



**ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE
GRADUTE PROGRAM IN PROJECT MANAGEMENT**

**ASSESSMENT OF PROJECT MANAGEMENT PRACTICES AND
CHALLENGES: THE CASE OF TELECOM EXPANSION PROJECT (TEP) IN
ETHIOTELECOM.**

BY: MEDHEN HAFTOM GSR/3737/10

A PROJECT WORK SUBMITTED TO ADDIS ABABA UNIVERSITY SCHOOL OF
COMMERCE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MA
DEGREE IN PROJECT MANAGEMENT.

ADVISOR: -ABDURAZAK MOHAMMED(PhD)

May 2019

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APPROVED BY BOARD OF EXAMINERS

Advisor

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DECLARATION

I declare that this MA. thesis is my original work, has never been presented for a degree in this or any other university and all source of materials used for the thesis have been dulyacknowledged.

Medhin Haftom

Signature

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Acronyms

AUC.....	African union commission
CCB.....	Change control board
CEO.....	Chief executive officer
CPM.....	Critical path method
EMI.....	Ethiopian management institute
FDRE.....	Federal democratic republic of Ethiopia
FL-NGN.....	Fixed line next generation network
GTP.....	Growth and transformation plan
IT.....	Information Technology
NGN.....	Next generation Network
PMBOK	Project management body of knowledge
PMI	Project management institute
PMO.....	Project management office
PPM.....	Project portfolio management
R&D.....	Research and development
ROI.....	Return on investment
SPOR.....	Single point of reference
TEP.....	Telecom expansion project
UK.....	United kingdom
USD.....	United states dollar
WBS.....	Work breakdown structure

Abstract

The purpose of this study is to assess the project management practices of telecom expansion project and their effect on project performance in ethiotelecom. Explanatory research design was applied to address the specific objectives of the study and reach at specific conclusion. Primary data has been collected by distributing 88 structured questionnaires and all the distributed questionnaires were filled and returned. Results from descriptive analysis identified that TEP was good in practicing Initiation, planning, execution, monitoring & control and closing phase activities except the following observed problems in within these phases like: Lack identifying possible risks and detail scope statement preparation at planning phase, lack of timely escalation of problems impeding project team's performance to execute the project and regularly updating project schedules at execution phase, lack of proper identification and documenting of lessons learned at closing phase. With regard to implementation challenges, Lack of proper coordination with stakeholders, Lack of proper fund management in the project, Government Policy challenges, Project communication and integration management problems were identified as highly challenging factors. Results from correlation analysis shows, there is significant positive correlation between all the project phases practices and project performance and significant negative correlation between challenges and project performance. Result from multiple linear regression shows, except planning all the other project phase practices and challenges significantly explain the project success. Finally though the project was not completed with the planned budget and schedule, it was good in achieving the expected quality, objective and goal. Based on this the study proposes: ethiotelecom should develop a culture of developing appropriate risk plans and risk response controls, to prevent unexpected risks and failures, it should also develop a strong culture of lessons learned documentation at every project performed by the organization, should develop effective and efficient project communication and integration management systems etc.

- **Key words: Telecom expansion project (TEP), project management practices, and Project management challenges.**

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

A project can be defined as a one-time endeavor that consists of a set of activities, whose executions take time, require resources, and incur costs or induce cash flows. Precedence relations may exist between activities; these relations express technical or organizational requirements with respect to the order in which activities must be processed or with respect to their timing relative to each other. Moreover, the scarcity of the resources allocated to the project generally gives rise to implicit dependencies among the activities sharing the same resources, which may necessitate the definition of additional precedence relations between certain activities when the project is scheduled. A project is carried out by a project team, has a deadline, i.e., is limited in time, and is associated with one or several goals whose attainment can be monitored (Schwindt, 2015).

Typically, projects have three primary objectives: to finish the project quickly, to consume as few resources as possible (especially, to minimize costs), and to produce a high-quality project. In addition, in certain industries like airlines, railways, etc., some people add a fourth dimension safety which is considered to be equally important. In today's highly competitive business environment, Project Management's ability to schedule activities and monitor progress within time, cost, and performance guidelines is becoming increasingly important to obtain competitive priorities. This implies that there are trade-offs that must typically be made when scheduling a project (Mateo, 2015).

Project management deals with the coordination of all initiating, planning, decision, execution, monitoring, control, and closing processes in the course of a project. In other words, it is the application of knowledge, skills, tools, and techniques to project tasks to meet all projects (Brandon, 2006).

Project management was born in the 1950s, in the space and construction sectors. Special planning methods were developed for these projects, such as the network planning method.

Nowadays, these are used not just to manage complex tasks in technical environments, but also for problem solving and crisis situations in all management fields, such as marketing, personnel, finance and corporate organization, in both businesses and public sector organizations. In the context of internal projects involving structural, organizational or personnel issues, project management is also often called change management(Kuster et.al , 2015):.

Owing to its societal and economic relevance, Project Management has become an important and relevant discipline and a key concept in modernworld private and public organizations. (Marle & Vidal, 2016).

As explained by Carstens, Richardson and Smith (2013) on their book “project management tools and techniques a practical guide”, the most recognized project management methodology is an approach that views a project as a defined set of five management groups. These groups are Initiation, planning, execution, monitoring & control and closing phases.

This study will focus on assessing the practices of telecom expansion project implementation in ethiotelecom. Telecom expansion project(TEP) is a project launched by ethiotelecom mainly to achieve target objectives of mobile and broad band service as defined by the FDRE government mainly improve network quality service, increase coverage and capacity on mobile service, build strong infrastructure with latest technology and enhance and modernizing information system domain etc.

1.2. Background of the organization

Telecommunications service was introduced in Ethiopia by emperor Menelik II in 1894 when the construction of the telephone line from Harar to the capital city Addis Ababa, was commenced. Then the interurban network was continued to expand satisfactorily in all other directions from the capital (Fentaw, 2017).

After the end of the war against Italy, during which telecommunication network was destroyed, Ethiopia re-organized the Telephone, Telegraph and Postal services in 1941. In 1952 the Imperial Board of Telecommunications (IBTE) was established by proclamation No. 131/52 in 1952. The Board had full financial and administrative autonomy and was in charge of the provision and expansion of telecommunications services in Ethiopia. The Imperial Board of Telecommunications of Ethiopia, which became the Ethiopian Telecommunications Authority in 1981, was placed in charge of both the operation and regulation of telecommunication services in the wake of the market reforms.

In 1996, the Government established a separate regulatory body, the Ethiopian Telecommunication Agency (ETA) by Proclamation 49/1996, and during the same year, by regulation 10/1996, the Council of Ministers set up the Ethiopian Telecommunications Corporation (ETC). Under the supervision of the ETA, the principal duty of ETC is maintaining and expanding telecommunication services in the country and providing domestic and international telephone, telex, and other communication services (Kalkidan, 2017).

In 2010 Ethiopian telecommunication also signed an agreement with France Telecom Company to restructure its internal organization and changed its name to ethiotelecom. And according to the current structure the company is designed as below.

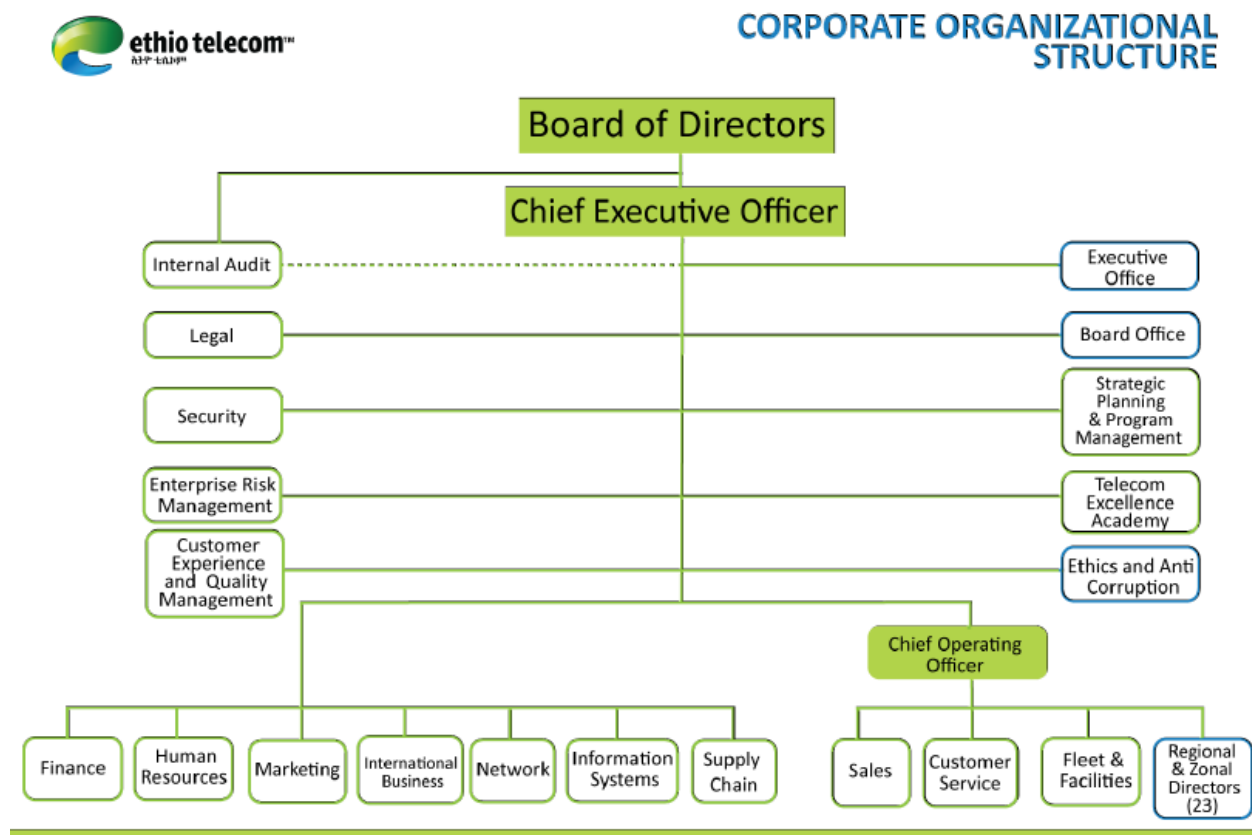


Fig.1.1. ethiotelecom updated organizational structure.

Source: ethiotelecom annual report, 2018.

1.3.Statement of the problem

No matter how good the original plan is, there will always be some deviation during implementation of a project. The deviation should be expected, and the necessity of project management is to track this deviation, to make sure this deviation stays within the scope of the project, and to take necessary actions to get back on track. The further the project goes into implementation, the more important it is to track things systematically to avoid drifting away too much from the original outline and falling outside the scope of the project (Carstens et.al, 2013).

As most of the models and theories in organizational and managerial behavior were developed from America and other Western research, performance during implementation is not up to expectations. This is due to different reasons. The absence of clear internal co-ordination mechanisms, government regulations, inefficient personnel and absence of motivation are among these causes (Berhanu 2017). To avoid inefficiencies caused by the above explained and other reasons in many developing countries, organizations are forced to find possible solutions like engaging towards purchasing consultancy services, training of personnel, change of regulations, and adoption of new methods and tools. Therefore, the strategy for implementing project management in less developed countries must be consistent with the cultural and characteristics of the particular society and configuration of its economical, political and administrative systems (Mharmah, 2000). Based on this, this study mainly tried to assess the project management practice of telecom expansion project in Ethiopia. As explained in (Brandon, 2006), there are basic and common project management activities in each project phases starting from initiation to closing that should be practiced in most projects and common IT projects challenges. This study tried to identify these activities that should be performed in each project phase and the challenges and tried to assess how they were practiced and how severe the challenges were and their effect on project performance in TEP in ethiotelecom.

In 2013 ethiotelecom started its phase two project named as telecom expansion project (TEP) signing 1.6 billion USD vendor financing with China's telecom companies completing phase one (NGN) project which was launched in 2009. The telecom expansion program was launched to achieve the telecom sector objectives in growth and transformation program defined by FDRE

government. The program mainly targets to solve the quality, coverage and capacity challenges of ethiotelecom. And this study tried to assess the project management practices of this telecom expansion project. Though many studies were conducted on this project, like Bekele (2017), Fentaw (2017), Anbesse (2017) and Asmare (2017), their main focus was on portfolio management and its challenges, project manager selection practices, monitoring and evaluation challenges and risk factors and their implications respectively in TEP project. Thus, this study is unique in assessing the project management practices of the basic project life cycles in TEP, its challenges and their implication on the project performance.

1.4. Research questions

- How did the basic project phases (initiation, planning, execution, monitoring and closure) were practiced in telecom expansion project?
- What were the main challenges to successfully implement the TEP?
- What was the effect of these practices and challenges on TEP performance?

1.5. Objectives of the study

- The general objective of this study is to assess the project implementation practices of telecom expansion project (TEP) in ethiotelecom.

Specific objectives are:

- To assess telecom expansion project management practices in ethiotelecom
- Identify the main challenges to successfully implement the project.
- Assess the effect of these practices and challenges on performance of the project

1.6. Significance of the study

Ethiotelecom had been implementing huge investment projects by signing vendor financing with international telecom companies to meet the growth and transformation plan objectives set by the FDRE government. It expected that launching and implementing such a huge investment projects lead us to deal with highly complex and challenging project issues which may demand advanced knowledge, skills and experiences of project management and ability to provide scientific and contextually proved solutions for problems in each phase. As this study is mainly focusing on assessing the practices made in implementing TEP project in each phase, identify the challenges and interventions made to address the challenges, it provides crucial information about the strong and weak sides of the practices in each phase against the scientifically recommended

implementation practices. The study also provides information about the challenges in the project implementation and interventions made to address these challenges for future projects.

1.7. Scope of the study

As ethiotelecom is a sole telecom service provider in Ethiopia, it covers almost all parts of the country to provide various telecom services. It has eleven regional offices and six zonal offices in Addisbaba. But this study focuses only areas that are covered by telecom expansion project only. In addition to this, ethiotelecom has more than twelve division in its organizational structure and all these division launch various own projects at different sites for different purposes at different times but this study still focuses only on telecom expansion project which was mainly owned by network and information system divisions and supported by sourcing and facility, human resources, finance divisions and legal divisions.

1.8. Organization of the paper

This paper contains a total of five chapters. Chapter one deals with the introductory parts of the paper. Chapter two reviews literatures related to the study. Chapter three focuses on methods of data collection and data analysis, chapter four deals with data analysis and Chapter five provides conclusion and recommendation.

1.9. Definition of terms

Initiating: Tasks and activities that conceptualize and/or authorize the project or phase. It can include activities like defining project objectives, scope, purpose and deliverables to be produced.

Planning: Activities and related tasks that define and refine objectives within the project and tells everyone involved where you're going and how you're going to get there

Executing: Activities and related tasks that coordinate resources to carry out the plan and its main purpose is to deliver the project expected results (deliverable and other direct outputs).

Monitoring and controlling: It is a Monitoring and measuring progress regularly to identify variances within the plan, so corrective actions can be taken if needed.

Closing:Finalize all activities/tasks and above processes to close the project and involves handing over the deliverables to your customer, passing the documentation to the business, cancelling supplier contracts, releasing staff and equipment, and informing stakeholders of the closure of the project.

Stakeholders : Those with a particularly significant interest in the project's outcome, including those providing funding or right of way for the project and property owners who are affected by the project. Stakeholders are unique for each project.

Project Charter: A document issued by the project initiator or sponsor that formally authorizes the existence of a project, and provides the project manager with the authority to apply organizational resources to project activities.

Project management:deals with the coordination of all initiating, planning, decision, execution, monitoring, control, and closing processes in the course of a project. In other words, it is the application of knowledge, skills, tools, and techniques to project tasks to meet all projects.

Projects success:is defined by the level of efficiency the project achieved to reach the project objectives.

Project Management Body of Knowledge (PMBOK®): An inclusive term that describes the sum of knowledge within the profession of project management. As with other professions, such as law, medicine, and accounting, the body of knowledge rests with the practitioners and academics that apply and advance it. The complete project management body of knowledge includes proven traditional practices that are widely applied and innovative practices that are emerging in the profession. The body of knowledge includes both published and unpublished material. The PMBOK is constantly evolving.

