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Addis Ababa University



**Addis Ababa University  
School of Commerce  
Project Management Program**

**Assessment of the Challenges of Risk  
Management Implementation  
in ethio telecom, Telecom Expansion Program  
(TEP)**

***A Project Work Submitted to the Department of Business  
Administration and Information System as a Partial Fulfillment  
of the Requirements for the Award of Master of Art Degree in  
Project Management***

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**Advisor: Fisseha Afework (Asst. Prof.)**

**June, 2018**

**Addis Ababa, Ethiopia**



ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE  
DEPARTMENT OF BUSINESS ADMINISTRATION AND  
INFORMATION SYSTEM (BAIS)  
GRADUATE PROGRAM UNIT  
PROJECT MANAGEMENT PROGRAM

***Assessment of the Challenges of Risk Management  
Implementation  
in ethio telecom, Telecom Expansion Program (TEP)***

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## DECLARATION

I, Daniel Kebede, declare that this thesis entitled ' Assessment of the Challenges of Risk Management Implementation in ethio telecom, Telecom Expansion program ' is my own original work. It contains no material which has been accepted for the award of any other degree of the university or any other institution of higher learning. All sources of materials used for the research paper have been duly acknowledged.

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## ENDORSEMENT

This thesis entitled ' Assessment of the Challenges of Risk Management Implementation in ethio telecom, Telecom Expansion program ' has been submitted to Addis Ababa University School of Commerce, Department of Project Management, with my guidance and approval as a university advisor.

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Signature & Date

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# ACRONYMS

BAIS: Business Administration & information system

ERM: Enterprise Risk Management

OSPMI: Office of statewide Project Management Improvement

PMBOK: Project Management Body of Knowledge

PMI: Project Management Institute

PMA: Project Management Academy

RM: Risk Management

RMP: Risk Management Plan

PIX: Probability and Impact Matrix

SPSS: Statistical Package for Social Science

TEP: Telecom Expansion Program

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## ABSTRACT

*The development of a stronger risk culture across the whole organization offers greater benefits. Such a risk culture would mean tackling a number of current challenges. Make everyone responsible for managing risks and for everyone to take accountability for doing so, so that the management of risk becomes an everyday, whole-company approach. If people are to be empowered to manage risks then the next challenge is to train and educate people within the organization so that they have the tools and the skills to manage risks that they face. This includes general risk management awareness training for everyone, with more specialized risk and opportunity management training for those who deal with specific types of risk, whether financial, security, project, safety, or other. The purpose of this study is to assess challenges of risk management implementation in Telecom Expansion Program of ethio telecom. The program's risk management implementation is assessed in line with the five risk management processes of; planning, identification, analysis, response and monitoring. Questionnaire was developed based on each risk management process and distributed to 40 respondents. The data obtained from the questionnaire was analyzed quantitatively using SPSS software and the data collected from interview were analyzed qualitatively. The quantitative data were presented using tables, graphs & charts and the qualitative data was used to support and elaborate the quantitative data. From the quantitative and qualitative data it was found that the program gives the utmost attention for risk management and included risk management in the program's plan. Risks arise at each stage of the program were managed throughout the program lifecycle. Risk analysis and monitoring was performed well in the program whereas risk identification is not performed exhaustively. The main challenges resulting from the study was: lack of risk expert to lead RM team, lack of practical experience, lack of risk knowledge and information and low level of awareness among stakeholders. Lack of risk management expert to lead RM is observed persistently in every stage of risk management. To overcome the challenges mentioned above and to enjoy the benefits of good risk management, the researcher suggested: ownership and accountability of risks must be created among stakeholders through allowing them to have a part on risk management process. The company must see other options to get a skilled manpower to handle its future risks. On the top of these, intensive risk management awareness creation training must be provided to everyone to enhance the risk management culture.*

**KEYWORDS:** *challenges, implementing, risk, risk management.*

# CHAPTER ONE

## 1. INTRODUCTION

### 1.1 Background of the Study

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project. The objectives of project risk management are to increase the likelihood and impact of positive events, and decrease the likelihood and impact of negative events in the project. (PMI, 2017)

Research shows that risk has the lowest maturity rating of all project management knowledge areas. The key reason for this lies in the complexity of the risk concept: risk deals largely with uncertainty, it can be positive and or negative with the former potentially yielding large rewards, there are causes and consequence for the project if risk is managed poorly, and the risk continuum ranges from known to unknown. It's no wonder that project managers are increasingly focusing their attention on risk identification and management to prevent project failure.

