ASSESSMENT OF PROJECT MANAGEMENT PRACTICE IN FIXED BROADBAND NETWORK UPGRADE PROJECTS. A CASE STUDY OF ETHIO-TELECOM, SOUTH WEST ADDIS ABABA ZONE

By

Meaza Gebretsadik

A Project Work Submitted to Addis Ababa University College of Business and Economics School of Commerce in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Project Management (MAPM)

Advisor: Worku Mekonnen (PhD)

Addis Ababa, Ethiopia

June, 2024

ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE
DEPARTMENT OF PROJECT MANAGEMENT

ASSESSMENT OF PROJECT MANAGEMENT PRACTICE IN FIXED BROADBAND NETWORK UPGRADE PROJECTS. A CASE STUDY OF ETHIO-TELECOM, SOUTH WEST ADDIS ABABA ZONE

By: Meaza Gebretsadik

A Project Work Submitted to Addis Ababa University College of Business and Economics School of Commerce in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Project Management (MAPM)

Advisor: Worku Mekonnen (PhD)

Addis Ababa, Ethiopia

June, 2024

DECLARATION

I hereby declare that this project is my original work. I have carried out the present project work independently with the guidance and support of the research advisor Worku Mekonnen. (PhD) and this project work has not been submitted partially or in full by any other person for an award of degree in any other university or institution.

Meaza Gebretsadik

Signature: _____

Date:June ,2024

CERTIFICATION

This is to certify that Meaza Gebretsadik has carried out her research work on the topic entitled "ASSESSMENT OF PROJECT MANAGEMENT PRACTICE IN FIXED BROADBAND NETWORK UPGRADE PROJECTS.A CASE STUDY OF ETHIO-TELECOM, SOUTH WEST ADDIS ABABA ZONE." The study is an original work and is suitable for the submission for reward of MA Degree in Project Management.

Advisor:Worku Mekonnen (PhD)

Signature: _____

Date:_____

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

ASSESSMENT OF PROJECT MANAGEMENT PRACTICE IN FIXED BROADBAND NETWORK UPGRADE PROJECTS. A CASE STUDY OF ETHIO-TELECOM, SOUTH WEST ADDIS ABABA ZONE

By: Meaza Gebretsadik

Approved By Board of Examiners

Worku Mekonnen (PHD) Signature _____ Date _____
Advisor

_____ Signature _____ Date _____
External Examiner

Fesseha Afework (Asst. Prof.) Signature _____ Date _____
Internal Examiner

Acknowledgement

First of all, I am very grateful to Almighty GOD. Next I express my sincere appreciation to Dr. Worku Mekonnen, who served as the advisor for my project work, for his insightful feedback, constructive guidance, and unwavering assistance throughout the course of this research. The feedback and critique provided by him have consistently motivated me to strive for excellence. I would also like to express my appreciation to the organizations and all the individuals who contributed directly or indirectly to this study and provided the necessary materials and support for realization of this study. My last but not least acknowledgment goes to my parents for their unwavering support. I also gratefully acknowledge the contributions of all those individuals who had contributed in one way or the other in the realization of this paper.

Abstract

The proficient execution of project management practices holds significant importance in the enhancement of fixed broadband network infrastructure projects within the constantly evolving telecommunication sector.This investigation delves into examining the project management practices implemented by Ethio Telecom in the context of the fixed broadband network upgrading project initiative within the South West Addis Ababa Zone (SWAAZ). The study employed a Mixed research methodology that encompassed a combination of qualitative and quantitative approaches, thereby embracing a descriptive research framework. The primary data gathering process used the utilization of both semi structured interviews and questionnaires as data collection methods and as secondary data Ethio-telecom's project report and annual reports were reviewed.The study focused on 197 employees across various departments at Ethio telecom, including the Fixed Network project management department (PMO) and the Fixed Network department. The researcher used a stratified sampling technique, randomly selecting samples from each department to proportionally represent the total population. Using Taro Yamane's formula, the total sample size was determined to be 132 employees. In order to analyze the data, the researcher used the statistical software package SPSS version 27 (SPSS V27).Both descriptive statistics, including percentages and mean values, were utilized to provide a comprehensive examination of the findings.The findings highlight the effectiveness of management practices, particularly in areas of project initiation, planning, and closure. These processes are consistently rated highly, suggesting a strong foundation for project execution within the SWAAZ initiative. However, the research also identifies the need for improvement in project execution, monitoring & control processes. While these areas are rated moderately, there's room for optimization to ensure consistent success in project delivery.Thus, the study recommends that the organization should give more emphasis for integrating a comprehensive risk management plan into each project,implementing clear communication plans for all stakeholders, utilizing effective resource allocation strategies throughout the project life cycle, developing processes to address and resolve conflicts productively and document and share lessons learned from each project to enable organizational improvement

***Key words**: Fixed Broadband , Project management, Ethio-telecom*

Table of Contents

List of tables

List of Figures

Acronyms

PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PRINCE2	Project In Controlled Environments
SPSS	Statistical Package for Social Sciences
PMO	Project Management Office
WBS	Work Breakdown Structure
IT	Information Technology
ADSL	Asymmetric Digital Subscriber Line
LTE	Long Term Evolution
MSAG	Multi Service Access Gateway
MSAN	Multi Service Access Node
OLT	Optical Line Terminal
SWAAZ	South West Addis Ababa Zone
TEP	Telecom Expansion Program
TEXA	Telecom Excellence Academy
ODN	Optical Distribution Network

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

A project consists of a series of interconnected activities conducted to accomplish a particular objective within a specified period. Project has a clear purpose and desired outcome, with a defined start and end, delivering a unique, new, modified, or specific product or service that provides value to stakeholders (PMI, 2017).

Projects goes through life cycle which comprises of five distinct phases namely Project Initiation phase, Project Planning phase, Project Execution phase, the Monitoring and Controlling phase, and finally, the Project Closure phase (Schwalbe, 2015).

There are different types of projects implemented in Ethio Telecom, such as network infrastructure development. This includes expanding mobile network coverage in rural areas, upgrading existing infrastructure to newer technologies like 4G and 5G, and deploying fiber optic cables for faster internet connectivity. For the successful execution of projects, the implementation of a well-defined project management methodology is required.

Project management is the practice of applying knowledge, skills, tools, and techniques to guide a project from initiation to completion. It involves planning, organizing, executing, monitoring, and closing the project to achieve its specific goals within defined constraints of time, budget, and resources (PMI, 2017).

Project management skills extend beyond complex technical projects. They are equally valuable for tackling problems and navigating crises across all management disciplines (Kuster et al., 2015).

By tailoring project management practices to each project's needs and then combining them effectively, organizations achieve efficient and successful project execution.

Projects with well-implemented project management practices tend to have a significantly higher chance of success (Fraz, 2016).

Overall, project management is an investment that pays off. It provides a structured approach, optimizes resources, mitigates risks, fosters collaboration, and ultimately increases the chances of project success.

The importance of proficient implementation of project management practices is necessary in the context of upgrading fixed broadband network infrastructure projects since telecommunication environment is a very dynamic one. These practices aid in precise

identification of project needs, establishment of attainable objectives, efficient utilization of resources, reduction of delays and budget overruns., management of risks, and proper stakeholder communication. Adhering to recognized project management practices enables organizations to improve project effectiveness, efficiency, and overall project accomplishment rates (Zid et al., 2020).

1.2. Background of the Organization

This study focuses on the project management practices employed by Ethio Telecom for the fixed broadband network upgrade project in the South West Addis Ababa Zone (SWAAZ).

Ethio Telecom is 129 years old company. It has undergone significant organizational changes, constantly adapting to meet the country's evolving needs. Initially operating as a government-owned monopoly, Ethio Telecom provided all internet and telephone services in Ethiopia. However, this landscape shifted in October 2022 after the entry of competitor Safaricom, marking a new chapter for the company. The Goods and Services provided include voice(fixed and mobile) services, data(3G,4G,LTE advanced,5G),.Fixed Broadband internet, VAS, VPN, DNS, web hosting, Roaming, Tele birr service and providing products like phones, modems, dongles, routers and various devices to the customer.

Currently, among the 774 operators in the world, Ethio telecom ranks 2nd in Africa in terms of mobile customer number and 21st in the world. The number of customers using the services reached 72 million. In terms of service type, the number of mobile voice customers is 69.5 million, fixed broadband is 618.3 thousand, landline customers are 853.6 thousand, and data and internet users are 33.9 million. The tele density rate is 66.8%. Different projects have been executed to enhance Quality of Services, Network Coverage & Capacity, as well as system capacity. New Mobile Sites development, Mobile Network capacity upgrades and optimization have been done on 3,251 mobile stations resulting 9.5 million additional mobile network capacity to serve additional customers. The wireless Network Population Coverage in 2G has reached 99.19%, in UMTS/3G, 98.4%, in 4G/LTE 33% and 5G capacity that accommodates 440 thousand customers has been created. Furthermore, Fixed Broadband service with a capacity to serve 228 thousand additional customers has been built in the budget year (Ethio telecom, 2015).

The research focuses on how project management practices are used to initiate, plan, execute, monitor, control, and close fixed broadband network infrastructure upgrade projects.

1.3. Statement of the Problem

Telecommunication industry is one of the dynamic industries in the world. Products and services in this industry are changing very quickly nowadays. As the business of the telecommunications company develops, internal processes and technologies are at the center of attention. The company's success in a dynamically developing external environment is determined by the company's ability to adapt to rapidly changing market needs. Agile Project management as an approach allowing to form a business model that is the most effectively functioning in the modern telecommunications industry is analyzed (Glukhov et al., 2018).

Project management focuses on the creation of well-defined plans. These plans serve as road maps, outlining the scope, timeline, and budget for achieving project objectives. However, as a result of the dynamic characteristics of projects, they frequently experience a deviation from the original plans. Recognizing and effectively managing these deviations is crucial for ensuring project success (Van Der Merwe, 2002).

Deviations emanate from a multitude of factors. Unanticipated occurrences, like constraints on resources or alterations in client demands, have the potential to obstruct the predetermined trajectory of operations New information may require adjustments to the project scope, while external pressures might impact the project timeline. The key lies in acknowledging the inevitability of deviations and fostering a project management approach that prioritizes adaptability (Carstens et.al, 2016)

Organizations are increasingly embracing a project-oriented strategy that focuses on the development and delivery of new products or the implementation of change (Russell &Archibald, 2004).

There are different researches conducted on project management practices on telecommunication industry projects among them some are explained below:

Haftom (2019) Examines the project management practices employed within the fundamental stages of the project life cycles in telecom expansion project (TEP), alongside the obstacles encountered and their impact on project outcomes.

Anbesse (2017) Assess that during project implementation, monitoring, and evaluation, several challenges can arise that impact budget, schedule, and project quality standards set at the baseline. These challenges can be internal, stemming from project team and management commitment, or external, arising from vendors, weather conditions, geographical topography, regional government bureaucracy, dependencies on other organizations, and local contractors.

Metaferia (2021) Assess the current project planning practices, identify which planning tools are used and identify common challenging areas of project planning activities.

The research focuses on the gaps that are not fully addressed in the previous researches that are conducted on Ethio-telecom. Prior researches were mainly conducted in the field of Telecom expansion projects (TEP) mainly including mobile and wireless network expansion, expansion and improvement of the backbone transmission network capacity.

The researches were primarily focused on specific aspects of project management practices, rather than assessing the each process groups comprehensively in a single study. These studies have typically delved into individual areas such as Stakeholder management, Risk management, planning, and Monitoring and evaluation. However, it is important to recognize that difficulties in one domain can have far-reaching implications across interconnected project areas. Additionally, there has been a lack of comprehensive study that is based on upgrading fixed broadband network infrastructure projects that are initiated in Ethio-telecom's south west Addis Ababa zones. Therefore, a holistic understanding of all project management practices is essential for the successful execution of projects. By analyzing the findings, the research aims to identify areas for improvement in Ethio-telecom future project management endeavors which will allow the company to harness the full potential of effective project management practices and ensure successful execution of future projects.