CHAPTER TWO

2. LITERATURE REVIEW

This section presents a review of related theoretical and empirical literatures about projects, project management, project phases, project challenges etc.

2.1. Theoretical literatures

2.1.1. What is project?

Broadly, the activity of an organization (a firm, an association, a nonprofit organization, etc.) can be divided into two main categories: operations and projects. Operations involve repetitive and ongoing activities, such as production, whereas projects are in essence unique and one-shot initiatives. This means that projects are “not a routine segment of ongoing operations” (Marle & Vidal, 2016). Examples of projects can be the following ones: Developing and launching new products (new product development projects), Designing new organizations (organization projects). Improving existing processes within a firm (process improvement projects). Staging a play (event project). Searching for an innovative process, product, or material (R&D projects), Developing a new software (IT projects). Constructing a building (construction projects).

A *project* is a temporary endeavor undertaken to provide a unique product or service. The word temporary means that any project done must have a beginning and an end. A project generally begins when some sort of official document proclaims the project to have an official life. This document, the project charter, usually creates some means of collecting the cost and expenses of the project. Often the end of the project is when all of the project goals have been met and all of the work of the project has been accomplished. Some projects will end when for various reasons it has been decided to abandon the project or stop work on it. This is generally because the goals of the project cannot be achieved practically (Newell, 2005).

Some distinction is made between the terms project and program. Most project managers feel that the project management profession can manage projects of any size and that the methodology that is used to manage them all is nearly the same, with modifications made to accommodate different sized projects. The methods used in the project management process are the same. While discussing the difference between projects and programs it would be well to note that there is a hierarchy of endeavors of this type starting at the largest, the strategic plan, followed by the portfolio, the program, the project, and even the subproject.

Most projects will have the characteristic of being developed through what is called “progressive elaboration” in the Guide to the PMBOK. This simply means that projects are progressively developed. For example, the project scope is only broadly defined in the beginning of the project. As the project progresses the scope becomes more clearly defined and more detailed. Ultimately a baseline is developed to define the scope of the project in a detailed way.

According to the Guide to the PMBOK, a program is a group of projects managed in a coordinated way to obtain benefits not able to be obtained by managing them separately. Programs are generally ongoing. This definition is familiar when we speak of very large programs, but all projects are really subprojects of larger projects or are composed of subprojects. From the perspective of a subproject manager, he or she is in charge of his or her own project. From the perspective of the manager of these managers, he or she is responsible for his or her own project. The difficulty of this definition is that there is no clear distinction between the size of a project and that of a program. It is also true that in some organizations, programs may even be considered to be subprojects of other projects. All of this goes to show that project management is not a strict science but has some artistic aspects to it as well.

A project is conducted for a customer who is internal to an enterprise. A program is conducted for a customer who is external to the enterprise; a program has legal ramifications between the enterprise and the customer. The discriminator is the legal document or contract. Stated in another way, a program manager has Profit and Loss (P&L) and legal responsibility in addition to cost, schedule, and technical responsibilities. The project manager, on the other hand, has cost, schedule, and technical assignments. Thus, a program manager needs a slightly different skill set than a project manager (Cagle, 2003).

When we speak of portfolio management, we are talking about a number of projects that are grouped together to help meet strategic business goals. In this way projects that advance the strategic goals of the company are included together, and an effort is made to ensure that each project not only is justified on its own merits but that it also supports the strategic goals of the organization (Newell,2005).

2.1.2. Project management

Modern project management is a well-understood discipline that can produce predictable, repeatable results. The methods of modern project management are highly analytic, usually requiring automated tools to support them on large projects. Like most other disciplines, it is learned through both practice and study. Since this chapter is an introduction, it is fitting that we explain how we will be using the term *project management*. Project management encompasses many different skills, such as understanding the interdependencies among people, technologies, budgets, and expectations; planning the project to maximize productivity; motivating others to execute the plan; analyzing the actual results; and reworking and tuning the plan to deal with the realities of what really happens as the project is executed (Howes , 2001).

Project management is the totality of managerial functions, organization, techniques, and instruments to initiate, define, plan, control, and close projects. Project management covers the coordination of people and the optimal resource management to achieve project objectives (Alam & Gruhl, 2016).

There are more definitions for “project management available:

The planning, delegating, monitoring, and control of all aspects of the project, and the motivation of those involved, to achieve the project objectives within the expected performance targets for time, cost, quality, scope, benefits, and risks .

The complete set of tasks, techniques, and tools applied during project execution

The application of processes, methods, knowledge, skills, and experience to achieve the project objectives

The application of knowledge, skills, tools, and techniques to project activities to meet the project requirements.

Project management is “the application of knowledge, skills, tools, and techniques to the project activities in order to meet or exceed stakeholder needs and expectations from a project” (PMI, 2000). It involves the planning, organization, monitoring, and control of all aspects of a project and also the management, leadership, and motivation of all involved parties to achieve the project objectives within agreed time, cost, quality, safety, and performance criteria.

Project management in some form has existed for thousands of years, and it was likely used in the construction of the wonders of the ancient world. Modern project management, including the use of the engineering and management disciplines, started around the turn of the 20th century.

Around that time, managers of such projects faced pressure from proponents of scientific management to organize in a centralized way and control not just what was done but the details of how and when it was done. Henry Gantt developed the Gantt Chart in World War I, and it was used in huge projects like the construction of the Hoover Dam in the 1930s. IT project management appears to go back to the 1950s, when the Critical Path Method (CPM) was developed by DuPont and Remington Rand/Univac (Brandon, 2006).

2.1.3. Project lifecycles

Due to uniqueness of deliverables and temporary activities, a project has to integrate and engage stakeholders from different enterprises with unique organizational structure and culture. A project is more risky than daily operation due to new activities, temporary organizations, and stakeholders with different aims, cultural, and professional backgrounds.

A project has definite dates for begin and end. Along the project progress, accumulated resources will grow. The losses will be exaggerated if issues were not identified earlier during the project process. The necessary and effective way of project risk management is to control the project life cycle.

All projects face constraints on time and resources. The life cycle of a typical project consists of a series of stages such as initiating, planning, executing, and closing. With a good understanding of project life cycle, a project manager is able to manage the project properly (DING , 2016).

Due to uniqueness nature of projects, it is not effective to manage them by relying on individual's experience. To a certain degree, project management is risk management. If we rush into the next project phase without a proper finish of the previous phase, potential issues will emerge and deteriorate. The improvement of efficiency in one project phase does not necessarily indicate the overall efficiency and reliability of the entire project. It is not unusual that projects rushed into the execution phase without a proper decision, initiating, and planning phase. This has led to a number of issues such as reworks, cost overruns, and delays. We have to deal with common psychological misunderstanding of overall efficiency so that project risks can be managed according to the project life cycle.

Aproject is a social system. Due to interactions between project activities, it is difficult to draw boundaries according to predefined functions. Project stakeholders are contingent to each other in terms of their demand and associated responsibilities.

This is especially the case in innovation-oriented projects where project stakeholders rely on each other. The degree of cooperation between stakeholders largely determines the project success (or failure). In order to manage projects effectively, senior executives should have system thinking.

Large projects typically are broken down into phases, and the organization of those project phases is discipline specific and typically follows some type of methodology. Various types of IT methodology are detailed later in this book. Each project phase has a beginning and an end, and the five process groups are a part of each phase. Deliverables from one phase are typically inputs to the next phase; there may be phase overlap in some methodologies. For some industries and in some methodologies there may be overlap in project phases. IT may also have some project phase overlap, depending on the type of methodology adopted and the type of contracting arrangement (Brandon, 2006).

PMI's summarization of key activities by process group is follows:

a. Initiation Phase

The Initiating Phase of the project is where it all starts. Key information is gathered, scoping is performed, and the project kick-off meeting is conducted. Complete these major tasks and you are ready to enter the project's Planning Phase. These items are arranged in chronological order, but note that you may end up completing them in any order; the important thing is to do them all before proceeding to the next phase of the project (McBride 2016).

The core task of project initiation is to let the project stakeholders to clarify their responsibilities, power, and benefits related to a project. The core member during project initiation process is not the project manager, but the project initiator, especially for those projects that include many functional departments of the enterprise and have various external stakeholders.

Practices suggest that it is not easy to identify and clarify project stakeholders and ask them to take responsibilities for the projects. Sometimes, a project has been undergoing for a long period of time, but the project team still does not understand who the real clients are. A common mistake is to take the direct users of the project products as the clients.

Top Leadership Project emphasizes the importance of the top managers and their responsibilities. However, due to the lack of process management, it will become very common that the top managers are needed everywhere for everything. If a top manager is responsible for too many things, his responsibilities become symbolic. Under such circumstance, you can find the

responsible person, but you cannot prevent the occurrence of problems. Top managers are under enormous pressure, and top management becomes a high-risk position. Therefore, they might mitigate risks and pressures and pass on responsibilities. The person who is responsible for executing the project initiation process should be enterprise top managers, i.e., the project initiators (Ding , 2016).

Before projects are officially initiated, it is very necessary to gather all the project stakeholders together to have a project initiation meeting. The meeting can help to clarify the meanings of some project-related concepts on site, publicly implement project stakeholders' roles and responsibilities, and ensure their fulfillment to project commitment. In addition, project initiation meetings can serve as social events for people to know and communicate with each other. After all, sometimes nothing is more important than having good interpersonal relationships.

Key Initiation Activities

Project feasibility (high-level ROI approximation), Capture the objective of the project in 1 complete, succinct sentence, High-level project schedule milestones identified

High-level scope of work identified, High-level project resources (budget and people) identified
1st draft of the stakeholder management tool developed, Complete the project charter (if needed), Hold the project kick-off meeting, High-level planning

b. Planning Phase

It's often been said that project management really consists of two major phases: doing the right project and doing the project right. Ensuring that your project is based upon a true need and that it's justified from a business standpoint are two important aspects of doing the right project. Project planning, on the other hand, is all about doing the project right.

Project planning gets more attention than any other aspect of project management and justifiably so. It's hard to imagine how a project could be successful without some planning.

In addition to being important, project planning is also an enormous subject. Project planning consisting of two components.

The first is almost strategic; it consists of understanding some of the principles and philosophies of planning. The second component of project planning is tactical almost mechanical; it consists of the step-by-step process of creating a detailed project plan, using estimates as raw material (Heerkens, 2002).

Project plans are considered to consist of three fundamental “dimensions” cost: how much money that will be spent and how it’s budgeted over time, time: how long it will take to execute work individually and as a total project and scope: what is to be done.

project plans tend to emerge gradually. They are continuously modified and refined in terms of content, structure, and level of detail. As the project definition becomes more refined, work is broken down into ever-increasing levels of detail, assumptions are verified or refuted, and actual results are achieved, the project plan must keep pace. Project plans are often generated in iterations: at different times, in different levels of detail, for different purposes. Major iterations are often tied to key decision points and result in the creation of different versions of the plan at different levels of detail and precision. the first version of the project plan occurs before the project (as most people know it) has been defined. In this version, estimates of cost and schedule are relatively crude and are established with little knowledge of the specifics of the project. It’s done primarily for the purpose of allocating funds to an effort that will be listed in an organization’s annual operating budget.

The next version of the project plan is created when the organization is prepared to initiate a project represented in its operating budget. Sufficient planning must be done so that it can be formally decided whether or not the project is an investment worth funding.

If the project proposal is approved, the next version of the plan emerges. A detailed plan is created that the project team will use as a guide for implementation and that you will use to evaluate progress and maintain control. The next stage in the evolution of the project plan is continuous replanning. As the team executes the project, change will occur. Actual results will inevitably be different from what was expected at the outset of the project, so you’ll need to make ongoing course adjustments. These continual changes should be reflected in slight modifications to the plan.

The last version of the Plan occurs near the end of the project, when it becomes apparent that a number of work items (sometimes referred to as a punch list) must be taken care of in order for the project to be considered complete. When you reach this stage, you may find it useful to create a new plan, just for completing all remaining work. This allows for a highly focused and efficient effort and will help you avoid being associated with a legendary “project that never ends.”

Key Planning Activities

Develop scope statement, Assemble project team, Develop work breakdown structure (WBS)

Finalize project team, Do network type diagram (showing activity dependencies)

Estimate cost and time, find the “critical path”, Determine overall schedule and budget
Procurement plan, Quality plan, Identify risks, quantify them, develop risk responses,
Other plans: change control plan, communications plan, management plan, Overall project plan,
Project plan approval, “Kickoff meeting”

c. Execution Phase

By this point in time, you should have completed all of the items on Checklist #2; that is, you should have a solid project plan. In the Execution Phase of the project you will move from creating project management artifacts into using them. Here you will leverage the work you did to kick off the project and the stakeholder management plan to facilitate regular team meetings. You will use your project Change Control Board to participate in the program- or organization level Change Control Board(s). You will utilize the project schedule to track work and gauge progress. Risks will be triggered, and those action plans you and your team developed to deal with potential risks will be activated (McBride 2016).

Finally, you will use all of the artifacts you’ve created to generate regular status updates and manage escalations. The bulk of the project work does happen in this phase; however, since you’ve taken care of business in the Planning Phase, Execution for the project manager is about using the tools you developed previously. At this point in time, you are probably feeling a little shell-shocked since the Planning Phase involved a lot of work. Don’t worry; the mechanics of the job will be significantly easier going forward.

The Execution Phase is the longest phase of the project lifecycle, and you will find yourself regularly performing the tasks we’ve discussed and updating the artifacts you originally created during planning all throughout this phase.

Typically, this phase represents 60–70% of the total project duration, so you’ll be hanging out here a while. It’s a good idea to drop a couple of placeholders onto your work calendar to remind yourself to go do some of these tasks such as the risk reviews so that they don’t drop through the cracks. For other tasks, such as producing the project status updates, you will find yourself

falling into a regular cadence naturally. Next we will move into releasing your project deliverables and closing out the project.

Key Execution Activities

Execute the project plan, Standing team meetings are effective and held regularly with a stated agenda, Changes to the POR are managed effectively through the project and program-level CCBs, (change control board) The project schedule is updated regularly, incorporating unplanned work as needed, Project execution metrics have been established, are monitored regularly, and drive corrective actions as needed, Project risks are reviewed regularly with new risks identified and action plans updated as needed, Project status updates are provided to key stakeholders at a regular cadence, Problems impeding the team's ability to execute the project plan are efficiently escalated, Complete work packets (activities), Information distribution, Quality assurance, Team development, Scope verification

d. Monitoring and Control

In fairy tales and traditional romance movies, the story ended when the prince found his soul mate, married her, and rode off with her into the sunset. The ending caption said: "They lived happily ever after." Well, we know that real life is not quite that simple; after the marriage comes the most difficult (and, one hopes, interesting) part. Similarly, a great project contract and plan is of little consequence without constant monitoring and control. Once the project is planned and underway, the project manager cannot simply ride away and assume that everything will go according to plan.

To insure success, many project matters need to be monitored; if a matter deviates from the plan, then some form of control must be exerted to bring the situation back in line with the plan (Brandon (2006)).

The basic control process used in project management is the same process used in most engineering and business systems. It is based on the definition and establishment of key measures, and those measurements are then compared to some desired values or standards to formulate algebraic formulas, usually called metrics. If the difference between the measurement and the desired value exceeds some threshold, then corrective action (feedback) of some type is invoked, and the degree of corrective action may be a function of the size of the difference (and/or the integration [accumulation] or differentiation [rate] thereof). The measurements may

be of process outputs or of the process itself, and the measurement level may be process-related (generally, how things are being done) or product-related (generally, what things are being built). The project control processes go on during the execution of the project. The execution of the project is carried out primarily by the project team members, and the control of the project is carried out primarily by the project manager.

Key Control Activities

Overall change control, Performance reporting, Scope control, Quality control, Risk response control, Schedule control, Cost control, Manage by exception to the project plan.

e. Closing Phase

It is well recognized in the military science that it is more difficult to retreat successfully than attack successfully. This is the similar case in mountain climbing and politics. In World War II, it was found that the most loss of fighter aircrafts occurred in returning to the military base after tasks were accomplished, rather than during battle at air. Project management is no exception. It is easier to initiate than close projects. Under the business environment featured with economy turbulence, the performance of project closure will determine not only the profits of enterprise but also the satisfaction level of project stakeholders, which plays a critical role for future business opportunities (Ding (2016)).