A contribution to effective project risk management is to identify risk issues that will become important in the foreseeable future. They are defined as key issues, requiring special attention in every project management life cycle. This may be due to the increasing importance of the issue to the success of a project, not understanding the nature of the issue due to its complexity, continued difficulty in managing the issue, and changes expected in the nature of the issue. The existence of emergent risk is becoming clear, with a growing awareness of so-called unknowable-unknowns. These are risks that can only be recognized after they have occurred. (PMI, 2017)

Hence, risk management requires beyond establishing the system of risk management rather it will require your team's full attention to anticipate in advance before the actual risk materialized.

According to Thomas W. Grisham (2010) if we take a risk plan as a mini project we will have the idea. If the risk occurs, all that remains to be done is to implement the plan. This means the risks need to be integrated into the schedule, budget, and scope of the project—

transparently and purposefully. Unless to you integrate risk management on your schedule, budget and cost you may not be able to take any proactive measure on the risks that will impact your project objective. So making risk management as much as possible integrated with your schedule, cost & scope will enable you to take a corrective action instantly during its occurrence.

Experience clearly indicates that using a formal, structured process to handle possible foreseen and unforeseen project risk events minimizes surprises, costs, delays, stress, and misunderstandings. It means if you follow strictly risk management policies designed for each specific case you or your team members will not be lost for a solution finding for each and every risk when it happens. Risk management is an iterative process that occurs throughout the lifespan of the project. When risk events occur or changes are necessary, using an effective change control process to quickly approve and record changes will facilitate measuring performance against schedule and cost. Ultimately successful risk management requires a culture in which threats are embraced not denied and problems are identified not hidden. (*Project management: the managerial process 5th ed.*)

From prior studies conducted in the topic almost all studies were conducted only through focusing on describing the risk management practices of their respective study area, they didn't try to see beyond the risk management practices of the projects. Frezewd (2016), Bereket (2017), Kalkidan (2017) and Lidya (2017) with the same concluding remark they observed absence of procedural manual that serve as a guideline and in association with risk management practices everybody's research finding reveal that risk management is found to be poorly practiced. And also from their conclusion in each project the attention were given only for risk identification they didn't go beyond risk identification, in one way or other the project owners didn't design mitigation strategy for the identified risks.

In general they lack comprehensiveness on their study describing the process only can't take anywhere rather looking for the factors will enable us to develop our knowledge in the area. Challenges of the area were related to: availability of skilled man power in the area, absence of alternative trainings in the core area of risk management, company's level of risk culture, top managements support and assumption about risk, budget allocation for risk management and absence of consulting firm in the area and absence of company to be taken as benchmark are few of the challenges that hinder the project risk management practices of every project nowadays in our country. As it was cited by Liliana& Nadia (2017) Aspects such

as establishing a risk function, a corporate culture (cultural capacity for openness), finding a proper ERM framework, technical challenges related to risk management process (lack of quality data or limited access to data, lack of an appropriate technique or combination of techniques for risk identification and analysis), lack of risk knowledge and risk awareness at lower levels, not linking risk to overall corporate strategy, can be strong barriers to risk management implementation.

Hence this research tries to get an insight what others miss and try to see beyond the practices of risk management and checked the challenges of risk management implementation observed. The Researcher conducted the study through aiming to assess challenges observed during risk management implementation in ethio telecoms' Telecom Expansion Program (TEP) and acquired an insight of the company's risk management implementation challenges and also through analyzing the gap based on the findings of the study the researcher forwards his recommendation for future risk management of the company .

## **1.2 Background of ethio telecom (TEP)**

ethio telecom is a sole telecom operator in Ethiopia established as a public enterprise on 2010 as per the Council of Ministers Regulation No. 197/2010. The company aims to provide next generation network services based on a world class standard information technology services and to build a competent next generation network-based workforce with appropriate knowledge, skill, attitude, and work culture.