Upgrading fixed broadband networks is a complex task that requires effective project management practices.

This study investigates the current trend of project management practices that are implemented in each processes groups. The goal is to gain a clear picture of how these practices are currently carried out. This includes examining the initiating process, planning processes, analyzing the execution of those plans, asses how the monitoring and controlling is conducted and asses the how the projects are closed.

1.4. Research Questions

- How is project initiation being practiced in Ethio-telecom fixed broadband network infrastructure upgrading projects?
- How is project planning being practiced in Ethio-telecom fixed broadband network infrastructure upgrading projects?
- How is project execution being practiced in Ethio-telecom fixed broadband network infrastructure upgrading projects?

- How is project monitoring and controlling being practiced in Ethio-telecom fixed broadband network infrastructure upgrading projects?
- How is project closure being practiced in Ethio-telecom fixed broadband network infrastructure upgrading projects?

1.5. Research Objective

1.5.1. General Objective

The General objective of the research is to assess the level project management practices in each of the five project management process groups of fixed broadband network infrastructure upgrade projects in Ethio-telecom (SWAAZ).

1.5.2. Specific Objective

- To assess the project initiation practice in Ethio-telecom fixed broadband network infrastructure upgrading projects.
- To examine the project planning practice in Ethio-telecom fixed broadband network infrastructure upgrading projects.
- To evaluate the project execution practice in Ethio-telecom fixed broadband network infrastructure upgrading projects.
- To determine the project monitoring and controlling practice in Ethio-telecom fixed broadband network infrastructure upgrading projects.
- To review the project closing practice in Ethio-telecom fixed broadband network infrastructure upgrading projects.

1.6. Scope of the Study

This research is focused on the project management practices associated with upgrading fixed wired broadband networks using fiber optic technology (including traditional and Quick ODN deployment methods), MSAG to MSAN upgrades, and OLT installation deployed from 2021 onwards. Ethio Telecom has six zonal offices in Addis Ababa. However, the study is specifically focused on the South West Addis Ababa zone (SWAAZ), which includes areas covered by telecom network upgrade projects. These projects encompass both completed and ongoing network upgrade projects for various areas, commercial buildings, and condominiums. In addition, the study did not participate all the staff of the organization.

Information on project management is collected from personnel that are directly involved in projects. The data collection is restricted to the primary sources which are through questionnaire and interview. The literature review is limited to the materials such as; existing written materials, research articles and from websites concerning the title are incorporated.
The research aim to provide valuable insights into the project management practices is only through the generally accepted five process groups.

1.7. Significance of Study

This study has the potential to improve the efficiency and success of future network upgrades, ultimately benefiting customers, stakeholders, and the project management field itself. It also can highlight how effective project management translates to benefits for customers. This could include shorter downtime, improved communication about upgrade schedules, and a smoother overall transition to the upgraded network. It also indicates challenges and opportunities presented by fixed broadband network upgrade project implementation.

1.8. Operational Definition of Terms

- **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 (Schwalbe, 2015).
- **Project success-** is defined by completion of projects within the allocated time, within the budgeted cost, at the proper performance or specification level, with acceptance by the customer/user, with minimum or mutually agreed upon scope changes, without disturbing the main workflow of the organization, and without changing the corporate culture (Kerzner, 2009).
- **Project management practice**- is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. These practices apply to all project phases, from initiation and planning through execution, monitoring and control, and closure (PMI, 2017).
- **Initiating**- Tasks and activities that conceptualize and/or authorize the project or phase. It can include activities like defining project objectives, scope, purpose and deliverable to be produced (PMI, 2017).

- **Planning**- the process of outlining the steps and resources required to achieve our project goals (PMI, 2017).
- **Execution**- 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) (PMI, 2017).
- **Monitoring and Contro**l- is a monitoring and measuring progress regularly to identify variances within the plan, so corrective actions can be taken if needed (PMI, 2017).
- **Closing**- finalize all activities/tasks and above processes to close the project and involves handing over the deliverable to your customer, passing the documentation to the business, canceling supplier contracts, releasing staff and equipment, and informing stakeholders of the closure of the project (PMI, 2017).

1.9. Organization of the Paper

This study is composed of five chapters. The first chapter is an introductory chapter which includes background of the study that gives insight on project management practices and base for the study. The second chapter is all about review of related literature. It contains theoretical and empirical parts that are used as frame work and supportive information for the study. Research methodology which is the third chapter emphasis on which data source are used, what technique of sampling are the most appropriate and how the gathered data are presented and analyzed. Chapter four contains the major parts of this research paper which are data presentation and data analysis. Chapter five is the last and the most important chapter. All findings of the study are included followed by conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter will provide an overview of the theoretical framework underpinning project management and the implementation of project management practices. In addition to that it will introduce both theoretically and empirically focused literature. This is followed by a systematic review covering the use of Project Management Practices in projects in Ethiopia and beyond to identify a gap in the knowledge of the use of Project Management practices.

2.2. Theoretical Review

2.2.1. What is Project?

A project refers to a temporary initiative that is carried out to achieve a specific goal, which could be the development of a new product, service, or outcome. This temporary nature implies that every project has a defined start and end point, distinguishing it from ongoing operations or processes within an organization. Projects are the driving force behind innovation and positive change which produces value that benefits customers, society at large, and the organizations (PMI, 2021).

Projects are complex, multidisciplinary endeavors with shared goals encompassing scope, time, and cost. Projects are identified by their significance, specific outcomes, a defined life cycle, complex interconnections, some or all distinctive components and restricted resources. Projects frequently carried out at a gradual pace, gain momentum by utilizing substantial resources, and subsequently decrease the speed as it approaches its completion (Meredith et al., 2021).

Projects could vary in size and could involve the participation of one person or many individuals. The time-frame of projects can range from a single day to numerous years. Projects exhibit a diverse range of scopes and duration. The following attributes help to further define a project:

- Every project has a unique purpose that sets it apart from ongoing business operations or maintenance activities by achieving a specific outcome or delivering a particular product.

- A project is temporary- Unlike ongoing business functions; projects have a defined start and end date. This temporary nature implies a clear focus on achieving specific goals within a defined time-frame.
- A project is developed using progressive elaboration or in an iterative fashion- refers to the continual refinement of project plans as information becomes available. Projects may follow an iterative approach, where cycles of planning, execution, and evaluation lead to a final product or outcome.
- A project requires resources-require the allocation of resources like people, materials, and budget to achieve their goals.
- Project should have a primary customer or sponsor which provides financial or other forms of support and has a vested interest in the project's success.
- A project involves uncertainty like unforeseen challenges, changing requirements, or external factors can all impact project execution (Schwalbe, 2015).

2.2.2. What is Project Management?

Project management is about using knowledge, skills, tools, experience, and the right resources to guide a project from start to finish making sure it delivers what supposed to. Project teams can achieve the outcomes using a broad range of approaches like predictive, hybrid, and adaptive (PMI, 2021). It provides people with a powerful set of tools but it isn't just a tool it is a way of getting things done it provides frameworks and best practices to effectively utilize resources and improve planning, execution, and overall management skills within the project team. It achieves results through collaboration, bringing together different people to work as a team (Larson, 2011).

Project management involves guiding the team to define the project's goals, scope, and timeline, steering the project through design and development, ensuring clear communication, making key decisions, and adapting the plan as needed and leading the team to successful completion, providing strong leadership, and navigating any unexpected challenges (Berkun, 2005). By implementing these guiding actions, project management can deliver a range of benefits like better utilization of resources, shorter development times, customer satisfaction, reduced costs, competitive advantage, enhance quality of service, inter departmental cooperation that builds synergies across the organization, and a better focus on results , and create good customer relations (Morris, 2007).on the other hand project management has been defined from management functions perspective by (Kerzner, 2009). (Kerzner, 2009)

stated that, project management is the planning, organizing, directing, and controlling of company resources for a relatively short term objective that has been established to complete specific goals and objectives.

The purpose of project management is to predict, plan, organize, and control activities and resources so that projects are completed successfully in spite of all the difficulties and risks. This process should start before any resource is committed, and must continue until all work is finished (Triant and Dennis, 2008).

2.2.3. Project Management Process Groups

PMI (2021) states that Project Management Process Groups are stages that a project goes through from start to finish achieving specific goals and meeting the needs of the organization, and stakeholders. In a process-based approach, the output of one process generally becomes an input to another process or is a deliverable of the project or project phase. It is grouped into the following five Project Management Process Groups:

1. Initiating Process Group - is the first stage in the PMI Project Management Process Groups.in this stage processes performed to define and get approval for either a completely new project or a new phase of an existing project. The important aspect of this stage is obtaining authorization to start the project or phase. This typically involves securing approval from stakeholders, sponsors, or relevant governing bodies. In this stage conducting a feasibility study is a key activity (PMI, 2021).

In this process group, a particular need is identified and transformed into a structured issue to be solved. In this process group, the project's mission and purpose are defined, and the best strategies are identified and selected (Vargas, 2008).

Williams (2008) indicates that initiating phase is crucial for project success. It's like laying the groundwork for a building. During this phase, you collaborate with the client to establish both formal and informal agreements outlining what the project will deliver, the general approach, and the expected completion time frame.

The process of project initiation is quite simple it requires gathering information about:

- why the project is happening
- What needs to be delivered and how this will be done
- Who will be involved
- The timings to which the project will be delivered
- Make sure to get input from all the key stakeholders

- Summarize the why, what, how, who, and when of the project into a Project
- Review the Project Initiation Document with the project board and key stakeholders to get their agreement.
- Hold a kickoff meeting to herald the start of the project, share the success criteria, and plan going forward with the project team, board members, and key stakeholders.

Here are some essential tools used for initiation:

Project Commencement Record (PID) - outlines the essence, methodology, timing, and rationale of the project. It signifies the consensus among all stakeholders on the project's purpose and, significantly, the reasons for initiating the project. While certain aspects will naturally evolve throughout the project life cycle (particularly the specifics of the project's execution, the project's schedule, and the available resources), the core principles of the project's essence and the rationale for its organizational impact should remain relatively constant.

Kickoff Meeting - It is fundamentally a gathering at which you assemble the crucial participants in the venture to formally initiate the project. Generally, this will require at least a couple of hours, but we should assess a suitable time frame based on the intricacy of our project. The vital attendees of the Kickoff Meeting are the project team and the concerned stakeholders. The Kickoff Meeting is likely the initial occasion that everyone engaged will have assembled for the project, so it presents a wonderful opportunity to get everyone excited. The attendees may request the sponsor to deliver a brief speech regarding why he or she believes the project is significant, and what will be accomplished, prior to delving into the primary discussion points.

2. Planning Process Group - is the second stage in the PMI Project Management Process Groups. The planning process group is dedicated to establishing a detailed road map for project execution. This involves several key activities:

- Scope Definition: Clearly defining the project's boundaries, ensures everyone involved is working towards the same goals and avoids scope creep (uncontrolled growth of project deliverable).
- Objective Refinement: The initial objectives outlined in the initiating process group may be further refined during the planning stage.
- Course of Action: This involves defining the specific tasks, activities, and resources required to achieve the project objectives. This typically involves creating a Work Breakdown Structure (WBS) which breaks down the project deliverable into smaller, manageable components (PMI,2021).

Williams (2008) states that planning is crucial for the successful completion of any project as it enables the anticipation of potential challenges, efficient resource allocation, and alignment of all stakeholders on the project's objectives and timeline. Through the development of a comprehensive plan, tasks can be broken down into manageable steps, dependencies can be identified, and milestones can be established to assess progress. Effective planning not only aids in maintaining organization and staying on course but also facilitates clear communication of the project's status and requirements to both the team and clients. Ultimately, a well-executed plan can determine the outcome of a project, differentiating between successes and falling short of objectives. Here are some essential tools used for effective planning:

Work Breakdown Structure - is a representation of the project's scope is depicted through its Work Breakdown Structure (WBS). This structure consists of a hierarchical tree that showcases the project and its various deliverables. The process of creating a WBS involves beginning with the overall project and then dividing it into component deliverables. Subsequently, each deliverable is further broken down into its constituent parts. This deconstruction continues until the components are both feasible and controllable.