As the last critical process of a project life cycle, project closure will occur if all project goals are achieved and customer acceptance of project products can be undertaken. Project closure is a regular process. Although project closure takes place at the end of a project life cycle, it does not mean that all activities of project closure cannot commence until the start of this process.

A project is a temporary endeavor undertaken to create a unique product, service, or result. However, the impacts of project products on clients could be long term. Project closure is crucial for project success to avoid those uncompleted activities and outdated information that should have been tackled before the project team is dismissed.

To properly close the project, you and your team need to review the team's performance and identify areas of improvement for future projects. You will do that by facilitating a project retrospective. You also need to ensure that your team cleans house by disposing of leftover material, publishing any collateral that may still be outstanding, and making sure that all of the project work is appropriately archived (McBride 2016).

As part of closing down the project, you will also need to create a project summary and review it with your key stakeholders to ensure that each one agrees that all of the committed project work is complete. Finally, you need to take care of your team by formally recognizing their accomplishments and celebrating the successful release. Note that unlike the other project lifecycle phases, much of the closing work is done simultaneously and is quick to complete.

Depending on how complicated your project is, you should expect to spend 1 to 2 weeks closing out the project. Getting this work done before the team is fully involved in another project is the hardest challenge for this phase of the project, so you will need to execute the Closing work as quickly as possible. Let's break down what you need to do.

Key Closing Activities

Procurement audits and contract(s) close out, Product verification, Formal acceptance, Lessons learned documentation, Update all project records, Archive records, Release team

2.1.3. Challenges of project implementation

Taking in to account the unique characteristics of projects, it might be difficult to generalize and put project management challenges in common to all projects due to the fact that each and every obstacle to project management vary according to nature of the project and the application employed to particular project setup. Thus, as the main focus of this research is to assess the practices of telecom expansion projects in ethiotelecon and will see the challenges faced during implementation, we will see in this section some common challenges for IT related projects that might lead to project failure unless properly and timely managed.

According to (Brandon, 2006) in his book "project management for modern information systems", For most projects, the consumption of resources (time and cost) is always controlled, and some supporting processes adds the control of scope, risk, and quality. Other matters need to be considered, however, for effective management of IT projects. The leading causes of IT project failures are:

- Lack of executive management support, Insufficient user involvement, Inexperienced project manager, Business objectives unclear, Minimization and compromise of scope, Lack of standard software architecture/infrastructure, Lack of clear statement of requirements, Lack of formal methodology, Poor estimates, Lack of proper planning, Unrealistic expectations, Scope minimized, Lack of project "ownership" by team, Team not hardworking and focused, Vision and objectives unclear, Incompetent staff, Improper setting of milestones.

2.2. Empirical Literature

Tigest Sileshi (2017) in her study “Assessment on Project Management Practices: a case study on Japanese Social Development Trust Fund Grant Project” explained and suggested that some project management knowledge areas i.e. Project scope, time, quality, cost, risk and integration management were not effectively practiced in the project. Correspondingly, project stakeholders, human resource, communication and procurement management were practiced traditionally even though formal procedures were not followed as a standard for project management which is due to no professional project management person was assigned in the project. Thus, this study suggested for the project to implement project management knowledge areas by following formal procedures based on the processes under each knowledge areas.

Bezawit Berhanu (2017) tried to assess the project implementation practice of entrepreneur and business growth project implemented by digital opportunity trust organization in Addis Ababa. And found that a number of factors accounted for challenging the project such as: unrealistic expectations from the project by the beneficiaries, lack of user's, lack of resources, unrealistic project time frames, frequent change of project requirements and specifications, and also challenges from government regulations and rules were found to account as challenging factors. Generally, the organization had prepared the plan in good detail and tried to consider all project issues except the communication plan. To the success of the project it is advisable to make the project visible to all stakeholders and communicated effectively, it will improve users input and also need to work closely with government

A study by Nebiyat belay (2017) on “Examining the practice of ethiopian airline in planning and scheduling of aircraft heavy maintenance projects” found that The imposition of the flight operator on the planning and scheduling process due to downtime of aircrafts during maintenance, the lack of benchmarks for work processes, lack of clear work description among organization units, low involvement of the project manager in the planning and scheduling process are the issues identified in the study.

Sintayehu fiseha (2017), Assessed Practices and Challenges of Knowledge Transfer in offshore outsourced Telecom Project in the Case of Ethio Telecom and found 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.

Addisalem Bekele (2017), Tried to assess the Implementation of Project Portfolio Management and Its Challenges: The Case of Ethio Telecom Wireless Network Program of Addis Ababa and explained that, when maturity of PPM of an organization increases, capability to handle and prevents the different challenges of PPM increases and reaping of all the benefits of PPM practice can be achieved, Effective capturing and dissemination of lesson learned and best practices of the application of PPM for all stakeholders of PPM are essential, communication regarding strategic direction of project portfolio for all the stakeholders is essential for creating a devotion to strategy throughout the structure of PPM governance, integration management is critical factor for successful implementation at the same time handling of challenges of PPM; so that the role of PMO to give an organizational focus on improving the management of project portfolio and builds up a common set of practices, principles and templates for managing projects portfolio is essential

Tefesehit Beyene (2017): Assessed the Implementation of Kaizen Project in a Public Inter-Governmental Context: The Case of the African Union Commission (AUC) and found various challenges exist, some of which are common to single-government organizations and others which are specifically created by the multi-national and multi-cultural environment. The study recommends strategies and approaches for the management of the AUC as it drives its continuous improvement initiatives.

Ghaleb et.al (2000): on their study about Project management practice by the public sector in a developing country and recommended that more effort should be spent on training, planning, resource leveling, cost estimation, corrective plans, and standardization.

Demoze Demisse (2017) in his assessment on practices and challenges of consultancy project management: the case of Ethiopian management institute, described that EMI does have major gaps in preparation and implementations of orientation session with clients, and detail assignment plan preparation and problem diagnosis. Developing strong alternative solution with their respective merits and demerits is a major gap. Implementation phase of consultancy

services is not practice in EMI and monitoring, evaluation and closure phase practice are weak as compared to other phases. Lack of required resources, lack of client commitment, and lack of competency of consultants, weak contractual administration, lack of strong monitoring and evaluation system, client needs fluctuations, poor incentive mechanism and lack of commitment of consultants are the major challenges that EMI faces in managing its consultancy services. The study recommended EMI to work on human capital and facility development, business categorization and to practice all management consultancy phases end to end.

2.3. Conceptual Framework.

As explained in objectives of the study and problem statement above, this research mainly focuses to assess the implementation practices of all project phases in TEP, their challenges and their effect on project success. Proper and effective practice of all project phases has positive effect on project success and lack of proper practice and increasing the severity of the challenges will negatively affect project success. Figure 2.1. Below tried to explain the relationship of these project management practices, challenges and their effect on project performance.

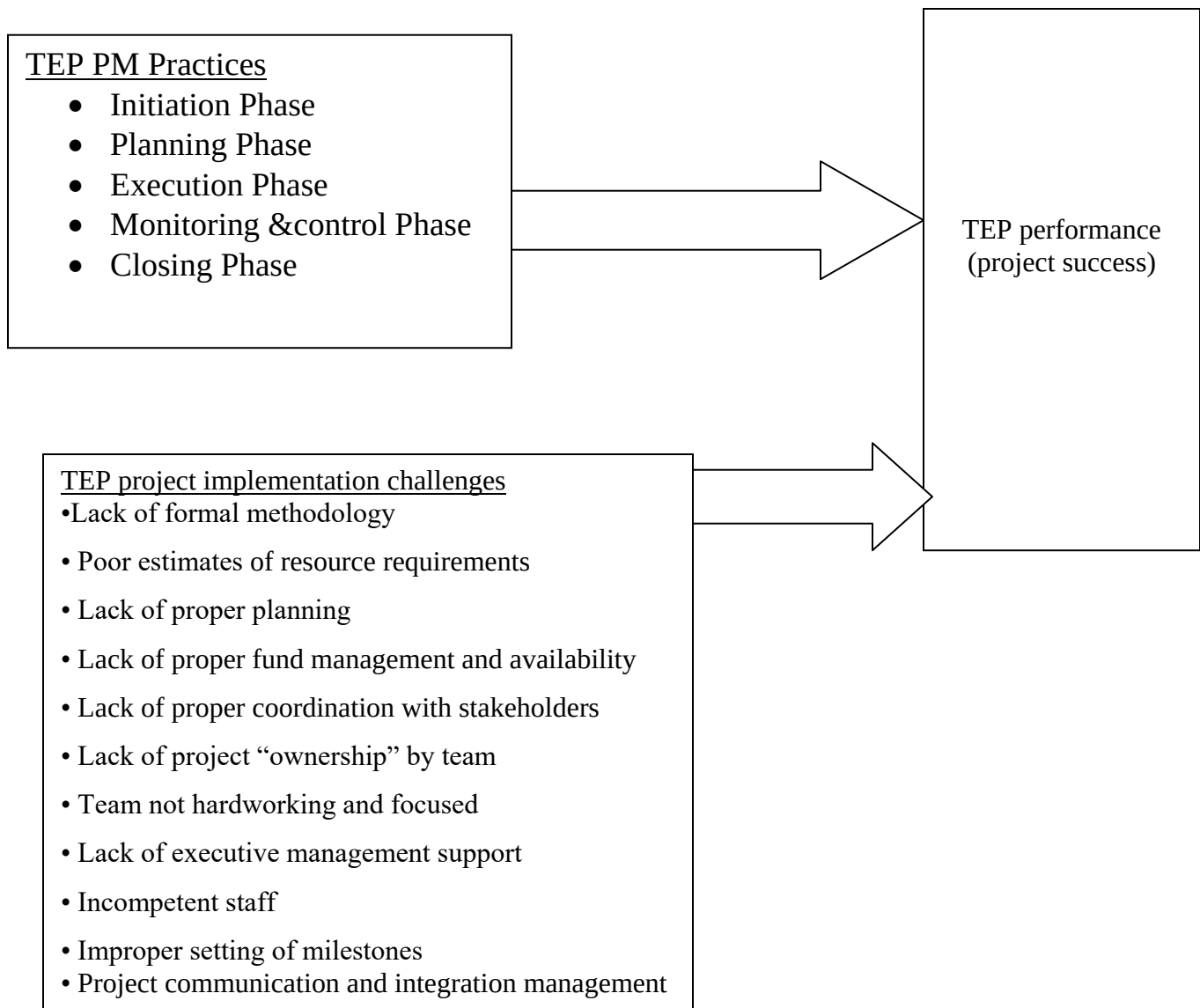


Figure 2.1. Conceptual framework of the study

Source: Developed by the author based literature review.

CHAPTER THREE

RESEACH METHODOLOGY

This chapter presents the research design, population and sampling, sources of data, data Collection method and methods of data analysis. It also addresses data processing and data analysis methods.

3.1. Description of the study area and population

Ethiotelecom is a state owned sole telecom service Provider Company in Ethiopia formerly known as Ethiopian Telecommunications Corporation but starting from 2010 related with change in its internal management structure, its name changed to ethiotelecom. After changing its name and structure the company management also changed. Chief operating officer and Chief officers are the highest ranking officials following the CEO who lead the divisions of the company. And the company management is divided in to various divisions as indicated in figure 1.1 above in background of the organization at the introductory part. Regarding Telecom expansion project(TEP), Network and information system (IS) divisions are mainly responsible for the project and sourcing and facility division (SFD), Finance division, human resource division (HRD), quality and process division (Q&PD) and legal division are responsible to provide support for the program. The total number of people participated in this project is 1051 and this will be the population of our study and representative sample will be drawn from this total population. TEP program is organized as below.

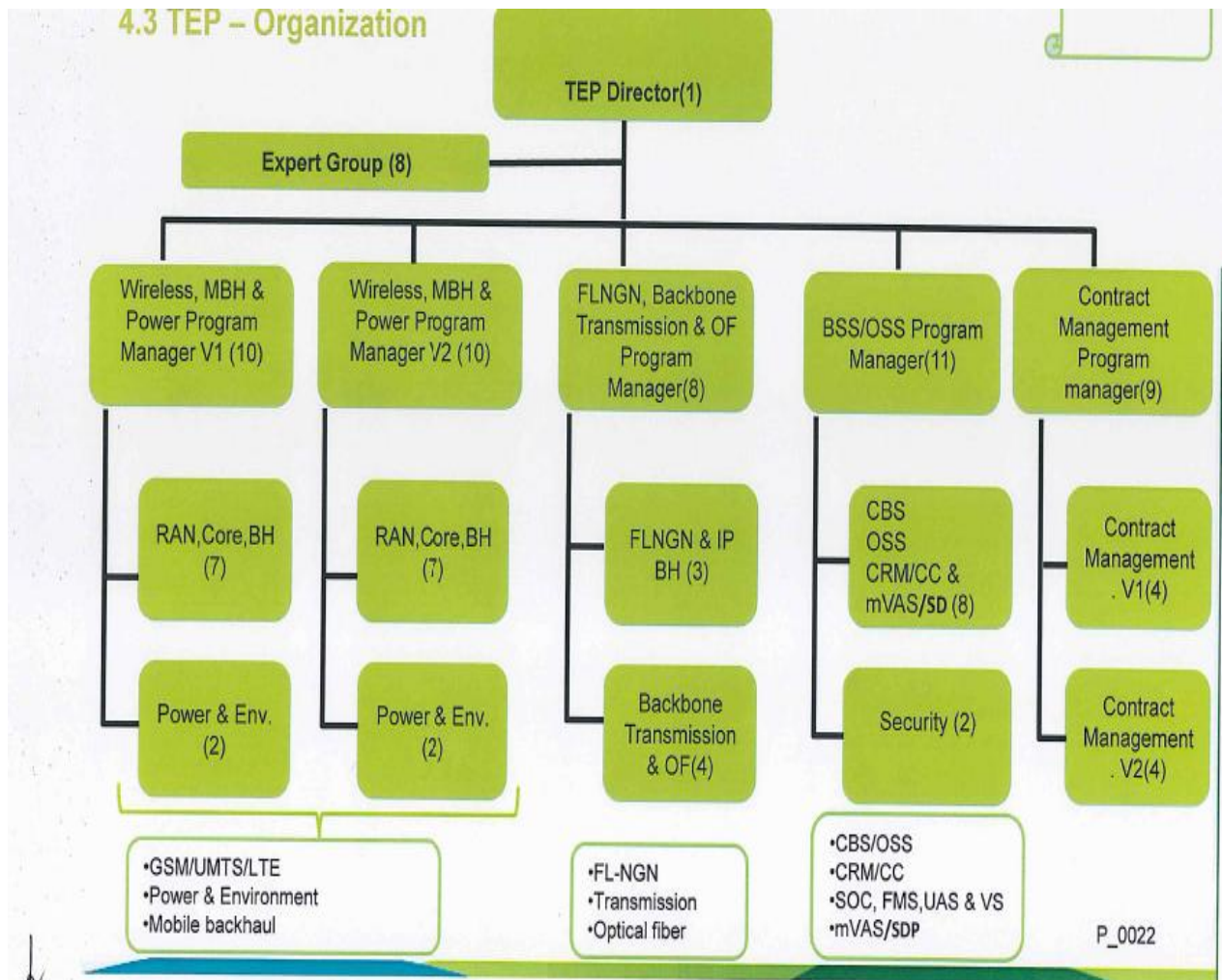


Figure3.1. TEP organization

Source: TEP charter , 2014

3.2. Research Design

In general, there are three research methods in social sciences: (a) qualitative, (b) quantitative, (c) mixed methods (WangRui & Guhongfei,2016)). In this study only quantitative approach was used.

The research design employed in this study was explanatory research type. Descriptive analysis refers to the transformation of raw data into a form that would provide information to describe a set of factors in a situation that will make them easy to understand and interpret. Accordingly, the descriptive research design was used to analyze demographic, accurate profile of the respondents, and some points on the structured questionnaires.