Since its establishment as ethio telecom, the company has registered several accomplishments required to transform the company to a level expected from a competent and modern telecom service provider. So far, it has availed full range of coherent telecom Products and Services for all markets and segments, undertaken high level capacity building programs within very short period of time, tried to curb recurrent quality of service problems, launched the first professional Call Centre in Ethiopia.

As a continuation of the 2005/06-2009/10 five-year plan and after concentrating its efforts on education, health and agriculture, the Ethiopian government has decided to focus on the improvement of telecommunication services, considering them as a key lever in the development of Ethiopia. ethio telecom was established in 2010, with the ambition of supporting the steady growth of our country, within the Growth and Transformation Plan (GTP).

Meanwhile in 2011, ethio telecom has acknowledged the importance of risk management in order to see risks that are not apparent to project related and operational activities, provide insights and support for both functional and project managers, to build a secured and better telecom infrastructure and systems and ensuring business continuity. As a result, the company has established risk management as a department, which is in charge of establishing both project and operational risk management planning, identification, response and monitoring and control activities. Furthermore, the company has developed risk management policy manual that will be used at different levels of the organizational structure and gives insight and guidance to the different risk identification and mitigation strategies. The policy manual addresses all types of risks in terms of their nature, source or their consequences which have an impact in the project and on the organization.

For the analysis of project risk management practice & challenges of the company, the Telecom Expansion Program have been selected as the focus of the researcher and the researcher assessed its practices and challenges in line with planning risk management, risk identification, analysis, risk mitigation strategies and that of monitoring employed in the program.

The telecom expansion program is launched to achieve the telecom sector objectives in the growth and transformation program defined by the government of Ethiopia with a total project cost of 1.6B USD in June 2013 G.C. The program was mainly induced to solve the problem in telecom coverage, capacity challenges and to improve quality of service. Specific objective of the program was:

- To upgrade mobile network capacity from 36 million to 56 million customers
- provide 6M capacity wireless broadband services
- Build a high capacity mobile and fixed backhaul
- Swap the legacy network systems

The program was implemented through three vendors (Ericson, Huawei and ZTE) with vendor financing strategies. The program was divided into five lots and rolled out in three phases using a matrix structure combining both internal and external (vendors) expertise. Initially the program was expected to be finalized within two years period; where the overall program takes more than four years to finalize currently it's on the finalization stage.

## 1.3 Statement of the Problem

Every project is risky, meaning there is a chance things won't turn out exactly as planned. Project outcomes happen as a result of many things, including some that are unpredictable and over which project managers have little control. Risk level is associated with the certainty level about technical, schedule, and cost outcomes. High certainty outcomes have low risk; low certainty outcomes have high risk. Certainty derives from knowledge and experience gained in prior projects as well as from management's ability to control project outcomes and respond to emerging problems.

Today many organizations are working in projects and in order for a project to be successful, proper risk management implementation is an essential part of project management. As with life, projects are risky and every organization should strive to have an effective project risk management process in order to identify and manage risks. Every project involves risk and every project needs to have a management strategy for dealing with threats and opportunities represented by each risk. It means there will be both threats and opportunities emanated from risk, it is a common thought of people seeing the risks down side only through associating it to the negative impact that have in every aspects but risk have also positive impact on the project's performance.

However due to its nature of complexity, many of the projects are not easy to execute and every project is influenced by risks. Its complexity may not only come from its nature rather the process, personal and the systems used have increased its complexity. In order to achieve the project objectives it is important to minimize mistakes and create a basis for well-conditioned decisions. To achieve this, project management requires a well based risk management process, which can be used to minimize or optimize a risk that is any uncertainty that can affect project objectives. In order to be beneficial of identifying uncertainties it is important that knowledge and information is shared within the organization making risk management a cross-functional discipline (Chapman & Ward, 2011). Unless the risk management culture internalized in the project team and stakeholders, effectiveness of risk management tools will be questionable and it should be known by everybody in the project.