Gantt Chart - is commonly perceived as the visual representation associated with the concept of a project plan. It essentially serves as a method for illustrating the project timeline within a specific format of a bar chart.

Plan Reviews - is more a technique than a tool, plan reviews helping us to keep our plan alive. A plan review is a short meeting (of not more than 30 minutes) in which you review the Project plan with a group of people.

3. Executing Process Group - is the third stage in the PMI Project Management Process Groups. Those processes performed to complete the work defined in the project management plan to satisfy the project requirements. It's where the project plan is put into action. This involves:

- **Task Management:** Project managers oversee the execution of tasks and activities outlined in the project plan. This includes assigning tasks to team members, monitoring progress, and addressing any issues that arise.
- **Resource Management:** Effectively allocating and managing resources (people, materials, equipment) during execution.
- **Communication:** Effective communication with all stakeholders throughout the execution phase is essential. This ensures everyone is informed of progress, potential challenges, and any necessary adjustments to the plan (PMI,2021).

There are a number of tools and best practices that can help us through the Executing phase.

4. Monitoring and Controlling Process Group - is the fourth stage in the PMI Project Management Process Groups. This phase is dedicated to the continuous monitoring of the project's advancement in comparison to the established baseline devised during the initial planning phase. This procedure encompasses the tracking of various elements such as: Schedule, Budget, Scope, and Quality, ensuring compliance with predetermined quality benchmarks. This phase is not also implement corrective measures when necessary. This includes identification of deviations from the original plan, examination of underlying causes, and execution of corrective actions to realign the project.

5. Closing Process Group - represents the final stage in the PMI Project Management Process Groups. denoting the official conclusion where all project undertakings are formally ceased. This stage encompasses a sequence of activities aimed at guaranteeing a thorough and seamless project handover. The primary tasks encompass Project Closure, Deliverable Acceptance, Lessons Learned, Post-Project Review, among others. Furthermore, it enforces the concept of Smooth Handover: An essential element of the closure process group involves ensuring a seamless transition of the project's deliverable and ongoing operational responsibilities to either the end users or the specified team within the organization. This process may entail activities such as Training End User and facilitating Knowledge Transfer.

2.2.4. Project Management Knowledge Areas

Schwalbe (2015) states project management knowledge areas as key competencies that project managers must develop in order to effectively manage projects. There are ten knowledge areas identified, which are essential for project managers to have knowledge and skills in. These knowledge areas include:

1. Project Integration Management- focuses on coordinating the work performed within each of the other knowledge areas. It ensures all the different elements of the project work seamlessly together towards achieving the overall project goals.

The primary procedures within project integration management encompass developing the project charter, conducting project plan development, executing the project plan, and managing overall change control. The initial procedure serves to formally authorize the project and enable the project management to allocate organizational resources effectively. Project plan development involves translating the outcomes of other planning processes into a cohesive and comprehensive document. Project plan execution is essential for carrying out

the project plan, executing the activities outlined, and implementing the approved process improvement plans and modifications. Lastly, overall change control plays a pivotal role in facilitating the coordination of changes throughout the entire project (Duncan, 1996).

2. Project Scope Management- focuses on clearly defining and managing the project's work in order the organizations can ensure they deliver the right project on time, and within budget. A detailed project scope statement is generated with objectives, requirements, boundaries, and cost estimation. This involves creating a Work Breakdown Structure (WBS), Developing a Scope Management Plan and Managing Scope Creep. Creating a Work Breakdown Structure (WBS) is essential to break down major deliverables into manageable components. Scope verification ensures stakeholder acceptance of deliverables, while scope change control manages and assesses project scope changes to maintain project alignment (Schwalbe, 2015).

3. Project Time Management- which includes estimating project duration which is estimating the amount of time required to complete each project task that are essential for creating a realistic project schedule, developing schedules that outlines the sequence of project tasks and their planned start and finish dates, and ensuring timely project completion (Schwalbe, 2015).

Project Time management includes the following activities. (Duncan, 1996)

- **Activity Definition** - involves the identification of specific tasks necessary for generating project deliverables. It breaks down work packages into activities for more detailed and precise estimations.
- **Activity Sequencing** - is the process of identifying and documenting the dependencies between activities.
- **Activity Duration Estimating** -entails estimating the required number of work periods for completing individual tasks.
- **Schedule Development** - includes analyzing activity sequences, duration, and resource needs to formulate the project schedule. The schedule baseline is the finalized version of the project schedule integrated into the project management plan.
- **Schedule Control** - involves managing changes to the project schedule by evaluating outcomes and making necessary adjustments.

4. Project Cost Management- It focuses on planning, estimating, budgeting, and controlling the financial resources required to complete a project successfully. It involves estimating project costs, developing the project budget and controlling project costs. Project cost management is concentrated on the procedure of creating guidelines, protocols, and strategies

for planning and recording costs, expenses, and managing expenditures. Moreover, it involves estimating costs by formulating an approximate calculation of financial resources required to finalize project tasks. Furthermore, it establishes the project budget by consolidating the projected costs of each task within the project, thus defining an approved baseline for the project's cost (PMI, 2017).

5. Project Quality Management - It focuses on ensuring that a project's deliverables meet the defined standards and expectations, ultimately fulfilling the project's purpose. It involves Defining Quality Standards, Quality Planning, Quality Control, and Quality Assurance (Schwalbe, 2015).

Project quality involves the utilization of procedures and policies to implement quality in organizations and projects, ensuring that the quality system aligns with project requirements. The focus of project quality management is primarily on defining quality requirements and standards for ongoing projects, outlining deliverables, and documenting project adherence to quality requirements. Moreover, it encompasses auditing the quality requirements and evaluating results obtained from quality control measurements, utilizing operational definitions and quality standards akin to Total Quality Management (TQM) techniques (Feigenbaum, 2002).

6. Project Human Resource Management- It concentrates on effectively acquiring, managing, developing, and utilizing the project team to achieve optimal project outcomes.it involves Developing a Human Resource Management Plan, Staffing the Project, Team Development and Managing Project Team Performance (Schwalbe, 2015).

7. Project communications Management-It focuses on ensuring the timely and appropriate exchange of information among all project stakeholders. It involves generating, collecting, disseminating, and storing project information (Schwalbe, 2015).

8. Project risk management- Project risk management involves a systematic process of identifying, analyzing, responding, and monitoring project risks throughout the project life cycle. It involves risk identification, risk analysis, risk response planning and risk monitoring and control. The main goals of project risk management are to enhance the likelihood and impact of positive risks while reducing the likelihood and impact of negative risks, ultimately aiming to optimize the project's chances of success. The process involves planning risk management, identifying risks, conducting qualitative risk analysis, performing quantitative risk analysis, planning risk responses, implementing risk responses, and monitoring risks (PMI,2017).

9. Project procurement management- Project procurement management involves the entire acquisition life-cycle from identifying needs to managing contracts with vendors and suppliers.It involves identifying procurement needs, developing a procurement management plan, soliciting bids and proposals, vendor selection and contract administration.

It emphasizes on recording decisions associated with project procurement, acquiring sellers' responses and choosing sellers as well as overseeing acquisition relationships and supervising all activities related to performance of the contract. There are numerous inputs utilized by project acquisition management (e.g. requirements documentation, project schedule, stakeholder register), and techniques (e.g. expert judgment, bidder meeting, performance reporting) as well as certain inputs (e.g. procurement documentation, source selection criteria, project document updates) (Schwalbe, 2015).

10. Project stakeholder management- which focuses on identifying stakeholders, understanding their needs, and engaging them appropriately throughout the project. It involves identifying stakeholders, understanding stakeholder needs and expectations and developing a stakeholder management plan.

All of these knowledge areas are interconnected and play a vital role in the successful completion of a project. Project managers need to be proficient in all these areas to effectively manage projects and meet stakeholder needs and expectations.

As Duncan (1996) indicated Project stakeholder management includes the following activities:

- Identify stakeholders- documenting stakeholders' importance/influence and their interest Levels.
- Plan stakeholder management- contains desired engagement levels, scope and impact to stakeholders, interrelationships, communication requirements and forms, how to update the plan.
- Manage stakeholders Engagement- Effective communication between project stakeholders so as to meet their expectations and address issues. It includes building trust and resolve conflicts, negotiation and communication skills.
- Control stakeholders' engagement- monitoring overall stakeholder relationships and adjusting strategies and determining frequency of project progress review with customer.

2.3. Empirical Review

Ofori ,(2013) identified that Project management as an effective approach towards attaining objectives. Elements like top management support, proficient communication, and engagement of stakeholders are key contributors to the success of a project. Furthermore, the deficiency of a formalized documentation system for project management practices among project managers has led to a scarcity of empirical data.

Patanakul,(2010) suggested that employing Project management tools and techniques (PMTT) strategically during particular project stages can greatly enhance project outcomes, underscoring the significance of utilizing these tools efficiently instead of solely depending on their widespread use. Project managers must select the suitable timing and approaches for employing PMTT to optimize the effectiveness of such tools and ultimately enhance project results.

Attarzadeh, (2008) explained factors contributing into project success and failure.it outlined that factors like user involvement, good planning, and estimations, as well as effective leadership and technical skills of team members as crucial for project success and factors like Poor planning and scheduling, incomplete requirement were identified as primary reasons for project failure.

Fernandes et al.,(2013) identified top tools and techniques for enhancing project management performance. The research utilizes a mixed methodology to pinpoint the most advantageous project management practices, emphasizing tools such as progress reports, requirements analysis, and risk identification to improve project performance.

Tereso et al.,(2019) emphasized that utilizing the best project management practices leads to added business value, benefit realization, and better benefit management activities, ultimately ensuring project success.The most used project management practices in private organizations are identified as kick-off meeting and project charter for Initiating Process Group,work breakdown structure requirements analysis project scope statement baseline plan ,activity list, Gantt chart, and milestone planning , risk identification for Planning Process Group ,project issue log and lessons learned for Executing Process Group , progress meetings, progress report, change request, project management software for monitoring schedule and customer satisfaction surveys for Monitoring and Controlling Process Group

and client acceptance form, project closure documentation, and close contracts for Closing Process Group.

Islam et al.,(2011) explained that the essential elements of a project initiation plan encompass opportunity assessment, feasibility studies, project phase reviews, and engagement of specialized firms, which are crucial for achieving project success in the context of Bangladesh. It is highlighted that a majority of the variables exhibit a notable positive correlation with project success, with the exception of projects initiated solely on identified problems and feasibility studies conducted by specialized firms.

Muute & James (2019) conducted a research that highlights those proficient financial resource plans, appropriate material usage planning, and effective time management practices are important for successful completion of project.It deduced that adequate and ongoing training initiatives for project team members yield favorable outcomes on project performance.

Tasevska et al.,(2014) conducted a study that indicates the importance of project planning such as business case development, scope planning, baseline plan development, and risk planning in achieving successful ERP implementations, emphasizing the need for companies to invest in defining project goals and requirements to enhance project outcome.

Egboga & Taiwo,(2021) investigated the magnitude of the impact of project risk mitigation strategies on achieving project objectives related to budget, quality, schedule, and scope throughout the implementation phase. The results revealed a strong and beneficial association between the implementation of risk mitigation measures and the successful execution of project tasks.

Studies by Verner and Cerpa (2005) on Australian software projects and IKamau (2013) on Kenyan IT projects in commercial banks highlight a common issue which is the lack of a clear project management methodology. This often leads to problems like unclear requirements, insufficient risk assessment, and ultimately, project failure.