The explanatory part used correlations and multiple linear regressions to assess the relationships or associations between the practices and challenges (independent variables) and the project performance (dependent variable).

3.3. Sampling procedure

The population of the study was employees participated in TEP project in ethiotelecom. The total number of people participated in the program is 1051 but are not proportionally distributed among the divisions of ethiotelecom.

Among the most important element of the research, the sample size is the one which addresses the characteristics of the whole file series with confidence (Kothari, 2004). To stick with good statistical validity, the study used a representative sample size. For this study maximum care is given to get the highest sample size and accordingly the sample size was determined using the following formula (Yamane, 1967).

$$n_0 = \frac{z^2 p(1-p)N}{z^2 p(1-p) + Ne^2}$$

Where:

n_0 = sample size

z = confidence interval corresponding to a level of confidence

p = population proportion

N = population size

e = precision or error limit

Taking the value of $N = 1051$, which is the total size of the population, $Z = 1.96$ (95% Confidence Interval), $p = 0.5$ and level precession $e = 10\%$, the required sample size found is 88.

The study used **Stratified random sampling** to select respondents from the total population. Since Stratified random sampling intends to guarantee that the sample represents specific subgroups or strata. Accordingly, application of stratified sampling method involves dividing population into different subgroups (strata) and selecting subjects from each stratum in a proportionate manner.

In relation to this, Stratified sampling can be divided into the following two groups: proportionate and disproportionate. Application of **proportionate stratified random sampling**

technique involves determining sample size in each stratum in a proportionate manner to the entire population

Therefore, the choice of stratified random sampling by the researcher enabled to have adequate representation of all subgroups can be ensured. Proportionate stratified random sampling was selected in this study mainly due to employees in different divisions have different academic and professional backgrounds and may have different level of understanding about project management practices and to incorporate all these professional mixes the researcher followed this sample selection method. The total sample size obtained from the population by the given formula is 88 respondents and these respondents were distributed to each stratum or sub groups proportionately as below.

$$= \frac{\text{number of individuals in the subgroup} \times \text{the sample size}}{\text{The total population}}$$

Based on the above formula the distribution the number of TEP participants and respondents in each division is indicated in table below.

As the data obtained from TEP office, the total number of staff participated in TEP were 1051 and the number divisions or work units participated in this project were 12. From these 1051 total employees participated in the project, 486 of them were staffs, 483 were project coordinators, 67 project managers, 14 program managers and 1 program director. Number of employees participated in TEP from the 12 divisions as indicated in table 3.1 below are: 703 employees from network division, 142 from sourcing and facility, 73 from information system, 52 from TEP office, 34 from residential marketing and sales, 16 from customer service, 10 from finance etc... see table 3.1 below. As already explained in the description of the study area section, the project was mainly owned by network and information system divisions and the other divisions gave support. Based on this information, the sample size was drawn from this total population using the proportionate sampling formula explained above and randomly selected 88 employees as indicated in below table.

Please note that when sample is calculated using the formula to estimate sample number of people participated from human resource division, quality and process division, legal division and CEO office, the number is insignificant and they are merged together and one person is taken from human resource division.

Table 3.1. Proportionate sampling of respondents

Division	Director	Program Manager	Project manager	Project coordinator	Staffs	Total number of employees	Sample
Network	1	14	67	483	486	703	59
Sourcing and Facilities						142	12
Information System						73	6
TEP Office						52	4
Residential Marketing and Sales						34	3
Customer Services						16	1
Finance						10	1
Enterprises						9	1
Human Resources						7	1
Quality and Process						2	
Legal Division						2	
CEO Office						1	
Total		14	67	483	486	1051	88

Source: TEP report (2017)

3.4. Data Collection Method

In carrying this research, the following method was used to collect a relevant information or data. The study relied on quantitative data type in order to arrive at reliable conclusions for the research questions. Concerning sources of data, both primary and secondary sources were used for generating valuable and relevant data.

Primary data were collected through questionnaire from targeted TEP project staffs found in TEP offices and some other supporting divisions as explained table 3.1 above, whereas secondary data were collected from publications of books, journals, reports, and bulletins, work governances, company background information and unpublished reports etc.

With a combination of these two data sources, the researcher was able to obtain the required information that was essential to reach sound conclusion about the study and answer the research questions.

3.5. Data Reliability and Validity

According to Kothari, (2004) reliability is the consistency of results provided by the measuring instrument. A consistent finding of data collection technique, analysis, or procedure yielded is reliability (Saunders et.al.2009).

The reliability analysis was done by using SPSS by Cronbach's alpha test. This is done mainly to see the internal consistency with in the collected data. In dealing with reliability test, Cronbach's alapha coefficient was made on each variable. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient is to 0, the lesser the internal consistency of items in the scale and the closer to 1.0 Cronbach's alpha the greater the internal consistency of the items in the scale.

Based on this, as we can see from the SPSS result table 3.2, the Cronbach's alpha coefficient for each item was tested and the result shows there is high internal consistency. Because based on George and Mallery, (2003) rule of thumb, a Cronbach's alpha coefficient greater than 70% is good.

Table 3.2. Reliability statistics

Variables	Number of items	Cronbach's Alpha
Initiation	8	70.7
Planning	10	79.2
Execution	7	81.3
Monitoring & Control	7	70.6
Closing	5	73.9
Challenges	12	93.5
Performance	5	71.6

Source: own computation from survey data

“Validity refers to the extent to which a test measures what we actually wish to measure. 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” (Kothari, 2004).

According to Kothari (2004), there are three different types of validity. These are - content validity; criterion-related validity and construct validity. The applicability of the validity tests depend upon the nature of the research problem and the judgment of the researcher. For this study, content validity (face validity) will be selected to assess the validity of the data.

“Content validity (face validity) is the extent to which a measuring instrument provides adequate coverage of the topic under study. If the instrument contains a representative sample of the universe, the content validity is good. Its determination is primarily judgmental and intuitive. It can also be determined by using a panel of persons who shall judge how well the measuring instrument meets the standards, but there is no numerical way to express it” (Kothari, 2004).

Based on this, the researcher believes the sample taken in this study adequately represents the total population characteristics and result obtained can be sufficiently generalized.

3.6. Method of Data Analysis

Quantitative data analysis technique was employed in this study. The quantitative technique of analyzing the data will be employed for data gathered through closed ended questions to assess the implementation Practices, the challenges of implementation of TEP, its performance and the relationship between performance and practices and challenges in ethiotelecom.

After the data is collected from primary and secondary sources, it was appropriately checked and edited by the researcher. Then the edited data was coded and manually entered into computer. Finally, the data was analyzed by using SPSS software as descriptive and explanatory. The descriptive part was discussed and analyzed by employing graphs, tables, frequencies, means, standard deviation to assess the implementation practices of each of the five project phase, how severe or least the presumed challenges were and how the overall performance of the project was. On the other hand the explanatory part of the study was discussed using correlations and multiple linear regressions. The correlation analysis was employed mainly to assess if there is significant degree of association between the project implementation practices in each of the five project phases and the implementation challenges with the project performance. Furthermore the multiple linear regression was employed to assess whether there is causal relationship between the practices of each of the five project phase and implementation challenges with project performance. In this regression analysis, practices of each of the five project phases and the challenges were considered as independent variables and project performance was considered as dependent variable.

Using multiple linear regressions, the explanatory variables were checked whether they are significantly explaining the dependent variable (performance) or not. The model is expressed as below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon$$

Where

Y = Project performance (dependent variable)

X₁ = Project initiation practices

X₂ = planning practices

X₃ = execution practices

X₄ = Monitoring and Control practices

X_5 = Closing and

X_6 = Challenges. $x_1 - x_6$ are explanatory variables

β_0 = Constant term (intercept)

$\beta_1 - \beta_6$ are regression coefficients

ϵ = error term

3.7. Ethical Considerations

Ethics are norms or standards of behavior that guide moral choices about our behavior and our relationships with others. The goal of ethics in research is to ensure that no one is harmed or suffers adverse consequences from research activities (Cooper & Schindler, 2003). Obeying ethical rules is vital in conducting research. Hence, the following ethics will be considered while conducting this research:-

Quantitative survey respondents and qualitative survey informants will be provided with detail explanation about the overall objective of the study ahead of time;

Participants of the study will be informed that the data will be used only for the intended academic purpose; and

Respondents will be inquired in highly respected manner.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

This chapter deals with analysis and interpretation of the gathered data from Telecom expansion project in ethiotelecom through structured questionnaires and key informant interviews. The chapter organized in two main parts. The first part is concerned with the demographic characteristics of respondents and the second part focused on analyzing, interpreting and presenting of the collected data. Regarding the data collection method, 88 structured questionnaires were distributed which were developed using five point likert-scale (starting from strongly disagree and ends in strongly agree in a continuum bases) and all the questionnaires were filled and returned. All the data gathered were organized, tabulated and analyzed using SPSS software to get intuitive result.

4.1. Background information of the Respondents

This Section summarizes the Sex of respondent, age of respondent, work experience (service years) in the organization, experience in TEP implementation, educational level and respondents position (Level) in the organization. The main focus of this section is to show the proportion female and male respondents, their work experience in the company, their experience in implementing TEP, educational level of employees in the project etc. Based on this, we will see all the demographic characteristics of the respondents one by one as below.

Table 4.1. Demographic characteristics of respondents

Characteristics	Frequency	Percent (%)
Respondent gender		
Male	57	64.8
Female	31	35.2
Total	88	100.0
Age of respondents		
23-31	36	40.9
32-42	48	54.5
43-55	4	4.6
Total	88	100.0
Job level in the organization		
Staff	26	29.5
specialist	40	45.5
coordinator	11	12.5
supervisor	11	12.5
Total	88	100.0
Work Experience in the organization		
0 - 5 years	18	20.5
6 - 10 years	12	13.6
11 – 15	44	50.0
Above 15 years	14	15.9
Total	88	100.0
Educational Level		
Certificate	1	1.1
Diploma	2	2.3
First degree	58	65.9
Master's degree	27	30.7
Total	88	100
Experience in TEP implementation		
Less than 6 months	25	28.4
6 months to one year	18	20.5

1 – 2 years	26	29.5
More than two years	19	21.6
Total	88	100

Source: own computation from survey data

4.1.1. Gender of the respondents.

As we can see from Table 4.1 above, 64.77 percent of the respondents were male and 35.23 percents were female respondents. This may imply that the gender proportion of employees in the project is not balanced.

4.1.2. Age of the respondents

The respondents in TEP were also asked to indicate their age interval and as indicated in Table 4.1 above, 40.9% of the respondents are in the interval of 22-32 years old which is the second largest age group. Majority of the respondents are in the age group of 32-42 years of age which accounts 54.5% from the total respondents followed by age group of 43-55 (4.6%). From this we can conclude that largest proportion of employees in Telecom expansion project is young people.

4.1.3. Educational Level

As depicted in table 4.1 above, respondents were asked to show their highest level of education achieved and indicated majority (65.9%) of them have first degree. 30.7% of the respondents in the project have masters degree and 2.3% of the project staffs have diploma and the remaining 1.1 % of have certificate. This indicates majority of the project staffs have first degree and above level of education. And this might imply that majority of our respondents are appropriate and capable of understanding the questionnaires and all about TEP implementation process.

4.1.4. Work experience

As shown above in table 4.1, TEP staffs were asked to show their work experience in the company and indicated majority (50%) of them have 11-15 years of work experience. 20.5% of the respondents have five or less years of work experience and 15.9% of the respondents have greater than 15 years of work experience in the company and the remaining 13.6% within the interval of 6-10 years of working experience in the company. This indicates majority of the staff assigned in the project have more than five years of work experience or can be said adequate number of senior staffs were assigned in the project and this might positively contribute for successful implementation of the project.

4.1.5. Respondents' Job level (position) in the organization

Respondents were also asked to show their current job level in the organization and as depicted in table 4.1 above, majority of the respondents of the questionnaire (45.5%) are at specialist level in their current position followed by second large in number 29.5 % is staff level and the remaining 25 % are supervisor and coordinator positions which account 12.5% each. This implies all the respondents are professional in their field of job assigned.

4.1.6. Respondents' experience in TEP implementation

Experience of TEP implementation indicates for how long the respondents have been assigned and working in telecom expansion project. Based on this, 29.5% of the respondents have experience of TEP implementation for one to two years. 28.4% of the respondents in the project have an experience of less than six months in implementing TEP while 21.6 % and 20.5% of the employees in the project have more than two years and six months to one year experience respectively in implementing TEP. This may imply that majority of the respondents have adequate experience of implementing TEP and have enough understanding to consider and value their response equally in this research.

4.2.TEP implementation practices

4.2.1. Initiation Phase

In this sub section, respondents were asked to express their level of agreement on how the presumed project initiation activities were under taken in Telecom expansion project of etiotelecom. The responses were rated from 0 (strongly disagree) to 4 (strongly Agree) to all questions regarding implementation practices and performance.

The Initiating Phase of the project is where it all starts (McBride 2016). And the first step for any project and any project manager experienced is to figure out what the objective of the project is. Based on this, respondents were asked whether objective of the project was captured in one precise sentence. With 2.91 mean value, the respondents expressed their agreement with this sentence and majority of staffs in TEP believe that the project objective was properly captured and standard deviation which ranges from 1.03 to 1.37 which indicates no big variation. As it shows the spread of ideas of the respondents, we can say that respondents were agreeing in similar ideas or no significant number of variations that deviates from the mean.

as indicated in table 4.1 below. Respondents were also asked whether high level project schedule milestones were properly identified. Regarding schedule milestones significant number of respondents believes that high level schedule milestones were identified with mean score value of 2.33. large number respondents either disagree with the idea or remain neutral. This might indicates that, though significant numbers of project staffs believe that high level project schedule milestones were clearly identified in the project, majority of the staff either don't believe they are properly identified or have no idea about the issue.

The key topic in any contract between two parties is to define the scope. Project scope, is the work that must be done to deliver a product with the specified features and function to the end user. And the product, which will be delivered through the project, should satisfy both the customer and the stakeholder (Reedy,2016).This implies, identifying project scope right from the beginning is mandatory to bring satisfaction of stakeholders with the deliverables and avoid misunderstanding about the specific features of the deliverables. Accordingly TEP staffs were asked whether scope of the work was identified at high level in the initiation phase. Majority of the employees (mean value of 2.57) believe that scope of the work was identified at high level. Similarly respondents were asked whether the required resource of the project were identified at the initiation phase and respondents believe that required resource for the project were identified

at high level in this phase in TEP with mean value of 2.93. As identifying scope of the work and resource requirement of the project at the initiation phase helps to guide project goals, deadlines and relationships that shape the project as well as minimize the risk of change orders and disruptions, while staying on budget, it might have significant positive contribution for the success of the next phases and overall TEP implementation.

Table 4.2. The initiation Phase Practices

Statement	N	Mean	SD
Objectives of the project captured	88	2.91	1.17
High-level project schedule milestones	88	2.33	1.37
High level scope of the work identified	88	2.57	1.19
High-level project resources identified	88	2.93	1.03
First draft of the stakeholder management	88	2.75	1.33
Complete project charter prepared	88	2.74	1.10
Project kick-off meeting conducted	88	2.80	1.12
High-level planning was prepared	88	2.80	1.29
Overall Mean		2.73	

Source: own computation from survey data

Regarding stakeholder management, TEP staffs were asked whether first draft stakeholders management tool was developed in this phase of TEP. Majority of the employees with mean value of 2.75 believe that first draft of stakeholder's management tool was developed in initiation phase. As explained by McBride, as a project manager it is critical to confirm your understanding of the project objectives and what constitutes success, and start building collaborative relationships with stakeholders because a big part of project management, you will find, is relationship building with stakeholders, so even if you think you know what the objective is, make an appointment and start building relationships with those key stakeholders, because you are going to need them later. Thus, identifying and creating relationship with key stakeholders is vital task to insure project success and identifying key stakeholders can be considered it was practiced at the initiation phase in TEP.