Some projects perform many of the risk management activities at the early stage of the project life cycle. In such scenario you may have the opportunity to reduce or even to avoid



that particularly project due to its impact without incurring much cost. To be successful, an organization should be committed to address risk management proactively and consistently throughout the project. A conscious choice should be made at all levels of the organization to actively identify and pursue effective risk management during the life of the project. Project risk could exist at the moment a project is initiated. Moving forward on a project without a proactive focus on risk management is likely to lead to more problems arising from unmanaged threats (PMI, 2017).

Although, new risks may become known as the project progresses through its life cycle and previously identified risks may drop out. In that I mean that managing risk is not a onetime activity rather it will require your full attention to cope up the ever changing risky situations and it could be a tough task but an essential one. Hence, this will make project risk management process more challenging. In addition to these the risk management system of the project and the risk attitude of the project owner will have an adverse effect on the successful risk management process. According to (PMI, 2017), In order to manage risk effectively on a particular project, the project team needs to know what level of risk exposure is acceptable in pursuit of the project objectives. This is defined by measurable risk thresholds that reflect the risk appetite of the organization and project stakeholders. Risk thresholds express the degree of acceptable variation around a project objective. No amount of planning can overcome risk, or the inability to control chance events. In the context of projects, risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on project objectives (Project Management the Managerial Process. 5<sup>th</sup>ed). (2011)

From prior studies conducted in the topic the researcher understood that risk management was poorly practiced, even if very limited studies conducted in the area they attested that the non-availability of manuals in the project and low level of risk management culture in the projects are common. Frezewd (2016), Bereket (2017), Kalkidan (2017) and Lidya (2017). In general they try to see project risk management practices of their respective study in connection to the theoretical aspects of project risk management. The researcher on this study will try to look a bit further ideas on the challenges of project risk management implementation in addition to investigating project risk management practices of the program. ethio telecom have a strong system to manage its risk which was developed by France telecom during the period when the company was under contract management, but due to

different factors which are related to personnel, risk management culture e.t.c has not yet exploit the benefit of good risk management at its full capacity. From the preliminary interview conducted with the company's Risk management department manager, I understood that the company has a strong system for risk management but he believes that we didn't exploit its benefit yet. With same talk he also list out the major challenges that hinder risk management implementation as: absence of skilled manpower in the area of risk management, absence of prior experience in the area, absence of independent budget for risk management, limited attention given to risk management by top management, absence of institutions offering a training on risk management, low level of awareness about risk and also he mentioned boldly the absence of organization in the country to set as a benchmark for experience sharing.

Despite having a proper risk management system your organizational culture, assumption about risk and risk management awareness level of your team member will largely affect the risk management process. So balancing among these things is the challenges that confront the project managers in today's project management environment but if you able to balance between them it will allow you to come up with effective risk management process.

This research was supposed to identify and assess project risk management implementation challenges exist in the company, particularly Telecom Expansion Program. This study focus on this program to gain a better understanding of what the practice is look like and to investigate implementation challenges exist within each risk management processes of planning, identification, analysis, response and monitoring. Based on the findings the researcher try to forward points to be considered in the future risk management endeavor of the company that will enable to utilize benefits of good risk management at its full capacity.

## **1.4 Research Questions**

- What is the current project risk management practice of ethio telecom, Telecom Expansion Program?
- What are the challenges that exist during planning, identification, analysis, response and monitoring process of risk management of Telecom expansion Program?
- How does the organization handle risk opportunities in managing its program?

Answering the questions mentioned above would enhance our understanding about the risk management practice and implementation challenges in ethio telecom and helps to design better risk management system in the company.

## 1.5 Objective Of the study

### 1.5.1 General Objective

The general objective of this research is to assess the practices of risk management implementation and its challenges in ethio telecom, that are presented while implementing risk management of telecom expansion program in particular as a focus of the study.

### 1.5.2 Specific Objective

Based on the general objective of the study and the research questions above, this study has the following specific objectives.

- To examine the current risk management practices of ethio telecom, telecom expansion program.
- To learn and draw common implementation challenges of risk management that could be encountered during planning, identification, analysis, response and monitoring process of risk management at Telecom Expansion Program
- To identify major gaps of risk management and make further recommendations for better Risk management.