IKamau's (2013) study in Kenya showcases the positive impact of adopting project management methodologies. Kenyan banks using frameworks like PRINCE2, PMBOK, Agile approaches, and even in-house methods experienced significant improvements. Interestingly, PRINCE2 emerged as the most popular choice among the banks surveyed. This led to marked improvements in the project delivery time, the project cost, the quality of final product, management of project risks, realization of expected benefits and improved stakeholder adoption and satisfaction.

Madyibi (2019) The study concluded that institutional arrangements play a crucial role in facilitating the design of a project governance model which is a framework that defines how projects are overseen and managed within an organization.it underscored the importance of project management principles, organizational change, and effective resource utilization in managing the Broadband Project.

Anyona & Yusuf (2022) demonstrated that governmental regulations, project scheduling, engagement of stakeholders, and the process of monitoring and evaluation exerted a positive impact on the implementation of fiber optic infrastructure. The study put forth a recommendation that organizations should guarantee the active involvement of stakeholders throughout all stages of a project, starting from its initiation to its conclusion. Furthermore, it was suggested that companies should establish educational initiatives aimed at enhancing the leadership capabilities of current project managers which is a crucial factor in ensuring the efficiency, effectiveness and sustainability of fiber optic infrastructure.

Factors crucial for success in dynamic environment are identified by Kariuki (2022) which includes proper planning; effective labor management, efficient resource allocation, and regular monitoring were identified as key factors for project success in a competitive and ever-evolving environment on investigating how project management methods in financial technology firms in Nairobi, Kenya impact the success of individual projects.

Studies by Haftom (2019), Kinfe (2018), and Metaferia (2021) all point to weaknesses in planning and scheduling which includes Setting unrealistic milestones, inadequate risk identification, inaccurate activity estimation and Budgetary overruns due to initial over estimation were also identified. In risk management the studies highlight poor risk management practices. inadequate identification, assessment, and mitigation strategies expose projects to unforeseen challenges. Additionally, proper documentation of lessons learned seems to be lacking (Metaferia, 2021) While Yibeltal (2020) found the TEP to be well-planned and scheduled, a robust monitoring and evaluation framework was absent. This limited the project's ability to learn and adapt effectively. Communication gaps between stakeholders and limited stakeholder involvement (Yibeltal, 2020; Kinfe, 2018) can lead to misunderstandings and delays. While resource management practices like defining and sequencing activities were found to be good (Kinfe, 2018), limitations exist in areas like training and human resource management (Nasser, 2019).

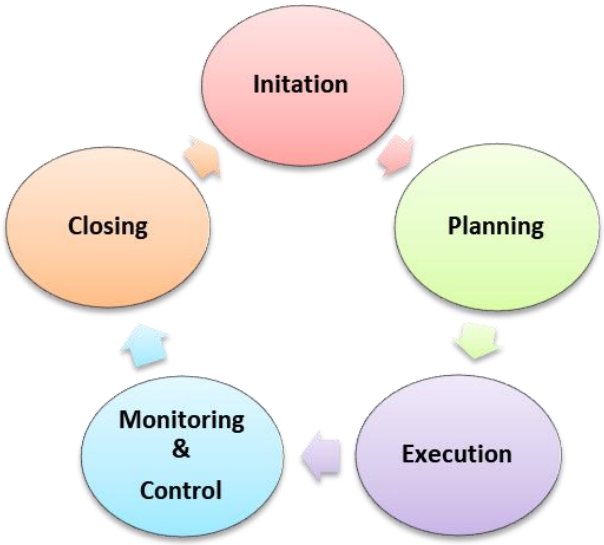
Kinfe (2018), Metaferia (2021) and Yibeltal (2020) also identified strengths like well-defined project management plan with good activity sequencing, good practices in scope management, ensuring project deliverables meet the defined requirements, Core planning elements like

scope, schedule, cost, resources, and procurement were implemented to some extent, good management support, although limitations in incentive and training management were identified.

2.4. Conceptual Framework

The Conceptual framework employed in this study is structured based on five process groups: initiation, planning, execution, monitoring and control, and closing to asses project management practices of Fixed Broadband Network Infrastructure Upgrade projects of Ethio-Telecom, SWAAZ as per defined by the PMI (PMBOK).

Fig 2.1- Conceptual Framework



Source: Prepared by the researcher, 2024

CHAPTER THREE
RESEARCH METHODOLOGY

3. Introduction

This chapter describes the methodologies that were used in this study, the choice of particular research designs, data type and source of data, research approach, data gathering technique and instruments, sampling and sampling techniques and data analysis techniques along with and appropriate justification associated with each approach.

3.1. Research Design and Approach

3.1.1. Research Design

Research design includes plans and procedures for research, covering decisions from broad assumptions to detailed data collection and analysis methods. The research design serves as a guideline for the research project, outlining the overall approach the researcher will use to address the research question (Creswell, 2013).

Descriptive research design was adopted to undertake this study. Descriptive research design is typically concerned with describing the characteristics of a phenomenon. It can be used for the purpose of estimates of the proportions of a population that have these characteristics (Cooper and Schindler, 2014).

This study used descriptive design to assess the project management practices of Fixed Broadband Network infrastructure upgrade projects of Ethio-telecom's specifically in South West Addis Ababa Zone (SWAAZ). The chosen research design facilitates the identification and definition of participant opinions and attitudes.

3.1.2. Research Approach

There are three basic research methods namely Qualitative, Quantitative, Mixed methods. The researcher used a mixed approach that incorporated elements of both qualitative and quantitative approaches. This approach encompasses underlying philosophical beliefs, the application of both qualitative and quantitative methodologies, and the integration of these methodologies within a research project. As a result, it extends beyond mere data collection and analysis, requiring the concurrent utilization of both methodologies to enhance the

robustness of a study beyond what either qualitative or quantitative research could achieve (Creswell & Plano Clark, 2007).

3.2. The Population of the Study and Sampling

3.2.1. The Population of the Study

The study focused on a specific target population, which encompassed a comprehensive total of 197 employees. These employees were drawn from various departments within the organization, including the Fixed Network project management department commonly known as PMO, the Fixed Network Planning and Engineering department, the Fixed network roll-out team, Fixed core and access network planning and engineering section, the South West Addis Ababa zone (SWAAZ) supervisors, as well as the Managers and Team members.

3.2.2. Sample Size and Sampling Techniques

Sampling involves selecting a manageable subset of individuals or items from a defined population. This subset, chosen serves as the data source for the study, reflecting the characteristics of the larger population (Sharma, 2017). Sampling techniques are broadly classified into two main categories: Probability sampling methods and Non-probability sampling methods. Within probability sampling, each member of the population is allotted a known chance of being selected by ensuring the sample represents the population.

whereas non-probability sampling methods involve the selection of participants based on non-random criteria. Consequently, not all members in the population have an equal likelihood of being chosen (Alvi, 2016).In this research, the researcher used Stratified sampling technique, and then following random sampling procedure to chosen employees within the stratum from each department of the total population, and distribute questionnaire and collect the require information from the samples determine. The researcher selected this technique because employees were selected from different section so that it can be proportionally distributed among the targeted divisions of Ethio telecom.

From the total population of 197, the total sample size is identified using Taro Yamane's (1967) statistical formula with 95% confidence level and 5% error. Hence, the sample size will be 132 and the same population classifies the study for each process.

$$n = \frac{N}{1+Ne^2}$$

$$n = \frac{197}{1+197*0.05^2}$$

$$n = 132$$

Where

N= total population size

n=sample size

e= sampling error

Table 3.1- Total population and sample size representation

No	Department	Number of employees	Sampled size
1	Project Roll out	97	65
2	Engineering Planning and design	40	27
3	Fixed core and access network planning and engineering	15	10
4	Project Management Office	22	15
5	SWAAZ Fixed Network	15	10
6	SWAAZ Sales	8	5
	Total	197	132

Source: Own Survey, 2024.

3.3. Data Type and source

The research employed a combination of primary and secondary data sources to ensure comprehensive data collection. Primary data was obtained through questionnaires and semi-structured interviews. While secondary data was gathered from literature reviews, online resources and organization report.

3.4. Data Collection

Primary data was acquired through semi-structured interviews and self-administered questionnaires, the questionnaire was thoughtfully designed to include an introduction, respondent profile, and closed-ended questions aimed at capturing valuable insights on project management practices for network infrastructure upgrade projects. Additionally, open-ended questions were incorporated to elicit general opinions on telecom project management practices. The questionnaire was made accessible through both hard copy distribution and online submission via Google Forms, allowing respondents to choose their preferred method of participation.

3.5. Data Analysis

Data analysis is the systematic conversion of unprocessed data into valuable insights that can be utilized. Data collected from the survey was analyzed using descriptive statistical

techniques. Mean and Percentage was used to calculate the project management practice level of the organization. Calculating the response rank of each process groups were undertaken for each respondent by calculating the mean. The qualitative data collected were analyzed by using narrative analysis.

For this purpose, the computer software Statistical Package for Social Science (SPSS V.27) was used as the best options available.

3.6. Data Presentation

After analysis is conducted the processed data is presented by using frequencies, means, percentile and bar charts and Pi charts.

3.7. Validity and Reliability

To ensure the research's validity, a variety of established methods were implemented. This included utilizing a diverse range of data collection techniques. The interview and survey questions were carefully crafted, drawing upon insights from the literature review and consultations with the advisor. To further enhance the research instrument's effectiveness, the advisor reviewed the questions for clarity and ensured they directly addressed the research objectives.

The reliability of the research was secured by performing a statistical test for Likert scale type questions by using SPSS version 27. The analysis resulted in an overall Cronbach alpha value of 0.937, which is generally considered acceptable, implying that the questions have high internal consistency.

It has been stated on (Hair et al., 1998) that, a commonly used value for acceptable reliability is 0.70. In the table below the Cronbach alpha coefficient for the items under evaluation is greater than 0.7, therefore its reliability is statistically acceptable this implies that the data collected by the questionnaire can be used for further analysis.

Table 3.2- Reliability Result

No.	Variable	Cronbach's Alpha	No of items	Scale
1	Project Initiation	0.567	5	1-5
2	Project Planning	0.847	11	1-5
3	Project Execution	0.884	10	1-5
4	Project Monitoring and Control	0.919	10	1-5
5	Project Closure	0.75	4	1-5

Source: Own Survey, 2024.

3.8. Ethical Consideration

The respondents were told the purpose of the study and asked their permission for the interviews. The data collected used only for this study purpose and it is not accessible for any other purposes. However, the study result will be presented and accessible both for the graduating school and the organization under study. To ensure that the in trust of all parties have been protected & respondents were informed about the objective of the interview and questionnaire prior to conducting it.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter deals with analysis and interpretation of the gathered data from Ethio telecom employees who has direct impact on the research area through structured questionnaires and key informant interviews. The obtained data were analyzed by using statistical package for social sciences (SPSS version 27) software. Descriptive statistics such as mean, frequency, standard deviation and percentage were employed to describe the results. Also, tables, pie charts and bar charts were used to present

the data. 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.

4.2. Questionnaires and Response Rate

The questionnaire consists of 5 open ended questions, 52 close ended questions including 42 questions designed in a Likert scale and 12 questions designed for multiple responses. An interview was also held with Project Management supervisor, Project Management Expert, Rehabilitation Supervisor, Planning Supervisor and O&M Supervisor. All of the interviewees were selected based on their significant roles in the project management practices.

After distributing the questionnaire, I have achieved a response rate of 77%. This translates to 102 respondents who completed the questionnaire, utilizing both online(Google forms) and hard copy formats.The online method was used due to its convenience and its preferred by most of the respondents. The questionnaire response rate was impacted by two factors. Field work assignments for so me employees and demanding schedules for those involved in the Addis Ababa's Corridor Development project limited their ability to participate.

Table 4.1-Response Rate

Method of questionnaire distribution	Number of Distributed questionnaires	Number of Returned questionnaires	Response Rate (%)
Physically using hard copy questionnaires	65	57	88
Using Google form	67	45	67
Overall	132	102	77

Source: Own Survey, 2024

4.3. Demographic Profiles of Respondents

The demographic profile of the respondents consists of gender, age, educational background, Project management Training ,work and project experience.