The remaining three issues raised to respondents in this phase about TEP were whether complete project charter was prepared, project kick off meeting was held and high level planning was

prepared. Based on this, with mean score value of 2.74, 2.8, 2.80 the respondents respectively believe that all the mentioned activities were performed. From this we can say that at the initiation phase most of the basic activities that are required to be performed were undertaken in Telecom expansion project in ethiotelecom except High-level project schedule milestones were not properly identified at this phase.

4.2.2. Planning Phase

In this sub section respondents were requested to express their level of agreement on how the basic planning activities were practiced in Telecom expansion project.

In our discussion in the initiation phase above we have seen that identifying project scope is essential to produce a deliverable that can satisfy the needs of both the customers and stakeholders and to clearly specify the features of deliverables. In addition to this, we have also seen that project scope was identified at high level in the initiation phase. In this section, respondents were asked whether scope statement of the project was prepared in detail in the planning phase of TEP. Majority of the respondents with mean of 2.57 agreed that detail project scope statement was prepared but the remaining significant number of the respondents remain not agree or neutral with the idea. This may indicate that though majority of the respondents believe that there was detailed project scope statement, significant number of people are not in agreement with the idea and improvement is needed in this area of the project. Similarly TEP employees were also asked whether project teams were recruited and assembled properly and most of employees with mean value of 2.75 confirmed that project teams were recruited and assembled in a way that enables them to perform the required activities of the project.

The most important part of the planning phase is the development of the work breakdown structure and it is essential to develop a complete and well organized WBS (Brandon, 2006). The WBS is the basis for all project planning and later performance monitoring. As WBS is the basis not only for planning but also to monitor performance of our project against our plan at later stage, it is considered in this study as the basic component of planning and respondents were asked whether work breakdown structure was developed in the planning stage of the project. Most of the respondents with mean value of 2.89 agreed that work break down structure was prepared in this stage that mainly helps to estimate time and cost, staffing and assignment of human resource, dependency and sequencing of activities and to conduct performance and risk analysis etc. Similarly respondents in this section were asked whether network diagram was

developed, activity, cost and time estimation was mad and overall budget and schedule of the project was determined. And with mean value of 2.65,2.45 and 2.89most of the respondents respectively agreed with the statements or we can say majority the respondents agreed with the ideas.

With regard to procurement plans, majority of the respondents with mean value of 2.98 replied, procurement plans of the project were established and this can show us that procurement plan which is one of the basic components of any project plan is properly practiced in TEP. As explained by *Reedy* every project depends on the procurement of materials or equipment. Therefore, it is necessary to prepare procedures to deal with external vendors to make the purchases serve specific objectives of the project and we must determine purchasing strategies as well as the nature of the contracts and how to manage the identification and follow-up of procurement procedures. We must also identify how to maintain the quality of purchases or services provided to the project.

Table 4.3. The planning Phase practices

Statement	N	Mean	SD
Detail Scope statement preparation	88	2.57	1.13
Project teams recruitment	88	2.75	0.78
Work breakdown structure (WBS) development.	88	2.89	0.98
Network diagram preparation	88	2.65	1.00
Proper activity cost and time estimation	88	2.45	1.11
Overall budget and schedule preparation	88	2.89	1.07
Procurement plans established	88	2.98	0.76
Possible risks identified	88	2.34	1.01
change control, communications, management plans development	88	2.56	1.16
Overall project plan approved	88	2.94	0.96
Overall Mean		2.70	

Source: own computation from survey data

The other issue raised to TEP staffs by the researcher is whether possible risks were identified at the planning stage in this project. The mean score value is 2.34 only. This may imply that, a

significant number of project staffs either disagree with the idea or they are not sure with it, improvements are required in this regard because the issue of risk is very critical for any project of an organization. As explained in Reedy, (2016), each project has its own risk, whether the result of technical aspects or the result of procedures and the project execution sequence. Therefore, the risk should be managed by identifying it first, setting priorities, and then finding a solution according to the type of event, its likelihood of occurring, and its potential impact on the project. It should also be followed by a periodic follow-up phase precisely with the assurance of the distribution of responsibilities and authorities for each item that will have a high impact on the project.

The last points asked to respondents were whether change control plan, communications plan, management plans were developed and overall project plan was approved by concerned body. The mean values were 2.56 and 2.94 which indicates most of the respondents respectively agreed with the idea and this may indicate that these basic components of any project plan are almost successfully practiced in TEP.

4.2.3. Execution Phase

As we can see from table 4.4 below, respondents were asked to express their level of agreement on statements indicated in the table which were presumed to indicate key activities to be performed in execution phase of a project.

Team meetings in project execution are mandatory to receive feedbacks about project performance, challenges, opportunities, risks etc daily, weekly, monthly etc as needed. To ensure whether this important project execution component is conducted in TEP, respondents were asked their level of agreement on the idea team meetings were held properly and most of them with mean value of 2.48 were agreed with the idea and believe that team meeting were effectively held in TEP. Similarly TEP staffs were also asked whether project schedule was updated regularly in execution phase and only 2.07 mean value believe that it is updated regularly. The remaining majority do not agree with the statement or remain neutral and this might show that there was a gap in regularly updating project schedules in TEP. As explained by McBreed, Tracking any unplanned work that gets added into the workflow throughout execution is mandatory because as change requests are approved and unexpected work gets added, it's important to incorporate those tasks into the schedule so that you have a realistic projected completion date.

Establishing execution metrics is one of the principal components of project execution phase and as explained in *Carstens et al (2013)*, Metrics represent defined attributes of a process or product whose possible values are numbers or grades which potentially influence project activity and therefore need to be relevant, straightforward, and quantifiable. Failure to define and analyze measured results and adjust project direction can lead to less than desired results. Metrics are then able to be translated into vision and strategy to form tangible targets and focus work activity on formal critical success factors. In TEP most of the respondents with mean value of 2.20 believe that project execution metrics have been properly established. But significant number of the employees (34.1%) disagree agree with the statement and believe that proper project execution metrics were not established. Thus, improvement is needed in this regard.

As explained in our discussion in planning phase, risks should be identified and also be followed by a periodic follow-up phase precisely with the assurance of the distribution of responsibilities and authorities for each item that will have a high impact on the project. Based on this, respondents were asked to put their level of agreement on the statement project risks are reviewed regularly and with mean 1.95 small number of project staffs believe that they were regularly reviewed. But majority of the respondents do not believe risks were regularly reviewed.

Table 4.4. Execution phase practices

Statement	N	Mean	SD
Team meetings were held	88	2.48	1.14
Regular project schedule updates	88	2.07	1.12
Project execution metrics established	88	2.20	1.26
Project risks reviewed	88	1.95	1.15
Project status updates to key stakeholders	88	2.61	0.99
Escalating Problems impeding the team's ability to execute	88	2.51	0.83
Quality assurance and scope verifications	88	2.55	1.27
Overall Mean		2.34	

Source: own computation from survey data

Finally some other basic execution components asked to respondents were whether Project status updates are provided to key stakeholders regularly, Problems impeding the team's ability to execute the project plan are efficiently escalated and Quality assurance and scope verifications

were properly made. With mean value of 2.61 , 2.51 and 2.55 respectively, respondents agreed with the idea and this may indicate that though the two were practiced properly, the second component (Problems impeding the team's ability to execute the project plan are efficiently escalated) was not practiced because 53.4% of the respondents remain neutral and 5.7% of them were disagreed with the statement (appendix 2). Thus, most of the execution components except risk review, and regularly updating project schedules were properly practiced in TEP.

4.2.4. Monitoring and Control Phase

In order to assist the execution of projects, project monitoring and control methodologies have been developed and its overall purpose is to understand the evolution of the project and measure its progress. This permits to undertake actions to correct the trajectory of the project when it deviates from the plan (*Marle & Vidal, 2016*). In table 4.5 below, key monitoring and control practices are stated and employees of telecom expansion project were asked to express their level of agreement on each statement.

With regard to performance report issue in the project, employees were asked if performance report was made for every activity and most of them agreed with the statement and indicated performance report was made for every activity with mean value of 2.52. Five of the next statements focus on control activities. With 2.72 mean value the employees expressed their agreement that overall change control was made in this phase of the project and majority of the employees agreed again on the availability of scope control, quality control, schedule & cost controls and management by exception. But respondents did not agree on the availability of risk response control. This may imply that majority of the monitoring and control practices or activities were made in TEP except risk response control. But as we have tried to explain about risk in our planning and execution sections discussions, risks should be identified and also be followed by a periodic follow-up phase precisely with the assurance of the distribution of responsibilities. Thus lack of risk response control may cause a severe negative consequence for project success.

Table 4.5. Monitoring and Control phase practices

Statement	N	Mean	SD
Performance reports	88	2.52	0.82
Overall change controls	88	2.72	0.72
Project scope controls	88	2.34	1.23
Project quality controls	88	2.76	0.77
Risk response controls	88	2.32	1.19
Schedule and cost controls	88	2.48	1.15
Management by exception	88	2.45	1.23
Overall Mean		2.51	

Source: own computation from survey data

4.2.5. Closing Phase

As explained in Kuster *et.al* (2015), Brandon (2006) and others, all projects come to an end and even the abandoned ones involve close-off work. In Other words Projects may come to successful completion and end normally (perhaps within time and budget constraints) or they may be terminated abnormally due to different reasons. When the project is completed, either normally or abnormally, some key activities should be performed and Table 4.6 below contains some presumed key activities to be performed at the closing phase of a project. Respondents were requested to express their level of agreement regarding these activities.

Procurement audits & contracts close out, product verification & acceptance test are among the key project closing activities. With 2.53,3.18mean valuesrespectively, TEP staffs agreed with the statements and confirmed that both Procurement audits & contracts close out as well as product verification & acceptance test were made in their project closing phase. As discussed in DING (2016), Client acceptance should be based upon the project requirements defined in the contract and follow the formal acceptance procedure. Project customers should be reminded of any variation from its demand and demonstrate the variation record approved by the client like with the client's signature. In addition, all unsolved project issues should be able to be dealt with formally. Accordingly as expressed on their level of agreement, TEP staff believe that formal

product verification, acceptance test and required audits were performed and signed by the client and the contractor in every deliverables. This may imply that contract closure and product verifications were properly practiced in TEP.

The other issue raised to respondents about closing phase is whether Lessons learned from the project were identified and properly documented for future use. Only 2.21 mean values of the respondents believe that lessons learned were documented. The remaining majority were either disagree with the idea or remain neutral and this indicates that, lessons learned from the project were not properly identified and documented. *But according to DING*, as the documentation of project success or failure, a lessons learned summary report presents an important channel to generate enterprise knowledge through projects. This documentation provides historical data and useful references for the budget and schedule planning of future projects to be undertaken by the enterprise. This may imply that failure to properly document lessons learned will have its own negative consequence for success of future projects that will be initiated by the organization. Regarding the remaining two issues, with mean value of 3.01 and 2.87 respectively, most of the respondents agreed and confirmed that all project records were updated and Project teams were officially released to their operational work.

Table 4.6. Closing Phase Practices

Statement	N	Mean	SD
Procurement audits and contract(s) close out	88	2.53	1.06
Product verification and acceptance test	88	3.18	.67
Lessons learned documentation	88	2.21	1.29
All project records were updates	88	3.01	.95
Official release of project teams	88	2.87	1.08
Overall Mean		2.76	

Source: own computation from survey data

4.3. TEP implementation challenges

Under this subsection factors that are presumed as obstacles for successful implementation of TEP are listed in table 4.7 below and respondents were asked to rate the level of impact or challenge on implementation practices. The challenges were rated as in five levels starting from Least (the lowest in challenge) to extreme (the highest in challenge).

Factors that are considered as highly challenging by majority of the respondents were: Lack of proper coordination with stakeholders (60.2%), Lack of proper fund management in the project (54.5%), Government Policy challenges (53.4%), Project communication and integration management problems (51.4%).

On the other hand some factors are considered as relatively less challenging during implementation practices of TEP phases. These are: Lack of project “ownership” by team (57.9%), Lack of formal methodology (47.7%), Lack of executive management support (46.6%), Poor estimates of resource requirements (46.6%), Lack of proper planning (45.4%), Incompetent staff (42.1%), Improper setting of milestones (42.1%). Compared to the highly challenging factors, the number of less challenging factors is greater than that the highly challenging factors. This may imply that majority of the presumed challenges in TEP implementation were not big obstacles as expected except the above listed four factors which are classified as highly challenging.

Table 4.7. Challenges of implementing TEP phases.

Statement	N	Least	Lower	Moderate	High	Extreme	Mean	SD
Lack of formal methodology	88	26.1%	21.6%	28.4%	10.2%	13.6%	1.63	1.34
Poor estimates of resource requirements	88	8.0%	38.6%	4.5%	25.0%	23.9%	2.18	1.37
Lack of proper planning	88	31.8%	13.6%	15.9%	19.3%	19.3%	1.80	1.53
Lack of proper fund management	88	12.5%	11.45	21.6%	38.6%	15.9%	2.34	1.24
Lack of proper coordination with stakeholders	88	6.8%	17.0%	15.9%	40.9%	19.3%	2.48	1.18
Lack of project “ownership” by team	88	17.0%	40.9%	31.8%	10.2%	0%	1.35	.88
Team not hardworking and focused	88	22.7%	13.6%	23.9%	15.9%	23.9%	2.04	1.47
Lack of executive management support	88	34.1%	12.5%	15.9%	37.5%	0%	1.56	1.30
Incompetent staff	88	23.9%	18.2%	15.9	34.1%	8.0%	1.84	1.33
Improper setting of milestones	88	5.7%	36.4%	18.2%	39.8%	0%	1.92	.99
Project communication and integration management problem	88	17.0%	18.2%	13.6%	22.7%	28.7%	2.27	1.47
Government Policy challenges	88	4.5%	13.6%	28.4%	30.7%	22.7%	2.53	1.12

Source: own computation from survey data

The standard deviation in table 4.7 above ranges from 0.88 to 1.53 which indicates no big variation. As this measurement shows the spread of ideas of the respondents, we can say that respondents were agreeing in similar ideas.

4.4. TEP implementation performance

This sub section is mainly intended to assess the success level of TEP implementation practices measured in terms the below listed performance parameters in table 4.8.

Regarding whether objectives of TEP were successfully achieved or not, majority of the respondents agreed that the intended TEP objectives were successfully achieved with mean score value of 2.77. The next issues raised for TEP staffs were whether the project was completed with planned budget and expected completion time. In this regard majority of the respondents are not agreed with the statements (mean value 1.84). Majority of the respondents either disagreed or remain neutral with the statement ‘TEP was completed at its expected completion time’.

Similarly majority of the respondents were not agreed with the third issue (TEP was completed within planned budget) with mean value only 1.72. This may imply that TEP was not completed at its expected completion time and planned budget.

The other performance measurements in this study were quality and goal achievement. Based on this, majority or mean value of 2.86 and 2.96 of the respondents believe that the expected quality was delivered and the project was completed in a way that can contribute to its designed goal respectively. From this discussion we can see that the project was considered as good by respondents in terms objective achievement, goal achievement and quality but not in terms cost and schedule. So, is the project successful?

Brandon (2006) in his definition of project success explained that “Cost, time, and quality (often referred to as the Iron Triangle) have formed the prime basis for measuring project success for the last 50 years. However in more recent years other criteria are also important. Some of these other criteria may be less quantitative, more difficult to measure, and some of the criteria may be temporary in that their values may be much more important at some points in the project”. If we evaluate TEP in terms this traditional definition, it is difficult to say the project is successful because out of the three measurement parameters only quality is successfully achieved but as explained above the other parameters can also be considered as success criteria.

Table 4.8 Success of TEP implementation practices

Statement	N	Mean	SD
The intended objectives of TEP achieved	88	2.77	0.72
TEP was completed on time	88	1.84	0.78
TEP was completed on budget	88	1.72	0.79
All the quality standards delivered.	88	2.86	0.68
TEP contributed to its designed goal	88	2.98	0.70
Overall Mean		2.44	

Source: own computation from survey data

4.5.The Relationship between implementation practices of project phases and TEP Performance

In this section we will see the relationship between TEP performance and the practices of the five project phase (Initiation, Planning, Execution, Monitoring & Control and Closing) undertaken and the challenges in TEP using Bivariate Pearson correlation to observe the strength, significance and direction of their relationship.