## 1.6 Definition of Terms

According to Project Management Glossary of Terms (2007) and (PMI, 2017) most often used terms are defined as follow as:

- **Risk:** An uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives. Project Management Glossary of Terms (2007)
- **Uncertainty:** is a doubt as to the occurrence of a certain desired outcome.
- **Project Risks:** Factors that may cause a failure to meet the project's objectives. Risks may be associated with opportunities. Project Management Glossary of Terms (2007)
- **Residual Risk:** A risk that remains after risk responses have been implemented. Project Management Glossary of Terms (2007)
- **Risk Management:** An organized assessment and control of project risks. Project Management Glossary of Terms (2007)
- **Project Risk Management:** The process of identification, assessment, allocation, and management of project risks. Management Glossary of Terms (2007)
- **Risk Management Plan:** The document describing how project risk management will be structured and performed on the project. Management Glossary of Terms (2007)

- **Risk Management Planning:** The process of deciding how to approach, plan, and execute risk management activities for a project. Management Glossary of Terms (2007)
- **Risk identification:** The process of determining which risks might affect the project and documenting their characteristics. (PMI, 2017)
- **Risk Analysis:** An examination of risk areas or events to assess the probable consequences for each event (or combination of events in the analysis), and determine possible options for avoidance. Management Glossary of Terms (2007)
- **Risk control** is the method by which firms evaluate potential losses and take action to reduce or eliminate such threats. (PMI, 2017)
- **Risk Response Planning** is the process for developing options and actions to enhance opportunities, and to reduce threats to project objectives. Management Glossary of Terms (2007)
- **Risk Mitigation planning** is the process of developing options and actions to enhance opportunities and reduce threats to project objectives. (PMI, 2017)
- **Qualitative Risk Analysis:** The process of prioritizing risks for subsequent further analysis or action by assessing and combining their probability of occurrence and impact. Management Glossary of Terms (2007)
- **Quantitative Risk Analysis:** The process of numerically analyzing the effect on overall project objectives of identified risks. Management Glossary of Terms (2007)
- **Risk Register:** The document containing the results of the qualitative risk analysis, quantitative risk analysis, and risk response planning. Management Glossary of Terms (2007)
- **Risk Response:** Actions taken to enhance opportunities and reduce threats to the achievement of project objectives. (PMI, 2017)
- **Risk Monitoring and Control:** The process of tracking identified risks, monitoring residual risks, identifying new risks, executing risk response plans, and evaluating their effectiveness throughout the project life cycle. Management Glossary of Terms (2007).

## **1.7 Significance of the Study**

The findings and recommendations of this study could serve as an ingredient and be informative to the program under examination as well as to concerned bodies. It could also give a general insight to the academic & professional society regarding challenges of risk management aspects. Moreover, the study has the following significances:

1. It will provide information how risk management were implemented and lists all the observed challenges during risk management process.
2. Assist staffs and divisions to assess the strength and weakness of the area of risk management implementation.
3. Give rise to new idea to tackle those identified factors affecting the risk management process of the organization.
4. Serve as a reference material for those who wish to make similar study in the area.
5. Also serve as a stepping ground for further investigation on the area.

## **1.8 Scope of the Study**

To conduct such a research in the overall projects of the company is not a simple task that can be easily accomplished. It is also time and money consuming. It should, therefore controlled, managed and worth doing. Hence the researcher has delimited his study only to Telecom Expansion program of the company through focusing on those having relevant information in the study area. They are selected on the basis of relevance to the study and respondents' motivation towards project risk management and with a belief that different related problems might be observed on the risk management implementation.

## **1.9 Limitation of the study**

One of the limitations of this study was its heavily reliance only on the core processes of risk management processes. In addition if risk management implementation challenges and extent of their impact were further analyzed by cost, schedule and quality, the research may provide additional information as far as the relationship between each challenges of risk management and impact level in terms of cost, schedule and quality. Furthermore, the limited time available for the study and locating the respondents in their respective office location was a limitation for the researcher.