Table 4.2- Respondents Demographic Profile 1

Respondents Demographic Profile			
1.Gender		Frequency	Percent (%)
Valid	Female	38	37.3
	Male	64	62.7
	Total	102	100.0
2. Age			
	20-30	28	27.5
Valid	31-40	48	47.1
	41-50	20	19.6
	51-60	6	5.9
	Total	102	100.0
3. Education Background			
Valid	Diploma	2	2.0
	Bachelor Degree	66	64.7
	Master's Degree	34	33.3
	Total	102	100.0
4. Field of Study			
Valid	Electrical Engineering and related	41	40.2
	Information System and related	40	39.2
	Business Management and related	13	12.7
	Project Management	6	5.9
	TIS	1	1.0
	Other	1	1.0
Total		102	100.0

Source: Own Survey , 2024

The demographic profile of the respondents consists of gender, age, educational background, Project management Training, work and project experience.

As shown in the table above the survey included a higher percentage of male participants which is 62.7% and female participants 37.3%, this indicates that the gender distribution of the study is not proportional due to lower total representation of females in the entire organization.The result further illustrates that 27.5% are between the age of 20 and 30, 47.1% between the age of 31 and 40 19.6% between the age of 41 and 50 ,finally 5.9% of the

respondent were above the age of 50.As we can see from the result majority of the respondents are in the active working age range.The Educational background shows that the majority of respondents ,64.7% hold a Bachelor's degree, followed by those with a Master's degree 33.3% and diploma 2.0% and the most frequent field of study is Electrical Engineering and related fields 40.2% followed by Information System and related fields 39.2%. Business Management and related fields 12.7% ,Project Management 5.9%, and TIS (Information Technology Services) 1% have progressively lower frequencies.high frequency in engineering fields might suggest the survey was targeted towards a population in a technical field due to the interdisciplinary nature of telecom projects that requires technical and managerial expertise.

Table 4.3- Respondents Demographic Profile 2

Respondents Demographic Profile			
1. Current Position			
Valid		Frequency	Percent (%)
	Specialists and Technicians	56	54.9
	Supervisors	18	17.6
	Managers	3	2.9
	Project management Specialists	20	19.6
	Sales	3	2.9
	other Staff	2	2.0
	Total	102	100.0
2. Work Experience (in years)			
Valid	1-10	48	47.1
	11-20	37	36.3
	21-30	13	12.7
	31-40	4	3.9
	Total	102	100.0
3. Experience On Projects (in years)			
Valid	0-10	84	82.4
	11-20	12	11.8
	21-30	3	2.9
	31-40	1	1.0
	Total	100	98.0
Missing System		2	2.0
Total		102	100.0
4. Previous Project history in another Organization			
Valid	Yes	4	3.9
	No	98	96.1
	Total	102	100.0

Source: Own Survey , 2024

The above table data indicates that a majority of the employees (54.9%) hold specialist or technician positions, which could indicate a company that relies heavily on technical expertise.The presence of supervisors, managers, project management specialists, and a sales department suggests a company with a structured organization with different levels of management and functional areas. A majority of workers (82.4%) have a 10 or less of experience on projects. This might suggest that the company has younger workforce.

Table 4.4- Respondents information on project management training

1. Project Management Training given by Ethio Telecom			
Valid	Yes	32	31.4
	No	70	68.6
	Total	102	100.0
2. Project Management Training outside of Ethio telecom			
Valid	Yes	21	20.6
	No	81	79.4
	Total	102	100.0
3. Project management training access in the organization?			
Valid	Yes	49	48.0
	No	28	27.5
	Not sure	24	23.5
	Total	101	100.0
4. How often is the project management training given ?			
Valid	Monthly	2	4.0
	Quarterly	2	4.0
	Semi- annually	12	24.5
	Yearly	33	67.3
	Total	49	100.00

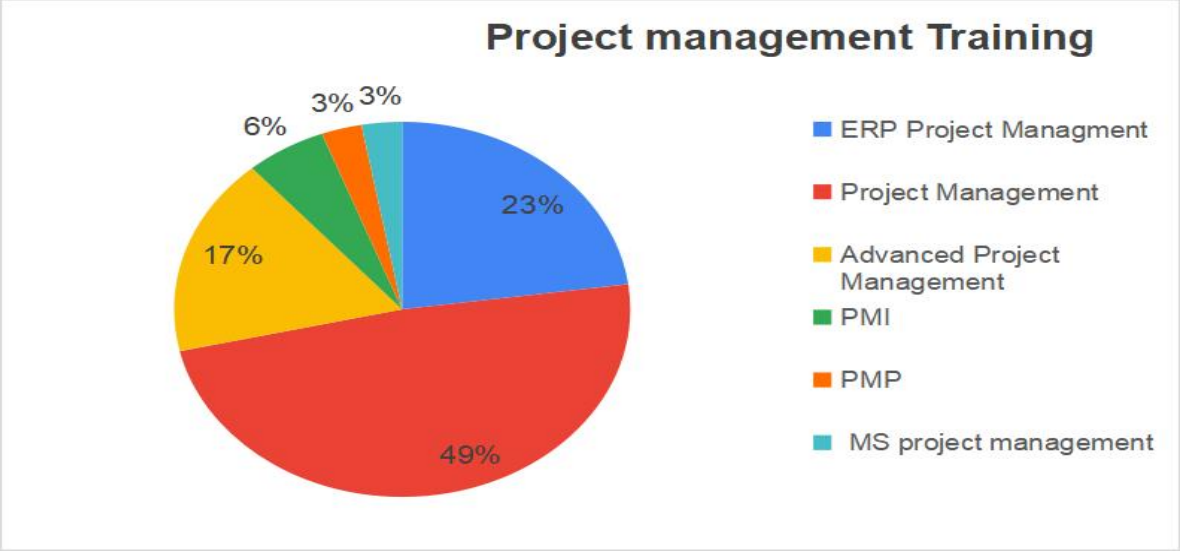
Source: Own Survey , 2024

The table also shows whether employees have received project management training provided by Ethio Telecom or outside Ethio-telecom's, it shows smaller proportion of employees 31.4% have received project management training through Ethio Telecom compared to those who have not which is 68.6% and employees 79.4% haven't received project management training outside of Ethio Telecom Only 20.6% have received external project management training.The data reveals a clear gap in project management training.

After asking the employees whether there is Project management training access in the organization 48% of respondents responded Yes, 27.5% responded No, and 23.5% did not know whether there is project management training access. Among the responses, 67.3% say there is a yearly project management training access.

The findings on project management training access is that there's a need for improvement in this area to enhance the overall effectiveness of project management practices. A significant portion of the workforce might lack the necessary skills and knowledge to effectively manage projects. The fact that 23.5% of respondents were unsure about training access indicates a potential lack of clear communication about available training opportunities.

Fig 4.1-Project management training taken by respondents



Source: Own Survey, 2024

Table 4.5-Respondents information related to project

1. Size of Project that the respondents involve		Responses	
		Frequency	Percent (%)
Size Of Project	Small Size Projects	73	34.8
	Medium Size Projects	77	36.7
	Large Size Projects	60	28.6
		210	100.0
Missing Cases		3	2.9
Total		102	100
2. Type of Projects that the respondents involve			
Type of Projects	Traditional ODN Expansion	75	24.1
	Quick ODN Expansion	54	17.4
	New OLT installation	59	19.0
	Rehabilitation and relocation	61	19.6
	As built	23	7.4
	Migration	39	12.5
Total		311	100.0
Missing Cases		3	2.9
Total		102	100

Source: Own Survey, 2024

Based on the size of the projects 36.7% are involved in Medium Size Projects.A significant number 34.8% work on Small Size Projects and Fewer respondents 28.6% are involved in Large Size Projects comprising projects Rehabilitation and relocation 19.6%, New OLT installation 19.0%, Traditional ODN Expansion 24.1%, Migration 12.5% , Quick ODN

Expansion has the fewest respondents 17.4% since it is new project type and finally As built projects have the lowest frequency 7.4%.

A significant portion (71.5%) of respondents are involved in small or medium-sized projects which indicates a potential focus on smaller, more manageable projects that are flexible and faster to deploy require small investments, have shorter deployment timelines, and impose fewer resource constraints and, reduced risk compared to large-scale projects.

The company is positioned to be agile to respond to changes in the market supported by demand analysis which leads to high productiveness and gaining a competitive advantage.

From the type of Projects that the respondents involve the researcher has observed that the analysis of the response also indicates a higher level of employee engagement in well-established project categories characterized by mature project management methodologies such as Traditional ODN expansion, OLT installation, rehabilitation, and relocation. Conversely, there is a lower level of involvement in newer project categories like Quick ODN Expansion, which suffers from a shortage of adequately trained staff members in the field. The low response for migration is emerged due to the small number of employees who are currently responsible for the project.As for As-built projects, their primary focus lies in documenting project data as initially implemented and making the necessary modifications to the current plan for future reference. Despite the significant role they play in maintaining updated project records, these projects have not been given sufficient attention.

4.4. General information on project management of the organization

Table 4.6- Major internal and external challenges

Major Challenges to the Projects in the Organization			
		Responses	
		Frequency	Percent (%)
Internal Challenge	Inadequate Project planing	78	14.3
	Resource Constraint	86	15.8
	Time , cost and quality constraints	80	14.7
	Poor communication	84	15.4
	Lack of skilled manpower	63	11.6
	Lack of proper training	82	15.0
	Clarity on the scope of the project	72	13.2
Total		545	100.0
External Challenge	Environment	65	18.3
	Government	66	18.5
	Economic condition	77	21.6
	Competitive environment	62	17.4
	Dependence on Suppliers and vendors	86	24.2
Total		356	100.0
Missing Cases		2	2.0
Total		102	100

Source: Own Survey, 2024

Table 4. 7- Major internal challenges mean distribution

Internal Factors	Major effect		Significant effect		Moderate effect		Minor effect		No effect		Mean
	Q	%	Q	%	Q	%	Q	%	Q	%	
Inadequate Project planing	37	36.3	38	37.3	19	18.6	6	5.9	2	2.0	4.0
Resource Constraint	64	62.7	31	30.4	5	4.9	1	1.0	1	1.0	4.53
Time,cost and quality constraints	14	13.7	34	33.3	41	40.2	11	10.8	2	2.0	3.46
Poor communication	61	59.8	16	15.7	14	13.7	8	7.8	3	2.9	4.22
Lack of skilled manpower	10	9.8	13	12.7	12	11.8	54	52.9	13	12.7	2.54
Lack of proper training	22	21.6	26	25.5	30	29.4	19	18.6	5	4.9	3.40
Clarity on the scope	40	39.2	27	26.5	17	16.7	12	11.8	12	11.8	3.81

Source: Own Survey, 2024

The above table outlines major internal challenges faced by projects within the organization.The results indicate that resource constraints and poor communication with mean score of 4.53 and 4.22 respectively indicates suggesting a major effect in addition the table shows inadequate Project planing having a mean of 4.0 , Clarity on the scope with mean of 3.81,Time,cost and quality constraints with mean of 3.46 having significant effects and finally lack of proper training with mean 3.40 and Lack of skilled manpower with mean of 2.54 is considered to has a minor effect.

Table 4. 8- Major external challenges mean distribution

External Factors	Major effect		Significant effect		Moderate effect		Minor effect		No effect		Mean
Environment	19	18.6	9	8.8	12	11.8	33	32.4	29	28.4	2.57
Government	10	9.8	22	21.6	35	34.3	26	25.5	9	8.8	2.98
Economic condition	16	15.7	45	44.1	27	26.5	8	7.8	6	5.9	3.56
Competitive environment	5	4.9	16	15.7	17	16.7	48	47.1	16	15.7	2.47
Dependence on Suppliers and vendors	60	58.8	16	15.7	10	9.8	12	11.8	4	3.9	4.14

Source: Own Survey, 2024

For the external factors the results indicate that dependence on suppliers and vendors with mean of 4.14 and economic condition with mean of 3.56 is perceived to have the most significant effect and government with mean 2.98 has moderate effect and other external factors like the environment with mean of 2.57 and competitive environment with mean of 2.47 are viewed as having minor effects on projects.