Table 4.8 below shows the relationship between TEP performance and the practices of the five TEP phases as well as the challenges faced during the project phases' implementation. To observe this relationship, a bivariate 2-tailed Pearson correlation test was used. The significance level of the correlation was measured at 5% and 1% level of significance and interpretation of the correlation result was made based on Somekh and Lewin (2005) criterion for evaluating the magnitude of a correlation as shown in table 4.8.1 below.

As can be seen from table 4.8.1 below, the value of correlation coefficient(r) is considered as a cutoff point to categorize the correlation strength as weak, moderate and strong. Accordingly, if value of ' r ' is less than or equal to 0.33 the relationship is weak, if ' r ' is between 0.34 to 0.66 moderate relationship and ' r ' between 0.67 to 0.99 there is strong relationship between variables.

Table 4.9.1 Norm for Evaluating the Magnitude of a Correlation

S.N	S.N. Correlation coefficient (r)	Strength of relationship
1	$r < 0.33$	weak relationship
2	r - between 0.34 and 0.66	moderate relationship
3	r - between 0.67 and 0.99	strong relationship

Source :Somekh and Lewin (2005)

4.5.1. Relationships between initiation practices and performance in TEP

As can be seen from Table 4.9.2 below the relationship or degree of association between TEP initiation phase practices and TEP performance is tested using bivariate Pearson correlation (2-tailed). TEP performance and initiation practices are significantly correlated at 1% level of significance or P- value is 0.002 which is less than 1% or we have more than 99% level of confidence. The coefficient of correlation (r) between initiation and performance is 0.333 which is at the cutoff point and this may imply that the two variables are weakly correlated though they

have significant correlation. The coefficient of correlation has also positive sign and this shows the two variables are positively correlated or they move in same direction. From this we can say that as TEP initiation practices are properly practiced performance of TEP will be increased to some extent.

Table 4.9.2. correlations between implementation practices and challenges of project phases and project performance

	Initiation	Planning	Execution	M & control	Closing	Challenges	performance
Initiation	1						
Planning	0.281**	1					
Execution	0.337**	-0.043	1				
M & control	0.607**	0.385**	0.551**	1			
Closing	0.547**	0.566**	0.547**	0.772**	1		
Challenges	-0.619**	-0.362**	-0.575**	-0.812**	-0.726**	1	
Performance	0.333**	0.264*	0.246*	0.454**	0.450**	-0.304**	1

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

**. Correlation is significant at the 0.05 level (2-tailed).*

Source: own computation from survey data

4.5.2. Relationships between planning practices and performance in TEP

In this subsection we will see the level of correlation between planning practices and the performance of TEP. And as we can observe from Table 4.9.2 above the relationship or degree of association between TEP planning phase practices and TEP performance is tested using bivariate Pearson correlation (2-tailed). TEP performance and planning practices are significantly correlated at 5% level of significance or P- value is 0.013 which is less than 5% but greater than 1% or compared to correlation with initiation phase, planning phase practices have lower level of significance but still significant at 5%. The coefficient of correlation (r) between planning phase practices and performance is 0.264 which is less than the cutoff point (0.33) and this may imply that the two variables are weakly correlated though they have significant correlation. The coefficient of correlation has also positive sign and this show the two variables are positively correlated or they move in same direction. From this we can say that as TEP Planning phase practices are properly practiced performance of TEP will be increased in a little extent.

4.5.3. Relationships between execution practices and performance in TEP

The execution phase of TEP had also its own parameters presumed to be practiced to successfully implement this phase as we have seen in the descriptive analysis. And now we will try to see the relationship between these variables and the performance of TEP. As we can observe from Table 4.9.2 above the relationship or degree of association between TEP execution phase practices and TEP performance is checked by Pearson correlation (2-tailed). TEP performance and execution practices are significantly correlated at 5% level of significance or P-value is 0.021 which is less than 5% but greater than 1% or it has similar level of significance with the planning phase. The coefficient of correlation (r) between execution phase practices and performance is 0.246 which is still less than the cutoff point (0.33) and this may imply that the two variables are weakly correlated though they have significant correlation. The coefficient of correlation has also positive sign and this show the two variables are positively correlated or they move in same direction. From this we can say that as TEP execution phase practices are properly practiced performance of TEP will be increased in a little extent.

4.5.4. Relationships between monitoring & control practices and performance in TEP

In similar fashion the relationship between monitoring & control phase and performance of TEP was assessed in this subsection. And as can be seen from Table 4.9.2 above the relationship or degree of association between TEP monitoring & control phase practices and TEP performance is tested using Pearson correlation (2-tailed). TEP performance and monitoring & control practices are significantly correlated at 1% level of significance or P-value is 0.000 which is less than 1% or we have more than 99% level of confidence. The coefficient of correlation (r) between monitoring & control and performance is 0.454 which is greater than the minimum cutoff point (0.33) but less than the strong association cutoff (0.66) and this may imply that the two variables are moderately correlated and they have significant correlation. The coefficient of correlation has also positive sign and this show the two variables are positively correlated or they move in same direction. From this we can say that as TEP monitoring & control practices are properly practiced performance of TEP will be increased to moderate extent.

4.5.5. Relationships between closing phase practices and performance in TEP

In this subsection, we will assess again the relationship between closing phase practices and performance of TEP. And as can be seen from Table 4.9.2 above the relationship or degree of association between TEP closing phase practices and TEP performance is tested using Pearson correlation (2-tailed). TEP performance and closing practices are significantly correlated at 1% level of significance or P- value is 0.000 which is less than 1%. The coefficient of correlation (r) between closing phase practices and performance is 0.450 which is greater than the minimum cutoff point ($.033$) but less than the strong association cutoff (0.66) and this may imply that the two variables are moderately correlated and they have significant correlation. The coefficient of correlation has also positive sign and this shows the two variables are positively correlated or they move in same direction. From this we can say that TEP closing practices and performance of TEP are moderately and positively associated.

4.5.6. Relationships between TEP implementation challenges and performance in TEP

TEP implementation challenges are obstacles faced to successfully implement TEP phases. And as can be seen from Table 4.9.2 above the relationship or degree of association between TEP implementation challenges and TEP performance is tested using Pearson correlation (2-tailed). TEP performance and implementation challenges are significantly correlated at 1% level of significance or P- value is 0.004 which is less than 1%. The coefficient of correlation (r) between implementation challenges and performance is -0.304 which is less than the minimum cutoff point (< 0.33) and this may imply that the two variables are weakly correlated and they have significant correlation. The coefficient of correlation has also negative sign and this shows the two variables are negatively correlated or they move in opposite direction. From this we can say that TEP implementation challenges and performance of TEP are weakly and negatively associated.

4.6. Regression Analysis

In this section the study tried to assess the effect of each project implementation practices and the specified challenges on project success. All the project phases and the challenges were considered as independent or explanatory variables and project performance as dependent variable.

Before estimating the coefficients, some tests are made like multicollinearity and normality to check whether the model is properly formulated or not. Based on this, Table 4.10. below shows multicollinearity test results using variance inflation factor (VIF) and tolerance. This is mainly intended to check whether the explanatory variables are linearly correlated each other or not. Because if independent variables are highly correlated each other, they are talking about the same thing and can not be considered as independent. Multicollinearity can be detected with the help of **tolerance** and its reciprocal, called variance inflation factor (**VIF**). As rule of thumb, If the value of **tolerance** is less than 0.2 or 0.1 and, simultaneously, the value of **VIF** 10 and above, then the multicollinearity is problematic. Kutner et.al (2004) suggest that if VIF is greater than 10 then multicollinearity is high. Accordingly the model was tested whether it is free from this problem and as can be seen from table 4.10. below there is no problem of multicollinearity in the model.

Table 4.10. Multicollinearity test

<i>Variables</i>	<i>Coefficients</i>	
	Collinearity Statistics	
	Tolerance	VIF
Initiation	0.357	2.800
Planning	0.670	1.493
Execution	0.395	2.530
Monitoring & Control	0.509	1.965
Closing	0.560	1.787
Challenges	0.637	1.569

Source: own computation from survey data

The other test made in this model is test of normality to check whether the standardized and unstandardized residuals are normally distributed or not. This test was made using Kolmogorov-

Smirnov and Shapiro-Wilk tests and as can be seen from table 4.11 below we can say that the residuals are normally distributed because we are unable to reject the null hypothesis of “ no normality problem” as the significance level is greater 5%. This is mainly made because if it turns out that the random **errors** in the process are not normally distributed, then any inferences made about the process may be incorrect.

Table 4.11. Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Standardized Residual	0.087	88	0.095	0.980	88	0.192
Unstandardized Residual	0.087	88	0.095	0.980	88	0.192

Source: own computation from survey data

The multiple linear regression part in this study is mainly intended to assess whether the presumed explanatory variables are significantly affecting the dependent variable or whether the practices and challenges have significant effect on project performance. Based on this, coefficient of each project phase practices and challenges were estimated as summarized in table 4.12 below.

Coefficients of initiation, Execution, monitoring & control and the challenges are significant at 1% level of significance. But coefficient of closing practices is significant at 5% level of significance and planning is not significantly explaining project performance at all as the probability value is greater than 5%. Furthermore the overall significance of the model is also tested using F-statistics and it is significant at 1% level of significance but the overall variation in the dependent variable explained by the explanatory variables is only 58.6% (adjusted R squared) and the remaining variation on the dependent variable is explained by other unobserved factors that are not included in the model.

It can be inferred from the regression result that the most critical factor (practice) that is highly and significantly explaining TEP performance from all the practices and challenges is execution practice with coefficient of 0.99 and $P < 0.01$. This may show that, as execution practice of TEP

implementation increase by one percent assuming all other factors kept unchanged, TEP performance will increase by 0.99. And this may imply that as execution practice in TEP implementation is properly and efficiently practiced, TEP performance will be enhanced with almost similar proportion and thus, TEP performance is highly determined by the effectiveness of execution practice.

The next factor that is highly determining the performance of TEP following execution practice is initiation. Some of the practices performed in the initiation phase include: specifying project objectives, high level schedule milestones, high level scope identification, high level resource identification, first draft stakeholders' management preparation and developing project charter which contains all the above and other planned activities and can service as a reference in performing the remaining phases.

Table 4.12. Multiple linear regression results

Variables	Coefficients	Standard error	t-value	Probability
Constant	1.92	0.34	5.71	0.000
Initiation	0.78	0.09	8.29	0.000
Planning	0.08	0.07	1.07	0.290
Execution	0.99	0.12	8.20	0.000
Monitoring & Control	0.51	0.13	4.03	0.000
Closing	0.22	0.09	2.55	0.013
Challenges	-0.27	0.08	-3.32	0.001
F-statistics	21.53			0.000
R Squared	0.615			
Adjusted R squared	0.586			

Dependent variable: project performance

Source: own computation from survey data

The coefficient of initiation as can be seen from table 4.12 above is 0.78 with probability value of 0.000 which is less than 1%. This may indicate that as practices in the initiation phase are properly practiced and increase by one unit while other factors remain unchanged, TEP performance will be increased by 0.78 units. From this we can say that giving a due attention on each initiation practice and improving their effectiveness and efficiency will highly and significantly contribute the successful achievement of project goals, objectives and completing the project within planned budget and schedule.

As indicated in Dietmar (2015), if project initiation is properly practiced and managed specially project charter is properly developed and serve as single point of reference (SPOR) for a project, it serves as the heart of any project; all activity tasks of every one of the nine activities (knowledge areas) in a project draw their lifeblood from this heartbeat. If the SPOR charter is comprehensive, if its content has been defined unambiguously, if it has been reviewed and approved (with signatures) by all stakeholders, then the project is born with a healthy heart. Just like a body with a healthy heart is able to endure severe strain and master strong challenges, so will a project at the heart of which beats with a healthy charter. The regression result conforms to this idea by showing initiation phase practices collectively have high and significant positive effect on project success.

The other factor that highly explaining project performance following execution and initiation is monitoring and control practice. Practices in this phase may include: performance reports, change control, scope control, risk response control, schedule and cost control etc. The coefficient of monitoring and control is 0.51 with significance level of 0.000 which is less than 1%. And this implies that as all the monitoring and control practices are well practiced and collectively increase by one unit TEP performance will be increased by 0.51 units. This indicates that TEP performance and practices in monitoring and control phase are positively related and a proper practice of monitoring and control phase in TEP significantly contributes for project success.

Marle (2016) stated about monitoring and control that, the overall purpose of project monitoring and control processes is to understand the evolution of the project and measure (quantitatively or qualitatively) its progress. This permits to undertake actions to correct the trajectory of the project when it deviates from the plan (in terms of schedule, cost, performance, etc.), or when it appears that current objectives have no chance to be reached with the current and future situation. In addition this phase requires control of quality which requires monitoring the project to ensure everything is going according to plan, identifying when preventive or corrective actions are necessary, determining root causes of problems, providing specific measurements for quality assurance, and implementing change through the integrated change control system. All this activities mainly help the project to go smoothly as planned and finally achieve its objectives and

goal. In this regression analysis this phase is found to be one of the significant and have high effect on project success.

Closing practices are the last phase practices in project implementation and these practices were also significantly explaining the TEP performance with coefficient of 0.22. Though practices in this phase are explaining performance to a lesser extent compared to the previously discussed phase and are significant at 5% only, they are still significant. This may indicate that effective closing practices in TEP contribute positively and significantly for successful completion of the project. *R. DING (2016)* explained regarding this issue that, under the business environment featured with economy turbulence, the performance of project closure will determine not only the profits of enterprise but also the satisfaction level of project stakeholders, which plays a critical role for future business opportunities. As the last critical process of a project life cycle, project closure will occur if all project goals are achieved and customer acceptance of project products can be undertaken. Furthermore, a project is a temporary endeavor undertaken to create a unique product, service, or result. However, the impacts of project products on clients could be long term. Thus, Project closure is crucial for project success to avoid those uncompleted activities and outdated information that should have been tackled before the project team is dismissed. The regression result in this study too confirms the above idea by showing closing phase practices had significant positive contribution for TEP success.

Planning practices like scope statement preparation, work breakdown structure, team recruitment, activity sequencing, cost and time estimation, risk identification etc. are considered as most important activities that can determine the project success in literatures like *Reedy (2016)* as explained in our descriptive part of this research. *Heerkens (2002)* also explained that, project management really consists of two major phases doing the right project and doing the project right. Ensuring that your project is based upon a true need and that it's justified from a business standpoint are two important aspects of doing the right project. Project planning, on the other hand, is all about doing the project right. Project planning gets more attention than any other aspect of project management and justifiably so. It's hard to imagine how a project could be successful without some planning. But in regression results as can be seen from the table 4.11

above, it has the lowest coefficient from all the factors and is not significantly explaining the project performance. This may need some further assessment.

The other factor that is considered as determinant for project performance in this regression analysis is challenges of implementing the project. The collective effect of these presumed challenges on project performance is expressed in table 4.12 above. The coefficient of challenges is -0.27 with less than 1% level of significance and this may indicate that as challenges become more severe, the project performance will get declined. From this we can say that presumed challenges of project implementation were negatively affecting project success in TEP.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATIONS

This chapter deals with concluding of the overall discussions made in the previous chapters mainly on implementation practices of TEP project phases, challenges in the implementation process, over view about the performance the project and degree of association between the implementation practices and performance of the project. In addition the research provided appropriate recommendations based on the findings.

5.1. Conclusion

As explained in the introductory part, this research has raised three major questions to be answered by analyzing all the required and gathered data. These questions were addressed by the study as below:

- **How did the basic project phases (initiation, planning, execution, monitoring and closure) were practiced in telecom expansion project?**

To assess whether the five project phases were properly practiced, the study tried to raise some basic issues or activities that are recommended in Brandon(2006) that should be practiced to successfully implement projects. Based on this, most of the project phases starting from initiation to closing in TEP were good in practicing the major activities but some improvements were required in some activities in most of these phases. These activities that need improvement include: setting high level project schedule milestones (initiation phase), properly indentifying possible risks of the project and detail scope statement preparation (planning phase), team problem escalation and regularly updating project schedules (execution phase), risk response control(controlling phase) and Lessons learned documentation (closing phase) etc.

