information within and across teams.
- The company should work towards enhancing the capacity of its branch in Ethiopia. This includes building the capacity of its team members and managers through trainings and experience sharing programs; so that they can handle complex projects and satisfy the requirements of their customers. It should also use up to date hardware technology in order to effectively and efficiently execute projects.
- The government, Ethio Telecom and Ethiopian Electric Utility should provide basic facilities such as reliable and sustainable electricity and internet connection to promote the development and expansion of virtual organizations in Ethiopia.

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# Appendix I

## Addis Ababa University

## College of Business and Economics School of Commerce

## Department of Project Management

## Questionnaire to be filled by project team members

This questionnaire is part of research being conducted on the topic ***Opportunities and Challenges of Managing Virtual Projects: Case of MODETH Outsource PLC***. The purpose of the study is for the partial fulfillment of the requirement of an MA degree in Project Management. The information that you provide is strictly confidential and will be used only for academic purpose. Thus, you are kindly requested to fill the questionnaire genuinely.

Thank you for spending your valuable time!

**Part I: Demographic information of the respondents'**

1. Sex ☐Male ☐Female

2. Age _____

3. Educational level ☐Bachelor ☐Masters ☐above Masters

4. Position ☐Manager ☐ Team Member

4. For how long have you worked in a virtual project?

As a team member _____ As a manger _____

**Part II: Questions on the issues related to ICT policy in managing employees.**

2.1 Do you know whether an ICT policy exists in the company? ☐Yes ☐No

**Place a check mark to indicate your response for each question from part I to IV as follows: 5= Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=strongly Disagree.**

| | Factors | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 2.2 | The ICT policy is well introduced to the virtual project team. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.3 | The ICT policy is implemented in the organization. | ☐ | ☐ | ☐ | ☐ | ☐ |

**Part III: Questions on the project team required knowledge, attitude, practice and perspective related to virtual project.**

| | Factors | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 3.1 | I have an adequate knowledge regarding virtual projects. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.2 | There is a knowledge sharing system in the virtual project team | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.3 | There is a refreshment training for new technology | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.4 | I am comfortable in working with in the virtual team | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.5 | There is a positive team spirit among the virtual team. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.6 | I am competent enough to manage virtual projects. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.7 | I do have the technical skill in executing virtual projects. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.8 | All in all, I have a positive attitude towards virtual projects and their management. | ☐ | ☐ | ☐ | ☐ | ☐ |

**Part IV: Questions on the organization use of relevant technology for project management.**

| | Factors | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 4.1 | There is an up-to-date hardware technology in the virtual project team. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4.2 | There is an up-to-date software technology in the virtual project team. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4.3 | There is reliable and strong internet connection. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4.4 | There is highly secured technology (hardware, software, network….) | ☐ | ☐ | ☐ | ☐ | ☐ |

**Part V: Questions on opportunities of virtual project management.**

Please prioritize the below listed opportunities based on their order of importance for your team from the highest priority (4) to the lowest (1).

| | List of possible opportunities | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1 | Global knowledge transfer and learning | ☐ | ☐ | ☐ | ☐ |
| 2 | Opportunity to hire the best available talent from every corner of the world. | ☐ | ☐ | ☐ | ☐ |
| 3 | Multi-cultural teams provide supposed to global clients in a better way as they can understand their demands easily | ☐ | ☐ | ☐ | ☐ |
| 4 | Cost saving | ☐ | ☐ | ☐ | ☐ |

Please add if there are any other opportunities you have observed

_____

_____

**Part VI: Questions on challenges of virtual project management.**

Please prioritize the below listed challenges based on their order of importance for your team from the highest challenge (10) to the lowest (1).

| | List of possible Challenges | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Culture and language barriers | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2 | Communication challenge | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3 | Information security | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4 | Information redundancy as a result of multi-channel communication | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5 | Team structure | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6 | Time zone difference | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7 | Trust building | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8 | Conflict resolution and management | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Knowledge sharing | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10 | Leadership challenge | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Please add if there are any other challenges you have encountered

_____

_____

_____

_____

_____

# Appendix II

## Addis Ababa University

## College of Business and Economics School of Commerce

## Department of Project Management

## Semi structured interview guide for managers

1. Please give me general information about the company. (Branches, working hours, number of employees disaggregated by sex, hiring and promotion policy …..)
2. Please describe the nature and type of projects handled by the company.
3. How do you introduce the ICT policy?
4. How do the team members share knowledge regarding virtual projects?
5. Please give me a detail explanation on the opportunities of virtual project management.
6. Please give me a detail explanation on the challenges of virtual project management.

# Appendix III