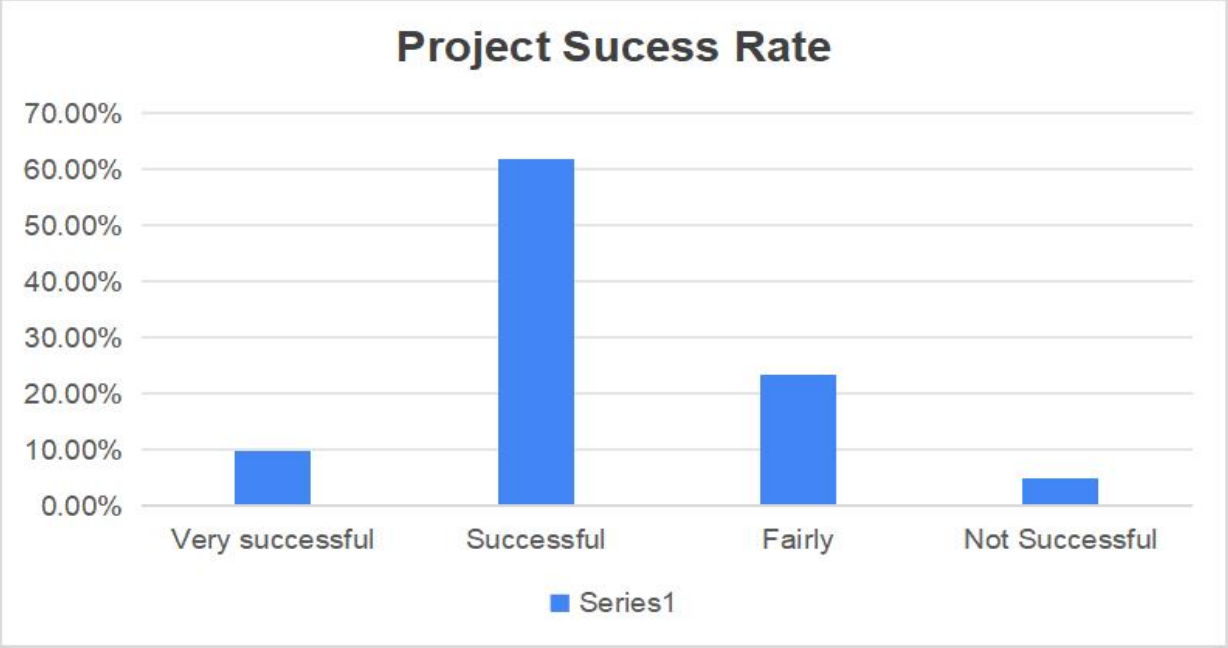
The interpretation of the mean percentage scores was adopted from (Ahmad,2021), as shown in Table 4.6 below. It was adopted to describe the level of project management method, processes or processes groups being practiced.

Table 4. 9- The Mean Range of Likert Scale

Description	Scale	Mean Range	Interpretation
Strongly Satisfied	5	4.20 - 5.00	Very High
Satisfied	4	3.40 - 4.19	High
Neutral	3	2.60- 3.39	Moderate
Dissatisfied	2	1.80 - 2.59	Low
Strongly Dissatisfied	1	1.00 - 1.79	Very Low

Adopted from (Ahmad,2021)

Fig 4.2- Response on Project Success Rate



Source: Own Survey, 2024

According to the finding, 9.8% of the respondents believe projects within their organization are very successful; 61.8 % of the respondents think project success rate is successful. In comparison, 24% of the respondents assume it is fairly successful, and 2.5% think it is not successful.

Based on the interview with the project management expert at the PMO, it was found that out of the 315 projects initiated in the SWAAZ area since 2021, 194 (61.6%) were successfully completed even though there were some schedule delay and cost overruns . Furthermore, 45 projects (14.3%) were canceled. Currently, there are 59 ongoing projects (18.7%), 9 paused projects (2.8%), and 8 projects (2.5%) that have not yet been started.The result from the survey and data from project management office show some consistency that it can be concluded that the projects are deployed successfully.

Finally from gathered information on whether the organization has a historical data and 86.3% responded that there is a historical data of projects and the rest 11.8% responded no indicating no access for the historical data.After reviewing documents the researcher has found that the company has a historical document but its not well organized ,accessible and not supported by trending technologies.The absence of properly organized data has resulted gap in the ability to make well-informed decisions,efficient utilization of past patterns, information, and previous project experiences. Additionally, the project team will need to dedicate a significant amount of time and resources towards collecting primary data due to the lack of organized historical data.

4.5. Project Management Process Groups

Following the profile identification and general project management issues, respondents were asked about their experiences in project management practices. Mainly to what extent the organization practiced the project management processes under each project management process groups. By using a Likert scale, respondents were asked to rate each parameter as follows: 1 strongly disagree, 2 disagree, 3 neutral, 4 Agree, and 5 Strongly agree. The respondent's responses were analyzed using mean scores together with standard deviations and percentages to assess the project management practices. The mean value specifies to what degree the sample group averagely agrees or disagrees with the statement.

4.5.1. Project Initiation Process group

The study wanted to find out the extent to which the project initiation process group was implemented in Ethio-Telecom (SWAAZ) Network Infrastructure Upgrading projects . The respondents were asked to indicate the tendency to which they agree with the statement concerning project initiation. Accordingly, the results are presented in the table below.

Table 4.10-Project Initiation Practice Result

Project Initiation				
Project Initiation	Minimum	Maximum	Mean	Std. Deviation
Project objective are clearly Defined	2	5	4.11	.720
Project Scope,time and budgets are clearly described	2	5	4.10	.671
Proper description of risks that might be encountered are identified	1	5	2.70	1.115
Proper Stakeholder Identification and communication is made	1	5	3.73	.822
Proper Feasibility study is conducted	1	5	3.69	.954
Over all Average Value			3.66	.532

Source: Own Survey, 2024

In Table 4.9 a mean score of 3.66 and Standard deviation of 0.532 on a 1-5 scale (where 5 is the highest) suggests a positive perception of project initiation practices within the organization indicating that on average, respondents believe project initiation is carried out in a highly effective manner.

From the process indicators the responses indicate that there is a clearly defined project objective scope,time and budgets with a very high mean value where as stakeholder identification, communication and feasibility study show a slight decrease in mean value putting it in high level showing the need for some level of improvement.Additionally, the results show a moderate level in the proper description of risks that might be encountered during project execution, which is an area that requires further attention and development.

4.5.2. Project Planning Process group

The research aimed to assess the extent to which the project planning process group was implemented within Ethio-telecom. Participants were requested to indicate their level of agreement with the statement regarding project planning.

Table 4.11- Project Planning Practice Result

Project Planning Practice				
Project Planning Indicators	Minimum	Maximum	Mean	Std. Deviation
Detailed project plan that describe how to implement the project is developed	2	5	4.06	.768
Detailed project Schedule plan is developed	2	5	3.98	.796
Detailed cost management plan is developed	1	5	3.94	.781
Detailed resource management plan is developed	1	5	3.81	.898
Detailed communication plan for all bodies is developed	1	5	2.91	1.096
All the activities of the project are defined and documented	1	5	3.80	1.015
Detailed Quality management plan is developed after identification of quality target	1	5	3.48	.931
Appropriate Work breakdown structure (WBS) is created	2	5	4.13	.897
Detailed risk management plan is developed	1	5	2.66	1.098
Detailed procurement management plan is developed	2	5	4.13	.783
Detailed Stakeholder management plan is developed	1	4	3.73	.903
Overall Average Value			3.67	.57

Source: Own Survey, 2024

The result from Table 4.10 indicates that the project management planning is practiced at a high level with 3.67 mean score and 0.57 standard deviation. It shows the development of project plan that describe how to implement the project,preparation of Work breakdown structure(WBS), development of detailed procurement management plan, preparation of detailed project Schedule plan, detailed cost management plan, detailed resource management plan, definition and documentation all the activities of the project , detailed

quality management plan development after identification of quality target ,detailed Stakeholder management plan are rated high. Additionally preparation of detailed communication plan and risk management plan are rated moderate level.

The high ratings for activities indicate that the organization focuses on comprehensive planning.However,the moderate ratings for communication and risk management plans suggest that these areas might not be receiving the same level of attention.The lack of a detailed communication plan led to misunderstandings, delays in information sharing, and missed deadlines, reduced collaboration among team members, resulting in project delays and decreased performance. Additionally poor risk management plan resulted delayed project schedule, a rushed response to unforeseen risks by compromising the quality of the project's deliverables, and ineffective resource utilization to compensate the affected area.

4.5.3. Project Execution Process group

The study was conducted to evaluate the degree to which the project Execution process group was put into practice at Ethio-telecom. Participants were asked to express their agreement level with the statement related to project execution.

The result from below Table 4.11 indicates that the project Execution practice is at a moderate level with 3.15 mean score and 0.735 standard deviation. From the table it is observed that project implementation as per the project plan, project progress on project tasks and deliverable, management of contracts and vendor relationships as per procurement plan,change handling based on formal change requests are rated high in contrast dealing of risks encountered according to the risk response plan is found to be rated low level.while other activities like efficient utilization of resource,effective team development for better team performance,effective communication are given moderate level.Relating the project execution process result with above planning process low level of attention for preparing proper risk management plan leads to poor risk mitigation and response experience.

Table 4.12-Project Execution Practice Result

Project Execution Practice				
Project Execution Indicators	Minimum	Maximum	Mean	Std. Deviation
Effective project implementation as per the project plan	1	5	3.75	.953
Effective project progress on project tasks and deliverable as per the project	1	5	3.62	.904
Efficient utilization of resource	1	5	3.02	1.119
Effective team development for better team performance	1	5	2.80	1.088
Effective communication among team member ,stakeholders and project manager	1	5	2.72	1.132
Effective Quality assurance	1	5	3.32	1.053
The risks encountered are dealt with and treated according to the risk response plan	1	5	2.45	1.132
Effective management of contracts and vendor relationships as per procurement plan	1	5	3.48	.867
Effective change handling based on formal change requests on scope,Schedule,budget	1	5	3.56	.925
Effective and timely resolution of issues and conflicts	1	5	2.80	1.319
Overall Average Value			3.15	.735

Source: Own Survey, 2024

4.5.4. Project Monitoring and Controlling Process group

The investigation aimed to assess the level of implementation of the project Monitoring and Controlling process group. Participants were tasked with indicating their degree of agreement with the statement concerning project monitoring and controlling. Subsequently, the findings are detailed in the table provided.

Table 4.13-Project Monitoring and Control Practice Result

Project Monitoring and Control Practice				
Project Monitoring and Control Indicators	Minimum	Maximum	Mean	Std. Deviation
Effectively Monitoring and controlling the project progress based on the project plan	1	5	3.36	1.016
Effectively tracking key performance indicators related to cost,time, schedule,quality and scope	2	5	3.57	1.027
Effectively assessing and analyzing new and documented project risks	1	5	2.99	1.105
Effective issue identification or deviation from plan	1	5	3.10	1.082
Effectively monitoring the allocation of resources and the utilization	1	5	3.21	1.085
Effectively Controlling changes	1	5	3.35	1.004
Effectively Monitor and control the communication	1	5	3.19	1.066
Effective Administration of the procurement according to the contracts	1	5	3.28	1.031
Effectively performing quality control so that it does not become below the stated quality	1	5	3.42	.993
Effective corrective action plan is implemented	1	5	3.41	1.079
Overall Average Value			3.29	.814

The result from Table 4.12 indicates that monitoring and control practice is at a moderate level with a 3.29 mean score and 0.814 standard deviation. Some of the project activities under this process group like tracking key performance indicators related to cost, time, schedule, quality and scope, performing quality control, and effective corrective action plan implementation rated high whereas the effective administration of the procurement according to the contracts, effectively controlling changes, monitoring the allocation of resources and the utilization, assessing and analyzing new and documented project risks, effective issue identification or deviation from the plan and effectively monitoring and controlling the project progress based on the project plan are rated as moderate level.