What were the main challenges to successfully implement the TEP?

Twelve factors were considered as will be major challenges of implementing TEP successfully in this study. Out of these only four challenges were considered as highly challenging by majority of the respondents. These are: Lack of proper coordination with stakeholders, Lack of proper fund management in the project, Government Policy challenges, Project communication and integration management problems. The remaining were considered as less and least challenges during project implementation in ethiotelecom. From this we conclude that majority the presumed challenges were not great challenges in implementing the project phases in TEP except the above explained four factors.

What was the effect of these practices and challenges on TEP performance?

To measure the project success, five major parameters were identified (goal attainment, objective achievement, quality of product, schedule and budget) and respondents were asked to rate the project based on these parameters. Accordingly, though the project was not completed within the planned budget and schedule, it was good in achieving its goals, objectives and delivering the expected quality of products. From this the project was good in delivering all the expected deliverables and currently giving the required service to our society except elapsing extra budget and to some extent extended its completion date.

The degree of association between project practices and challenges with project performance was assessed using correlation analysis. The result shows, initiation, planning and execution have weak but positive correlation with performance. Monitoring & control and closing practices have positive and moderately strong association and challenges have negative and weak association with performance. From this we can conclude that all the project phase practices and the challenges are significantly correlated but their association is not strong.

To assess the effect of each project practice and challenges on project performance, regression analysis was conducted and the result shows, all the project phase practices except planning have significant positive effect on project performance. Challenges have significant negative effect on project performance but planning has no significant effect on project performance.

5.2. Recommendations

Based on the findings discussed above the researcher recommended the following points.

- Ethio telecom should develop a culture of developing appropriate risk plans and risk response controls to prevent unexpected risks and failures and to successfully implement projects. One way of achieving this is through adequate involvement of key stakeholders right from the initiation stage and plan preparation like employees of the organization should adequately participate, government policy officers, representatives from road authority, water and sewerage, electric power, building owners and residents etc.
- Ethio telecom should properly identify scope of any project implemented in the organization and prepare a documented scope statement that will help as a reference during project execution to perform the required activities only and keep the project within quality, budget and schedule. To do this, Ethio telecom as a client should clearly identify all the required deliverables in coordination with specific work units or divisions who are responsible for the initiated project where all the activities to be performed and deliverables to be produced are known and should also consult experts to specify the requirements.
- It is also expected that in project of the future, ethio telecom should practice a well organized team problem escalation and schedule updates to successfully implement projects and to develop a scientific method of project management. Appropriate span of control and accurate communication channels should be established to get timely and accurate reports and to solve problems impending teams' ability to execute. Furthermore project leaders should keep teams' motivation enhanced that enables team members to keep deadlines for reports and enhance sense of ownership. Schedule updates should also be made continuously for every change made either by assigning responsible teams or individuals that are dedicated for this or establishing a proper communication between each section of the project through project managers and team leaders.
- Identifying lessons learned and properly documenting them for future use is mandatory and ethio telecom should develop a strong culture of lessons learned documentation at every project performed by the organization. This can be developed through practicing a culture using previous projects as a reference for similar future projects. Lessons learned

sessions should be prepared by project managers to identify the project failures and success for future use. Duplicating design of one project for other similar projects that will improve a culture of properly recording each steps made in designing the first project, enhancing commitment of senior management to support implementing of best practices and to improve negative project trends, proper and official project closure activities should be performed etc.

- Lack of proper coordination with stakeholders was found as one basic challenge in TEP implementation and ethiotelecom should develop effective and accurate coordination and communication culture with its stakeholders. Some of the most common key stakeholders of ethiotelecom in network expansion projects are but not limited to: Ethiopian electric power corporation, Ethiopian water and sewerage authority, Ethiopian road authority, government, service users etc. Starting from the planning stage representatives of these organizations and other key stakeholders should get consulted, ethiotelecom should receive utility plans of these big organizations before expanding its network materials, public discussions and with government officials should be made through out the project life time to settle non conformity etc.
- Government Policy challenges like procurement policy should properly be studied and handled in ethiotelecom projects. Because as ethiotelecom is government owned organization, its procurements are expected to be through official tender which needs longer period of time but project materials are most of the required urgently and to handle such inconveniency, ethiotelecom should make adequate preparation before the project is launched.
- TEP was not completed within the planned budget and schedule. Thus, ethiotelecom should have to develop an accurate and efficient planning of resources and activities as well as scope managements, risk identification and mitigation plans and strong auditing system should be practiced to avoid additional budget and time requests in future projects.

6. Limitations of the study

One of the basic characteristics of project is its uniqueness. This indicates every project has its own unique future that might not be generalized to other similar projects that activities under taken and solutions given to problems of this specific projects. Thus, the study is limited on assessing implementation practices and their effect on performance only in TEP projects which might not be generalized to other projects.

Due to elongated bureaucracy and confidentiality it was difficult for the researcher to access some documents given the short time allotted for the study.

7. Direction for future research

This study was focused on very limited points due to time, resource and methodological constraints. Thus, it is highly recommended if the following points are assessed on future researches in which this research constrained to cover them.

- Stakeholders management practices in TEP
- Factors affecting TEP performance in a better methodology like principal component and factor analysis
- Association between planning practices and TEP performance
- Communication and integration management practices in TEP

8. References

- Addisalem Bekele (2017): Implementation of Project Portfolio Management and Its Challenges: The Case of Ethio Telecom Wireless Network Program of Addis Ababa. . MA thesis Addis Ababa University.
- Ali Fentaw 2017): Practices of project manager selection in ethio telecom. MA thesis Addis Ababa university.
- Al-Mharmah, A. a. (2000). Project Management Practice by the public sector in a developing country. International journal of Project Management .
- Bezawit Berhanu(2017): Assessment of project implementation practice of entrepreneur and business growth project implemented by digital opportunity trust organization in addis ababa. MA thesis Addis Ababa university.
- Christoph Schwindt, 2015: Handbook on Project Management and Scheduling Vol.2
- Cooper, D and Schindler P. (2003) Business Research Methods, 8th edn., New Delhi : Tata McGraw-Hill Publishing Company Limited, p120.
- Dan Brandon, PhD, PMP (2006): project management for modern information systems. Christian Brothers University, USA
- Deborah Sater Carstens, PMP ,Gary L. Richardson, PMP Ronald B. Smith, PMP (2013): Project Management Tools and Techniques a practical guide. 2013 by Taylor & Francis Group, LLC
- Demoze Demisse (2017) : Assessment on practices and challenges of consultancy project management: the case of Ethiopian management institute. MA thesis Addis Ababa University.
- Dietmar W. Sokowski (2015) Mastering Project Management Integration and Scope. A Framework for Strategizing and Defining Project Objectives and Deliverables. 2015 by Pearson Education, Inc. Upper Saddle River, New Jersey 07458
- European union: Project management handbook
- Franck Marle, Ludovic-Alexandre Vidal(2016):Managing Complex, High Risk Projects. A Guide to Basic and Advanced Project Management. Springer-Verlag London 2016

- Gary R. Heerkens, PMP (2002): Project Management. The McGraw-Hill Companies, Inc. DOI: 10.1036/0071394494
- Ghaleb Y. Abbasi , Hisham A. Al-Mharmah (2000): Project management practice by the public sector in a developing country. International Journal of Project Management 18 (2000) 105±109.
- José Ramón San Cristóbal Mateo(2015) : Management Science, Operations Research and Project Management. University of Cantabria, Spain
- Ju" rg Kuster, Eugen Huber ,Robert Lippmann ,Alphons Schmid ,Emil Schneider ,Urs Witschi ,Roger Wu" st (2015): Project Management Handbook, Springer-Verlag Berlin Heidelberg 2015
- Kalkidan Abebe ketema(2017): An assessment of project management competency: the case of ethio telecom. MA thesis Addis Ababa University
- Kothari, C.R. (2004). Research Methodology: Methods and Techniques. (2nded). New Delhi: New Age International Limited Publishers.
- Kutner, M. H.; Nachtsheim, C. J.; Neter, J. (2004). Applied Linear Regression Models (4th ed.). McGraw-Hill Irwin
- M. Daud Alam and Uwe F. GRuhl (2016): Project-Management in Practice A Guideline and Toolbox for Successful Projects. Springer-Verlag GmbH Germany 2016
- Melanie McBride (2016):Project management basics . How to manage your project with checklists. ISBN-13 (pbk): 978-1-4842-2085-6
- Michael W. Newell (2005): Preparing for the Project Management Professional (PMP) Certification Exam, Printed in the United States of America.
- Mohamed A.EL.Reedy (2016):Project Management in the Oil and Gas Industry.Scrivener Publishing 100 Cummings Center, Suite 541J Beverly, MA 01915-6106
- Nebiyat belay (2017) :Examining the practice of Ethiopian airline in planning and scheduling of aircraft heavy maintenance projects. MA thesis Addis Ababa University.
- Norman R. Howes (2001):Modern Project Management Successfully Integrating Project Management Knowledge Areas and Processes.

- PMI . (2013). A Guide to the Pproject Management Body of Knowledge.
- PMI. (2000). The project management body of knowledge (PMBOK).Newton Square,PA. ISBN 1-880410-22-2.
- Ronald B. Cagle (2003): Blueprint for Project recovery A Project Management Guide The Complete Process for Getting Derailed Projects Back on Track
- Ronggui DING (2016): Key Project Management Based on Effective Project Thinking. China Electric Power Press and Springer-Verlag Berlin Heidelberg 2016. ISBN 978-3-662-47730-4
- Saunders, M., Lewis, P. & Thornhill, A. (2009). Research Methods for Business Students. (5th ed). England: Financial Times Prentice Hall.
- Sintayehu fiseha (2017): Assessed Practices and Challenges of Knowledge Transfer in offshore outsourced Telecom Project in the Case of Ethio Telecom. MA thesis Addis Ababa University.
- Somekh, B. & Lewin C. (2005). Research Methods in Social Sciences.Sage Publications. London: Thosusand Oaks
- Tefesehit Beyene (2017): Assessing the Implementation of Kaizen Project in a Public Inter-Governmental Context: The Case of the African Union Commission (AUC). MA thesis Addis Ababa University.
- Tigest Sileshi (2017): Assessment on Project Management Practices: a case study on Japanese Social Development Trust Fund Grant Project. MA thesis Addis Ababa University.
- WangRui & Guhongfei , 2016: Determinant Factors influencing the use of Balanced Scorecard in China. Master's thesis, Uppsala universitet
- Yamane, T. (1967). Statistics: An Introductory Analysis, Harperand Row

9. APPENDICES

APPENDIX – I Questionnaires

Addis Ababa University College of business and economics, School of commerce
department of project management.

Standardized questionnaires

Dear Respondents,

I would like to inform you that, this questionnaire has purely an academic purpose because I am conducting a research at Addis Ababa University College of business and economics for partial fulfillment of MA Degree In project management. This questionnaire is designed to collect data for a research paper entitled “**Assessment on implementation Practices of Telecom expansion project (TEP) in Ethio telecom**”. The questionnaire is intended to assess the implementation practice of TEP project in general and particularly implementation practices of the five project phases, challenges during implementation and their effect on the project performance. Thus your reply will have a real contribution to the accuracy and use-fullness of the study. Therefore, I kindly request your cooperation in filling up the questionnaire. All the data gathered will be kept confidential.

Instructions

1. Please, answer all questions.
2. In all cases where answer options are available, tick (✓) inside the given box.
3. For the open questions, write your answers in the space provided.

Section A. Respondent's profiles

Please indicate your appropriate choice among the options provided by circling the alphabet that best represents you.

1. Gender

A/ Male

B/ Female

2. Age

A. Below 21 B. 22-31 C. 32 – 42 D. 43 – 55 E. Above 55

3. Level of education

A. Certificate

B. Diploma

C. First Degree

D. Second degree

E. Above

5. Work experience in the organization

- A. 0- 5 years B. 6-10 years
C. 11-15 years D. Above 15 years

6. Your Experience on TEP implementation

- A. Less than 6 months' B. 6 month to 1 year
C. 1 year to 2 year D. more than 2 years

7. What is your job level?

- A. Staff B. Specialist C. Coordinator D. Supervisor
E. Expert F. Manager G. Director

Section B: TEP implementation practices

1. Kindly indicate how much you agree or disagree with the following statements concerning TEP implementation Practices in Ethio telecom

We Use the scale of (SD-Strongly Disagree D- Disagree N- Neutral A-Agree SA-Strongly Agree)

Number	TEP initiation phase practices. Please put tick (√) in your choice box	SD	D	N	A	SA
2.1	The objective of the project was Captured in one precise and complete sentence.					
2.2	High-level project schedule milestones were properly identified.					
2.3	Scope of work was identified at high level to avoid misunderstanding between the stakeholders.					
2.4	High-level project resources like budget and people were identified					
2.5	First draft of the stakeholder management tool was developed					
2.6	Complete project charter was prepared					
2.7	Project kick-off meeting was conducted at appropriate time					
2.8	High-level planning was prepared that serve as a road map for detail plan at the planning phase					
Number	TEP Planning phase practices. Please put tick (√) in your choice box	SD	D	N	A	SA
2.1	Scope statement of the project was prepared in detail.					
2.2	Project teams were recruited and assembled in a way that enables them to perform all activities as required in cohesive manner					

2.3	Work breakdown structure (WBS) was developed and helps to properly estimate the required material, human and financial resources.					
2.4	Network diagram that shows activity dependency and sequence was developed					
2.5	Proper activity cost and time estimation was made					
2.6	Overall budget and schedule of the project was determined					
2.7	Procurement plans of the project were established					
2.8	Possible risks were identified and quantified					
2.9	change control plan, communications plan, management plans were developed					
2.10	Overall project plan was approved by concerned body					
	TEP Execution phase practices. Please put tick (√) in your choice box	SD	D	N	A	SA
2.1	Team meetings are effective and held with a stated agenda					
2.2	The project schedule is updated regularly, incorporating unplanned work as needed					
2.3	Project execution metrics have been established properly					
2.4	Project risks are reviewed regularly with new risks identified and updated as needed.					
2.5	Project status updates are provided to key stakeholders regularly					
2.6	Problems impeding the team's ability to execute the project plan are efficiently escalated					
2.7	Quality assurance and scope verifications were properly made					
Number	TEP Monitoring and Control phase practices. Please put tick (√) in your choice box	SD	D	N	A	SA
2.1	Performance report was made for every activity as per the schedule					
2.2	Overall change control was made to provide appropriate response for any change					
2.3	Project scope control was made against the planned one for every scope statement					
2.4	Project quality control was made against the plan as per the client request in the plan					

2.5	Risk response control was made to confirm whether the risk response actions are going as planned					
2.6	Schedule and cost controls were made against the planned one to check if cost over runs and schedule delays are properly managed					
2.7	There was a Management by exception to the project plan					
	TEP Closing phase practices. Please put tick (√) in your choice box	SD	D	N	A	SA
2.1	Procurement audits and contract(s) close out was formally undertaken for all procurements made					
2.2	Product verification and acceptance test was made for every product delivered					
2.3	Lessons learned from the project were identified and properly documented for future use					
2.4	All project records were updated as per the changes made on any record					
2.5	Project teams were officially released to their operational work at the appropriate time					

- ❖ If you have any additional information related to implementation practices of telecom expansion project, please write on the space provided below.

Section C: TEP implementation Challenges

1. Dear respondents, in table below presumed IT related project implementation challenges are listed and you are kindly requested to rank the challenges as per the instruction. Please rank the implementation challenges based on your experience to express how much they influenced your project implementation towards its success.

Please put tick (✓) in your choice box

Scale indicators

LE	Least
LO	Lower
M	Moderate
H	Higher
EX	Extremely

Number	TEP implementation Challenges. Please put tick (✓) in your choice box	LE	LO	M	H	EX
2.1	Lack of formal methodology					
2.2	Poor estimates of resource requirements					
2.3	Lack of proper planning					
2.4	Lack of proper fund management					
2.5	Lack of proper coordination with stakeholders					
2.6	Lack of project “ownership” by team					
2.7	Team not hardworking and focused					
2.8	Lack of executive management support					
2.9	Incompetent staff					
2.10	Improper setting of milestones					
2.11	Project communication and integration management problem					
2.12	Government Policy challenges					

❖ If you have any additional information related to implementation challenges of telecom expansion project, please write on the space provided below.

	TEP performance. Please put tick (✓) in your choice box	SD	D	N	A	SA
2.1	The intended objectives of TEP were successfully achieved					
2.2	TEP was completed at its expected completion time					
2.3	TEP was completed within planned budget					
2.4	All the quality standards expected by ethiotelecom from the project were successfully delivered.					
2.5	TEP was completed in a way that can contribute to its designed goal					

- ❖ If you have any additional information related to performance of telecom expansion project, please write on the space provided below.

THANK YOU!

10. Appendix II

SPSS outputs

Demographic characteristics of respondents

Gender of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	31	35.2	35.2	35.2
Valid Male	57	64.8	64.8	100.0
Total	88	100.0	100.0	

Age of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
22-31	36	40.9	40.9	40.9
Valid 32-42	48	54.5	54.5	95.5
43-55	4	4.5	4.5	100.0
Total	88	100.0	100.0	

Educational level

	Frequency	Percent	Valid Percent	Cumulative Percent
Certificate	1	1.1	1.1	1.1
Diploma	2	2.3	2.3	3.4
Valid First degree	58	65.9	65.9	69.3
Master's degree	27	30.7	30.7	100.0
Total	88	100.0	100.0	

Implementation of Project phases

Initiation phase

Statement	N	S.Disagree	Disagree	Neutral	Agree	S.Agree	Mean	SD
The objective of the project was Captured in one precise and complete sentence.	88	6.8%	8.0%	8.0%	42.0%	35.2%	2.91	1.17
High-level project schedule milestones were properly identified.	88	10.2%	22.7%	19.3%	19.3%	28.4%	2.33	1.37
Scope of work was identified at high level to avoid misunderstanding between the stakeholders.	88	6.8%	15.9%	12.5%	43.2%	21.6%	2.57	1.19
High-level project resources like budget and people were identified	88	4.5%	4.5%	15.9%	43.2%	31.8%	2.93	1.03
First draft of the stakeholder management tool was developed	88	10.2%	6.8%	21.6%	20.5%	40.9%	2.75	1.33
Complete project charter was prepared	88	4.5%	10.2%	19.3%	38.6%	27.3%	2.74	1.10
Project kick-off meeting was conducted at appropriate time	88	9.1%	2.3%	13.6%	50.0%	25.0%	2.80	1.12
High-level planning was prepared that serve as a road map for detail plan at the planning phase	88	10.9%	4.5%	19.3%	27.3%	38.6%	2.80	1.29

The objective of the project was Captured in one precise and complete sentence.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	6	6.8	6.8	6.8
Disagree	7	8.0	8.0	14.8
Neutral	7	8.0	8.0	22.7
Agree	37	42.0	42.0	64.8
Strongly Agree	31	35.2	35.2	100.0
Total	88	100.0	100.0	

High-level project schedule milestones were properly and clearly identified

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	9	10.2	10.2	10.2
Disagree	20	22.7	22.7	33.0
Neutral	17	19.3	19.3	52.3
Agree	17	19.3	19.3	71.6
Strongly Agree	25	28.4	28.4	100.0
Total	88	100.0	100.0	

Descriptive Statistics

	N	Mean	Std. Deviation
The objective of the project was Captured in one precise and complete sentence.	88	2.9091	1.17088
High-level project schedule milestones were properly and clearly identified	88	2.3295	1.37064
Scope of work was identified at high level that supports activity and resource estimation at planning phase.	88	2.5682	1.19188
High-level project resources like budget and people were identified	88	2.9318	1.03719
First draft of the stakeholder management tool was developed	88	2.7500	1.33261
Complete project charter was prepared and delivered to intended users	88	2.7386	1.10894
Project kick-off meeting was conducted at appropriate time and convenient place	88	2.7955	1.12607
High-level planning was prepared that serve as a road map for detail plan at the planning phase	88	2.7955	1.28796
Valid N (listwise)	88		

Planning phase

Statement	N	S.Disagree	Disagree	Neutral	Agree	S.Agree	Mean	SD
Scope statement of the project was prepared in detail.	88	4.5%	17.0%	17.0%	40.9%	20.5%	2.57	1.13
Project teams were recruited and assembled in a way that enables them to perform all activities as required in cohesive manner	88	2.3%	5.7%	14.8%	69.3%	8.0%	2.75	0.78
Work breakdown structure (WBS) was developed and helps to properly estimate the required material, human and financial resources.	88	3.4%	5.7%	15.9%	48.9%	26.1%	2.89	0.98
Network diagram that shows activity dependency and sequence was developed	88	1.1%	12.5%	29.5%	34.1%	22.7%	2.65	1.00
Proper activity cost and time estimation was made	88	2.3%	22.7%	21.6%	34.1%	19.3%	2.45	1.11
Overall budget and schedule of the project was determined	88	3.4%	6.8%	21.6%	33.0%	35.2%	2.89	1.07
Procurement plans of the project were established	88	0%	4.5%	15.9%	56.8%	22.7%	2.98	0.76
Possible risks were identified and quantified	88	3.4%	20.5%	23.9%	43.2%	9.1%	2.34	1.01
change control plan, communications plan, management plans were developed	88	2.3%	25.0%	10.2%	39.8%	22.7%	2.56	1.16
Overall project plan was approved by concerned body	88	4.5%	2.3%	14.8%	51.1%	27.3%	2.94	0.96

Scope statement of the project was prepared in detail to properly estimate activities and resource required

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	4	4.5	4.5	4.5
Disagree	15	17.0	17.0	21.6
Valid Neutral	15	17.0	17.0	38.6
Agree	36	40.9	40.9	79.5
Strongly Agree	18	20.5	20.5	100.0

Total	88	100.0	100.0
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Project team was recruited and assembled in a way that enables them to perform all activities as required in cohesive manner

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	2	2.3	2.3	2.3
Disagree	5	5.7	5.7	8.0
Neutral	13	14.8	14.8	22.7
Agree	61	69.3	69.3	92.0
Strongly Agree	7	8.0	8.0	100.0
Total	88	100.0	100.0	

Descriptive Statistics

	N	Mean	Std. Deviation
Scope statement of the project was prepared in detail to properly estimate activities and resource required	88	2.5568	1.13318
Project team was recruited and assembled in a way that enables them to perform all activities as required in cohesive manner	88	2.7500	.77682
Work breakdown structure (WBS) was developed and helps to properly estimate the required material, human and financial resources.	88	2.8864	.97594
Network diagram that shows activity dependency and sequence was developed	88	2.6477	1.00619
Proper activity cost and time estimation was made and critical path was developed	88	2.4545	1.11323
Overall budget and schedule of the project was determined	88	2.8977	1.07254
Procurement and quality plans of the project were established	88	2.9773	.75775
Possible risks were identified, quantified and risk response (mitigation) method was developed	88	2.3409	1.01581
change control plan, communications plan, management plans were developed	88	2.5568	1.16321
Overall project plan was approved by concerned body	88	2.9432	.96321
Valid N (listwise)	88		

Execution

Statement	N	S.Disagree	Disagree	Neutral	Agree	S.Agree	Mean	SD
Team meetings are effective and held with a stated agenda	88	8%	13.6%	15.9%	47.7%	14.8%	2.48	1.14
The project schedule is updated regularly, incorporating unplanned work as needed	88	11.4%	20.5%	22.7%	40.9%	4.5	2.07	1.12
Project execution metrics have been established properly	88	13.6%	20.5%	6.8%	50.0%	9.1%	2.20	1.26
Project risks are reviewed regularly with new risks identified and updated as needed.	88	15.9%	11.4%	43.2%	20.5%	9.1%	1.95	1.15
Project status updates are provided to key stakeholders regularly	88	4.5%	13.6%	6.8%	65.9%	9.1%	2.61	.99
Problems impeding the team's ability to execute the project plan are efficiently escalated	88	0%	5.7%	53.4%	25.0%	15.9%	2.51	.83
Quality assurance and scope verifications were properly made	88	6.8%	19.3%	13.6%	33.0%	27.3%	2.55	1.27

Monitoring

Statement	N	S.Disagree	Disagree	Neutral	Agree	S.Agree	Mean	SD
Performance report was made for every activity as per the schedule	88	4.5%	6.8%	20.5%	68.2%	0%	2.52	.82
Overall change control was made to provide appropriate response for any change	88	2.3%	4.5%	15.9%	72.5%	4.5%	2.72	.72
Project scope control was made against the planned one for every scope statement	88	11.4%	13.6%	20.5%	38.6%	15.9%	2.34	1.23
Project quality control was made against the plan as per the client request in the plan	88	2.3%	4.5%	17.0%	67%	9.1%	2.76	.77
Risk response control was made to confirm whether the risk response actions are going as planned	88	8%	17%	27.3%	29.5%	18.2%	2.32	1.19
Schedule and cost controls were made against the planned one to check if cost over runs and schedule delays are properly managed	88	6.8%	14.8%	20.5%	39.8%	18.2%	2.48	1.15
There was a Management by exception to the project plan	88	9.1%	11.4%	28.4%	27.3%	23.9%	2.45	1.23

Closing

Statement	N	S.Disagree	Disagree	Neutral	Agree	S.Agree	Mean	SD
Procurement audits and contract(s) close out was formally undertaken for all procurements made	88	5.7%	13.6%	14.8%	53.4%	12.5%	2.53	1.06
Product verification and acceptance test was made for every product delivered	88	0%	2.3%	8.0%	59.1%	30.7%	3.18	.67
Lessons learned from the project were identified and properly documented for future use	88	5.7%	33.0%	19.3%	18.2%	23.9%	2.21	1.29
All project records were updated as per the changes made on any record	88	3.4%	4.5%	10.2%	51.1%	30.7%	3.01	.95
Project teams were officially released to their operational work at the appropriate time	88	5.7%	6.8%	10.2%	48.9%	28.4%	2.87	1.08

Challenges

Statement	N	Least	Lower	Moderate	High	Extreme	Mean	SD
Lack of formal methodology	88	26.1%	21.6%	28.4%	10.2%	13.6%	1.63	1.34
Poor estimates of resource requirements	88	8.0%	38.6%	4.5%	25.0%	23.9%	2.18	1.37
Lack of proper planning	88	31.8%	13.6%	15.9%	19.3%	19.3%	1.80	1.53
Lack of proper fund management	88	12.5%	11.45	21.6%	38.6%	15.9%	2.34	1.24
Lack of proper coordination with stakeholders	88	6.8%	17.0%	15.9%	40.9%	19.3%	2.48	1.18
Lack of project “ownership” by team	88	17.0%	40.9%	31.8%	10.2%	0%	1.35	.88
Team not hardworking and focused	88	22.7%	13.6%	23.9%	15.9%	23.9%	2.04	1.47
Lack of executive management support	88	34.1%	12.5%	15.9%	37.5%	0%	1.56	1.30
Incompetent staff	88	23.9%	18.2%	15.9	34.1%	8.0%	1.84	1.33
Improper setting of milestones	88	5.7%	36.4%	18.2%	39.8%	0%	1.92	.99
Project communication and integration management problem	88	17.0%	18.2%	13.6%	22.7%	28.7%	2.27	1.47
Government Policy challenges	88	4.5%	13.6%	28.4%	30.7%	22.7%	2.53	1.12

Lack of formal methodology

	Frequency	Percent	Valid Percent	Cumulative Percent
Least	23	26.1	26.1	26.1
Lower	19	21.6	21.6	47.7
Moderate	25	28.4	28.4	76.1
Higher	9	10.2	10.2	86.4
Extremely	12	13.6	13.6	100.0
Total	88	100.0	100.0	

Poor estimates of resource requirements

	Frequency	Percent	Valid Percent	Cumulative Percent
Least	7	8.0	8.0	8.0
Lower	34	38.6	38.6	46.6
Moderate	4	4.5	4.5	51.1
Higher	22	25.0	25.0	76.1
Extremely	21	23.9	23.9	100.0
Total	88	100.0	100.0	

Performance

Statement	N	S.Disagree	Disagree	Neutral	Agree	S.Agree	Mean	SD
The intended objectives of TEP were successfully achieved	88	0%	5.7%	22.7%	60.2%	11.4%	2.77	.72
TEP was completed at its expected completion time	88	1.1%	36.4%	39.8%	22.7%	0%	1.84	.78
TEP was completed within planned budget	88	2.3%	42.0%	36.4%	19.3%	0%	1.72	.79
All the quality standards expected by ethiotelecom from the project were successfully delivered.	88	0%	4.5%	17.0%	65.9%	12.5%	2.86	.68
TEP was completed in a way that can contribute to its designed goal	88	0%	3.4%	14.8%	61.4%	20.5%	2.98	.70

The intended objectives of TEP were successfully achieved

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	5	5.7	5.7	5.7

Neutral	20	22.7	22.7	28.4
Agree	53	60.2	60.2	88.6
Strongly Agree	10	11.4	11.4	100.0
Total	88	100.0	100.0	

TEP was completed at its expected completion time

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	1	1.1	1.1	1.1
Disagree	32	36.4	36.4	37.5
Valid Neutral	35	39.8	39.8	77.3
Agree	20	22.7	22.7	100.0
Total	88	100.0	100.0	

Descriptive Statistics

	N	Mean	Std. Deviation
The intended objectives of TEP were successfully achieved	88	2.7727	.72282
TEP was completed at its expected completion time	88	1.8409	.78618
TEP was completed within planned budget	88	1.7273	.79838
All the quality standards expected by ethiotelecom from the project were successfully delivered.	88	2.8636	.68114
TEP was completed in a way that can contribute to its designed goal	88	2.9886	.70294
Valid N (listwise)	88		

Correlations

		Correlations						
		initiation	Planning	Execution	monitoring	closing	challenges	performance
Initiation	Pearson Correlation	1	.281**	.337**	.607**	.547**	-.619**	.333**
	Sig. (2-tailed)		.008	.001	.000	.000	.000	.002
	N	88	88	88	88	88	88	88
Planning	Pearson Correlation	.281**	1	-.043	.385**	.566**	-.362**	.264*
	Sig. (2-tailed)	.008		.693	.000	.000	.001	.013
	N	88	88		88	88	88	88
Execution	Pearson Correlation	.337**	-.043	1	.551**	.547**	-.575**	.246*
	Sig. (2-tailed)	.001	.693		.000	.000	.000	.021
	N	88	88	88	88	88	88	88
Monitoring	Pearson Correlation	.607**	.385**	.551**	1	.772**	-.812**	.454**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	88	88	88	88	88	88	88
Closing	Pearson Correlation	.547**	.566**	.547**	.772**	1	-.726**	.450**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	88	88	88	88	88	88	88
Challenges	Pearson Correlation	-.619**	-.362**	-.575**	-.812**	-.726**	1	-.304**
	Sig. (2-tailed)	.000	.001	.000	.000	.000		.004
	N	88	88	88	88	88	88	88
Performance	Pearson Correlation	.333**	.264*	.246*	.454**	.450**	-.304**	1
	Sig. (2-tailed)	.002	.013	.021	.000	.000	.004	
	N	88	88	88	88	88	88	88

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

* . Correlation is significant at the 0.05 level (2-tailed).

Regression results

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.924	.337		5.706	.000		
Initiation	.783	.094	.957	8.288	.000	.357	2.800
Planning	.077	.073	.090	1.065	.290	.670	1.493
Execution	.993	.121	.900	8.204	.000	.395	2.530
Monitoring and Control	.506	.126	.389	4.026	.000	.509	1.965
Closing	.218	.086	.235	2.546	.013	.560	1.787
Challenges	-.266	.080	-.287	-3.318	.001	.637	1.569

a. Dependent Variable: Performance

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	18.484	6	3.081	21.526	.000 ^b
Residual	11.592	81	.143		
Total	30.076	87			

a. Dependent Variable: Performance

b. Predictors: (Constant), Challenges, Initiation, Planning, Closing, Monitoring and Control, Execution

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.784 ^a	.615	.586	.378	2.421

a. Predictors: (Constant), Challenges, Initiation, Planning, Closing, Monitoring and Control, Execution

b. Dependent Variable: Performance