From the interview, it is found that for the project management office, it's crucial to receive weekly reports from all stakeholders to assess project implementation and identify necessary improvements confidently.In addition, lack of effective procurement administration according to the contracts is raised due to lack of consistent contact negotiation and delay in delivery of goods.

from observation, the researcher has found that issue identification and deviations from the plan stem from a lack of open communication within and across project teams. Issues during project deployment are often not reported properly, leading to repetitive mistakes. Team members tend to solve challenges informally due to inadequate communication with supervisors and managers. who are mainly concerned with the project progress status and do not emphasize issues and risks encountered.

4.5.5. Project Closure Process group

The study targets to evaluate the extent to which the project closure process group was being put into practice. Participants were instructed to express their level of agreement with a statement pertaining to project closure. The results are then outlined in the accompanying table.

Table 4.14-Project Closure Practice Result

Project Closure Practice				
Project closure Indicators	Minimum	Maximum	Mean	Std. Deviation
Effective verification of that all project deliverable successfully attained and accepted by stakeholders	2	5	3.80	.876
Proper project success measurement is conducted	1	5	3.65	.899
Proper documentation of lessons learned from the projects is observed	1	5	2.97	1.100
Proper project closure report is prepared	1	5	3.49	1.006
Overall Average Value			3.48	.737

Source: Own Survey, 2024

Table 4.13 indicates that the project closure practice is at a high level with 3.48 mean score and 0.737 standard deviation.from the result it is observed that verification of that all project deliverable successfully attained and accepted by stakeholders, Proper project success measurement is conducted and preparation of project closure report are rated at high level where as documentation of lessons learned from the projects is rated at moderate level.

From observation inconsistencies in the documentation process are identified.Some projects might be well-documented, while others might lack proper capture of lessons learned which allows project teams to build on past experiences.The study implies that while there is a recording of data and lessons learned there is a low amount of utilizing the recorded data for decision making, for assessing challenges and achievements as well as a experience sharing among the staff.

Table 4.15- Overall Project Process Group Result

Project Process Group	Mean	Standard deviation	PM practice level
Project Initiation	3.66	.532	High
Project Planning	3.67	.57	High
Project Execution	3.15	.735	Moderate
Project Monitor and control	3.29	.814	Moderate
Project Closure	3.48	.737	High
Overall average value	3.45	.509	High

Source: Own Survey, 2024

Based on the data presented in Table 4.14, the organization's project management practices are considered to be at a moderate level, with an average mean rating of 3.45 and a standard deviation of 0.509. The processes of project initiation, planning, and closure are practiced more efficiently compared to other practices.

Generally, the result shows that the organization have a moderate project management practice level.Furthermore, the research aligns with previous studies by Metaferia (2021), Haftom (2010), and Knife (2018) (consider adding a comma after each author's name for better readability). These studies all highlight a common concern: insufficient attention is paid to crucial resource management variables like risk, cost, time, and communication. Metaferia (2021) further emphasizes the lack of proper documentation and lessons learned, suggesting missed opportunities for improvement.

CHAPTER FIVE

SUMMARY,CONCLUSION AND RECOMMENDATIONS

5. Introduction

The primary aim of this research is to assess the current project management practices of Ethio-telecom's(SWAAZ). This chapter seeks to place the findings from chapter four in to the context of the aim and objectives, which represent the original motivation of the study. Accordingly, the following section presents concluding statements and then makes recommendations.

5.1. Summary of Major Findings

This study investigated project management practices at the Ethio telecom fixed Network infrastructure upgrading projects that are deployed in South West Addis Ababa zone (SWAAZ). The key findings are include:

- The findings of the study revealed Project initiation practices carried out in a highly effective manner and it is rated high with a mean score of 3.66 and Standard deviation of 0.532 . The process excels at defining project objectives, scope, timeline, and budgets.Opportunities for improvement exist in stakeholder identification, communication planning, and feasibility analysis. These areas could benefit from more focused efforts for optimal project initiation. There is a moderate level of attention given to potential risks during project implementation, indicating a need for further development.
- Project planning process is practiced at a high level with 3.67 mean score and 0.57 standard deviation, signifying a robust framework and structured approach. However, the preparation of detailed communication plans and risk management plans is rated at a moderate level, indicating areas for potential improvement.
- Project execution practices within the organization are functioning at a moderate with 3.15 mean score and 0.735 standard deviation.The low attention to preparing proper risk management plans leads to poor risk mitigation and response during project execution. However, dealing with risks according to the risk response plan is rated low. Project execution practices within the organization are functioning at a moderate level, activities such as project implementation, task and deliverable progress, contract and vendor management, and handling changes via formal requests are rated high.
- The monitor and control practice is rated at a moderate level with 3.29 mean score and 0.814 standard deviation. Some project activities in this process group, such as tracking

key performance indicators related to cost, time, schedule, quality, and scope, conducting quality control, and effectively implementing corrective action plans, are rated as High, while the rest of the project activities are rated moderate.

- The project's closure process rated at a higher level with 3.48 mean score and 0.737 standard deviation.It is executed with great attention to detail, ensuring that project deliverables are completed and approved by stakeholders, accurately measuring project success, and generating a thorough project closure report are all highly valued. However, documenting lessons learned from projects is only considered moderately important. There are inconsistencies in the documentation procedures within the organization, leading to minimal use of recorded data and lessons learned for decision-making, evaluating challenges and achievements, and sharing experiences among staff.

5.2. Conclusion

This descriptive study investigated project management practices employed in fixed broadband network infrastructure upgrade projects under the SWAAZ initiative at Ethio Telecom. Utilizing a mixed-methods approach that combined qualitative and quantitative data collected through questionnaires, revealed valuable insights.The findings highlight the effectiveness of management practices, particularly in areas of project initiation, planning, and closure. These processes are consistently rated highly, suggesting a strong foundation for project execution within the SWAAZ initiative.However, the research also identifies opportunities for improvement in project execution and monitoring & control processes. While these areas are rated moderately, there's room for optimization to ensure consistent success in project delivery.The study also identifies the gaps identified in each process group which includes Inadequate Risk Management is critical weakness lies in the lack of proper risk identification and planning at the early stages. Additionally, a detailed risk management plan seems to be missing. This exposes projects to unforeseen challenges and hinders effective mitigation strategies. Several aspects of project execution also require improvement. Inefficient resource allocation, underdeveloped team dynamics, and communication gaps between team members, stakeholders, and the project manager could lead to inefficiencies and delays. Furthermore, the ability to handle encountered risks according to response plans seems inadequate .conflict resolution also appears to be practiced poorly Finally the research identifies the project doesn't seem to effectively

capture and document lessons learned which is a valuable knowledge base that could enhance future project execution.

5.3. Recommendation

In order to improve the project management practice within Ethio-telecom's , the following possible recommendations are provided by the researcher:

- Implement a project management training program for both supervisors and team members in order to create strong foundation project management.
- Create an understanding of effective risk management management ,efficient resource allocation mechanisms, effective communication management ,effective team development techniques, effective issue identification, deviation management and also importance of documenting and disseminating project insights for future improvement.
- Establish a separate PMO specifically dedicated to managing all projects conducted within the zone. This PMO can provide support and guidance to project teams throughout the project life cycle.
- During the implementation of each project management process group, ensure a strong emphasis is placed on the following activities integrate a robust risk management plan into each project, including risk identification, mitigation strategies, and response strategies.
- Establish clear communication plans that define communication channels, frequency, and roles for all stakeholders.
- Implement effective resource allocation strategies to ensure optimal utilization of resources throughout the project life cycle.
- Develop clear processes for addressing and resolving conflicts in a timely and productive manner.
- Create a standardized lessons learned document from each project and disseminate these insights throughout the organization for continuous improvement

5.4. Suggestion for Future studies

This study was focused on very limited points due to time, resource and methodological constraints. Thus, it is highly recommended if future researches in which this research constrained to cover them investigate the effect of Project process groups on the performance of the organization, the effect of comprehensive risk management practices on

project success,research the influence of communication strategies on team collaboration, information sharing, and project performance ,and investigation of tools and techniques used in each process groups activities.

Reference

Ahmad, N. R., Phoksawat, K., & Lertkrai, P. (2021). Tourist satisfaction in Nakhon Si Thammarat province, Thailand: a comparative study. *Asia Social Issues*,

Alvi, M. (2016). *A manual for selecting sampling techniques in research. MPRA Paper. https://ideas.repec.org/p/pra/mprapa/70218.html*

Anbesse, M. (2017). *Assessment On Performance And Challenges Of Ethio Telecom Infrastructure Expansion Project Implementation, Monitoring And Evaluation.*

Anyona, O., & Yusuf, M. (2022). P*roject integration practices and implementation of fiber rollout programme in nairobi city county, kenya.*

Attarzadeh, I., & Ow, S. H. (2008). *Project management practices: The criteria for success or failure. Communications of the IBIMA, 1(28), 234-241.*

Bently,C.(2005). PRINCE2revealed.In Routledge eBook. https://doi.org/10.4324/9780080458823

Berkun,S. (2005).*The art of project management*. https://doi.org/10.1145/1402521.1413139

Borga ,B. D. (2020). Assessment of project management practices in case of Bank of Abyssinia PMO IT projects.

Brandon, D. M. (2005). *Project management for modern information systems*. IGI Global.

Carstens, D. S., Richardson, G., & Smith, R. B. (2016). *Project management tools and techniques: A Practical Guide*. CRC Press

Charvat, J. (2003). Project management methodologies: selecting, implementing, and supporting methodologies and processes for projects.

Cooper, & Schindler, N. (2014). *Business research methods.Mcgraw-hill.*

Creswell, J. W. (2013). *Research Design (International Student Edition): Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications, Incorporated.

Creswell, J. W., & Clark, V. L. P. (2007). *Designing & Conducting Mixed Methods Research:The Mixed Methods Reader (bundle)*. SAGE Publications, Incorporated.

de Andrade, P. R. M., & Sadaoui, S. (2018). Survey questions for a study of the project management behavior in the IT sector.

Duncan, W.R. (1996). *A guide to the project management body of knowledge. Upper Darby, PA: Project Management Institute*.

Egboga, I., & Taiwo, E. (2021). Project Risk Mitigation and Project Execution in the Nigeria Oil and Gas Industry.

Ethio telecom, 2015. Ethio Telecom 2015 EFY (2022/23) Annual Business Performance.

Feigenbaum, A. V. (2002). *Total Quality Management. In J. J. Marciniac (Ed.), Encyclopedia of Software Engineering. London: John Wiley & Sons.*

Fernandes, G., Ward, S., & Araújo, M. (2013). Identifying useful project management practices: A mixed methodology approach. International Journal of Information Systems and Project Management, 1(4), 5-21.

Flouris, T. G., & Lock, D. (2008). *Aviation project management*. Routledge.

Fraz, A. (2016), Effect of Project Management Practices on Project Success in Make-to-Order Manufacturing Organizations. Indian Journal of Science and Technology,9(21).

Gray, C. F., & Larson, E. W. (2008). *Teacher's Manual to accompany Project Management: The Managerial Process, Fourth Edition*.

Haftom, M. (2019). Assessment Of Project Management Practices And Challenges: The Case Of Telecom Expansion Project (TEP) In Ethio telecom.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis 7th Edition.*

Islam, S., Bhuiyan, N. U., & Hoque, M. (2011). *The association between project success and project initiation phase: a study on some selected projects in Bangladesh. European Journal of Bussiness and Management, 3(12), 60-68.*

Kamau, T. (2013). Information Technology project management methodologies and Information Technology projects performance in Kenyan commercial banks .

Kariuki, M. N. (2022). Project Management Practices and Performance of Financial Technology Projects in Nairobi, Kenya.

Kerzner. H. (2009). *Project Management, A Systems Approach to Planning, Scheduling and controlling, (10th edition). New York: John Wiley & Sons.*

Kinfe , A. A. (2018). Assessment of Telecom Project Implementation Practices in Ethiopia: The case of Telecom Expansion Project.

Kothari, C. R. (2004). Research methodology: Methods and Techniques. New Age International.

Kuster, J., Huber, E., Lippmann, R., Schmid, A., Schneider, E., Witschi, U., & Wüst, R. (2015). *Project Management Handbook*. Springer

Larson, E. W. & Gray, C. F. (2011). Project Management: the Managerial Process, 5th edition. New York: McGraw-Hill Companies.

Lawani, A., & Moore, D. (2016). Project management practices in government organizations of developing countries: a systematic review. The international journal of business and management, 4(9).

Madyibi, A. (2019). A Project Governance Model for the Provincial Broadband Project: the Case of the Eastern Cape Province (Doctoral dissertation, North-West University (South Africa)).

Meredith, J. R., Shafer, S. M., & Mantel, S. J., Jr. (2021). *Project management: A Managerial Approach*. John Wiley & Sons.

Metaferia, M. (2021). Assessment of Practice and Challenges of Project Planning in Ethio Telecom

Morris, P. W. G., & Pinto, J. K. (2007). *The Wiley Guide to Project, Program, and Portfolio Management*. John Wiley & Sons.

Muute, N. C., & James, R. (2019). *Project planning practices and performance of construction projects in Nairobi City County, Kenya.*

Nasser, M. (2019). Assessment of IT Project Management Practice in Commercial Bank of Ethiopia

Ofori, D. F. (2013). *Project management practices and critical success factors-A developing country perspective. International journal of business and management, 8(21), 14.*

Patanakul, P., Iewwongcharoen, B., & Milosevic, D. (2010). *An empirical study on the use of project management tools and techniques across project life-cycle and their impact on project success. Journal of General management, 35(3), 41-66*.

Project Management Institute. (2017). A Guide to the project management body of knowledge (PMBOK® guide) (6th ed.).

Project Management Institute. (2021).The standard for project management and a guide to the project management body of knowledge (PMBOK guide) (7th ed.).

Ross, S. (2011). FTTH: Life After the FIOS Build. Broadband Communities, 32, 34-40.

Russell D. Archibald (2004). The Importance and value of project management for enterprises and institutions. Forum w Europie Warszawa, Poland : Project Management Institute, Inc.

Schwalbe, K. (2015). *An Introduction to Project Management, Fifth Edition: With a Brief Guide to Microsoft Project 2013*.

Sharma, G. (2017). Pros and cons of different sampling techniques. International journal of applied research, 3(7), 749-752

Tasevska, F., Damij, T., & Damij, N. (2014). *Project planning practices based on enterprise resource planning systems in small and medium enterprises—A case study from the Republic of Macedonia. International journal of project management, 32(3), 529-53*

Tereso, A., Ribeiro, P., Fernandes, G., Loureiro, I., & Ferreira, M. (2019). *Project management practices in private organizations. Project Management Journal, 50(1), 6-22.*

Van Der Merwe, A.P. (2002). Project Management and Business Development: Integrating strategy, Structure, processes and projects. *International Journal of Project Management*, 20(5), pp. 401–411. doi:10.1016/s0263-7863(01)00012-6.

Verner, J. M., & Cerpa, N. (2005). *Australian software development: what software project management practices lead to success?. In 2005 Australian Software Engineering Conference (pp. 70-77). IEEE.*

Williams, M. (2008). *The principles of project management (1st ed.). SitePoint ; O'Reilly distributor.*

Zerihun , B. (2020). *Assessment of Project Management Practices: A Case of Ethiopian Construction Design and Supervision works corporation*

Zid, C., Kasim, N., & Soomro, A. R. (2020). *Effective project management approach to attain project success, based on cost-time-quality. International Journal of Project Organization and Management, 12(2), 149-163.*

APPENDIX

Questionnaire And Interview

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

MASTER OF PROJECT MANAGEMENT PROGRAM

Dear Sir/Madam,

I am a project management student at AAU undertaking a research titled “Assessment of Project Management Practice in Fixed Broadband Network Upgrade Projects. A Case Study of Ethio-telecom, South West Addis Ababa Zone ” for the partial fulfillment of the requirement of Master of Arts (MA) degree in Project Management.

This survey is part of academic research that aims to assess the current level in project management practice and assess the contribution of project management practices on successful implementation of network upgrade projects.The data presented will function as the primary source of information for the study, anticipating that the input from participants will notably enrich the study's findings in terms of quality and depth. The researcher respectfully requests your cooperation in completing the questionnaire with utmost honesty, as the confidentiality of your responses is assured, and it will be exclusively utilized for the purposes of the current research investigation.

Thank you in advance for for your priceless cooperation.

Kind Regards

Meaza Gebretsadik

Mobile: +251912022015

Email: Meaza38@gmail.com

Direction

- Please do not write your name.
- Please read each question carefully and provide your honest responses.
- Please put " √ " mark or circle your preferred choice.
- For multiple-choice question please select the option that best represent your opinion.
- If the question does not apply to you please feel free to select N/A.
- For open ended question please write as much detail as you would like.

PART I:General information Information

1. Gender O Male O Female
2. Age O 20-30 O 31-40 O 41-50 O 51-60
3. Education background: O High School Completed O Diploma
   O Bachelors Degree O Master's Degree

   if other, please specify _____
4. Field of study _____
5. Work experience (in years) _____
6. Current position _____
7. Experience on projects (in years)_____
8. Please do specify if you previously engaged in projects other than Ethio-telecom's _____
9. Have you ever had project management training given by Ethio-telecom?

O Yes O No

If yes, please specify the type of training you received and the duration

_____

_____

10. Do you have a formal training outside the organization?In project management

O Yes O No

If yes, please specify the type and duration of the training

_____

11. What Size of Telecom Infrastructure Upgrade projects you are involved in?

O Small Size

O Medium Size

O Large Size

12. What Type of Telecom projects you are involved in?

O Traditional ODN Expansion

O Quick ODN Expansion

O New OLT installation

O Rehabilitation and relocation

O As built

O Migration

Other,Please do specify _____

PART II: General information on project management of the organization.

1. Which of the following do you think are major challenges to the Projects in your organization? (select all that applies to)

Internal Factors

O Inadequate Project planing

O Resource Constraint

O Time , cost and quality constraints.

O Clarity on the scope of the project

O Poor communication

External Factors

O Environment

O Government

O Economic condition

O Competitive environment

O Dependence on Suppliers and vendors

O Lack of skilled manpower

O Lack of proper training

2. Please Rank the following in order of their effect on projects in your organization.

Rank	Internal Factors	External Factors	Rank
	Inadequate Project planing	Environment	
	Resource Constraint	Government	
	Time , cost and quality constraints	Economic condition	
	Clarity on the scope of the project	Competitive environment	
	Poor communication	Dependence on Suppliers and vendors	
	Lack of skilled manpower		
	Lack of proper training		

3. Is there a project management training access in the organization?

O Yes O No

4. If your answer on Question number (3) is yes, how often?

O Monthly O Quarterly O Semi-annually O Yearly

5. Does the organization has a historical data of projects?

O Yes O No O Not Sure

6. What do you think is your company's project management practice in terms of project success?

O Very successful O Successful O Fairly O Not Successful

PART III: Questions related to the five process groups of Project Management (Initiation, Planning, Execution, Monitor & Control and Closure) according to the PMBOK.

Based on your experience of project management in your organization, please respond to what extent do you think the following factors listed under each project management process groups are being practiced in your organization.

(5=Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree)

I. Project Initiation						
No	Indicators	5	4	3	2	1
1	Project objective are clearly Defined					
2	Project Scope,time and budgets are clearly Described					
3	Proper description of risks that might be encountered are identified					
4	Proper Stakeholder Identification and communication is made					
5	Proper Feasibility study is conducted					
II. Project Planning						
No	Indicators					
1	Detailed project plan that describe how to implement the project is developed					
2	Detailed project Schedule plan is developed					
3	Detailed resource management plan is developed					
4	Detailed cost management plan is developed					
5	Detailed Quality management plan is developed					

	after identification of quality targets					
6	Detailed communication plan for all bodies is developed					
7	All the activities of the project are defined and documented					
8	Appropriate Work breakdown structure (WBS) is created					
9	Detailed risk management plan is developed					
10	Detailed procurement management plan is developed					
11	Detailed Stakeholder management plan is developed					
III. Project Execution						
No	Indicator	5	4	3	2	1
1	Effective project implementation as per the project plan					
2	Effective project progress on project tasks and deliverable as per the project plan					
3	Efficient utilization of resources					
4	Effective team development for better team performance					
5	Effective communication among team member ,stakeholders and project managers					
6	Effective Quality assurance					
7	The risks encountered are dealt with and treated according to the risk response plan					

8	Effective management of contracts and vendor relationships as per procurement plan					
9	Effective change handling based on formal change requests on scope,Schedule,budget					
10	Effective and timely resolution of issues and conflicts					
IV. Project monitoring and control						
No	Indicators	5	4	3	2	1
1	Effectively Monitoring and controlling the project progress based on the project plan					
2	Effectively tracking key performance indicators related to cost,time, schedule,quality and scope					
3	Effectively assessing and analyzing new and documented project risks					
4	Effective issue identification or deviation from plan					
5	Effectively monitoring the allocation of resources and the utilization					
6	Effectively Controlling changes					
7	Effecively performing quality control so that it does not become below the stated quality targets					
8	Effective Administration of the procurement according to the contracts					
9	Effectively Monitor and control the communication					
10	Effective corrective action plan is implemented					
V. Project closure						

No	Indicator	5	4	3	2	1
1	Effective verification of that all project deliverable successfully attained and accepted by stakeholders					
2	Proper project success measurement is conducted					
3	Proper documentation of lessons learned from the projects is observed.					
4	Proper project closure report is prepared					

---------- ThankYou ----------

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

Master of project Management program

Research Interview Questions

Dear Sir/Madam,

I am a project management student at AAU undertaking a research titled “Assessment of Project Management Practice in Fixed Broadband Network Upgrade Projects. A Case Study of Ethio-telecom, South West Addis Ababa Zone” for the partial fulfillment of the requirement of Master of Arts (MA) degree in Project Management.

This Interview is part of academic research that aims to assess the current level in project management practice and assess the contribution of project management practices on successful implementation of network upgrade projects.The data presented will function as the primary source of information for the study, anticipating that the input from participants will notably enrich the study's findings in terms of quality and depth. The researcher respectfully requests your cooperation in completing the interview with utmost honesty, as the confidentiality of your responses is assured, and it will be exclusively utilized for the purposes of the current research investigation.

Thank you in advance for for your priceless cooperation.

Kind Regards

Meaza Gebretsadik

Mobile: +251912022015

Email: Meaza38@gmail.com

I. **General Question**

1. What is your responsibility in the organization?

_____

2. What is your academic background?

_____

1. Is there separate project management department in your organization?

2.Is there separate project management department Dedicated to the zone?

3.Does the company has a formal Project management Approach ?

4.Is there a historical Project data?

5.How do you document lessons learned from the projects ?

6.How good is the communication and collaboration between your team members, stakeholders?

II. Questions to Project management expert

III. Question for supervisors in the zone

1. How satisfied are your team members with the level of training and support they receive for the tasks they perform in the expansion project?

2. How good is the communication and collaboration between your team members, stakeholders, and yourself as the supervisor?

3. Are you satisfied with the timeline of the installation ?

4. Are you satisfied with the resource allocation process?

5. What are the major challenges you encounter while implementing projects?

---------- Thank you!! ----------