## **1.10 Organization of the Research Report**

The study is organized into five chapters. The first chapter deal with the introduction part which includes: - background, statement of the problem, objective of the study, significance of the study, scope and limitation of the study and organization of the paper. The second chapter will present the review of related literature, empirical literature review and that of conceptual framework of the study. The third chapter states Methodology of the Study validity and ethical consideration of the study. The fourth chapter of the research is composed of the tabulation, analysis, interpretation and findings of the data. Finally the fifth chapter brings to an end of the study with summary, conclusion and recommendation.

# CHAPTER TWO

## 2. LITERATURE REVIEW

### 2.1. Theoretical Review

This chapter will provide valuable insights about the concept of risk management by reviewing the existing theoretical and empirical literatures which has been serving as the bases of this study. This will enable to adopt the best approach and method to undertake the study of risk management implementation challenges.

#### 2.1.1. Overview of Project Management

##### What is project?

On its dictionary meaning project is a piece of planned work or an activity that is finished over a period of time and intended to achieve a particular purpose. Also business dictionary defined project as planned set of interrelated tasks to be executed over a fixed period and within certain cost and other limitations. A project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification (Wysocki 2014), on the same book he also define project from the point of business view as “project is a sequence of finite dependent activities whose successful completion results in the delivery of the expected business value that validated doing the project.”

Meanwhile, (PMI, 2017) & APM define project differently, (PMI, 2017) define a project as a temporary endeavor undertaken to create a unique product, service, or result. While APM defines it as an ‘endeavor in which human material and financial resources are organized in a novel way to deliver a unique scope of work of given specification often within constraints of cost and time to achieve beneficial changes defined by quantitative and qualitative objectives’. In this context temporary doesn’t necessarily mean short in duration; many projects last for several years; rather temporary means that every project has a definite beginning and a definite end.

Hence, from the definitions we can understand that every project has a definite start and end point & have its own purpose to achieve. This means a project is a onetime activity that has been undertake to meet once objective set prior to the start of the project and will end up when project objective met or the budget allocated. A repetitive job is not a project (Lewis

2011). We can't say everything done in an organization is a project we have to differentiate between process and project. Simply a process is something that happens as an ongoing activity with relatively less risk, whereas a project happens once and involves relatively a higher risk. An activity of the organization to be categorized as a project it should have definite starting and ending points (time), a budget (cost), a clearly defined scope or magnitude of work to be done, and specific performance requirements that must be met. Projects are undertaken at all organizational levels. A project can involve a single individual or a group. A project can involve a single organizational unit or multiple organizational units from multiple organizations.

As it was cited on The International Journal of Business & Management V.3, Issue 12 (2015), MPBOK Guide, (2008) states that many organizations define project according to their own understanding and conceptualization. However, all these varied definitions have uncertainty which is inherent in almost all projects due to a consequence of common shared features that characterizes these projects. These features include;

- Temporary nature: that has a defined beginning and an end and is constrained by scope, cost, time, and quality.
- Uniqueness – projects involve elements that are new and were never done before as mentioned above in the definitions. This implies that risk and uncertainty is naturally associated with such project.
- Complexity – different projects including technical, commercial, interfaces and/or relational vary in complexity due to size and resources required to be undertaken. These complex issues bring risks to projects.
- People – basically project is about people and it's a group of people who undertake project. This group of people includes project team, project manager, clients, customers, suppliers, contractors and subcontractors are unpredictable and may end up introducing risks and uncertainty into projects.
- Stakeholders – projects involve some dominant group of people who impose requirements, expectations and objectives on the project. These stakeholders may introduce risks at the time of project execution and acceptance either by giving conflicting and/or overlapping requirements.



- Change – all projects involves movement from the present known to the future unknown as they create changes. This movement from present to the future involves risks which is likely to affect the project outcomes.
- Assumptions and constraints – when defining project scope, it is always absolutely necessary to take guess as people make assumptions and design for the future under constraints. These assumptions and constraints may be misleading thus end up introducing risks and uncertainty into projects.

## What is project Management?

According PMI definition on (PMI, 2017) project management has been defined as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements.” Project management enables organizations to execute projects effectively and efficiently. This definition of project management does provide a good understanding of project management, but it does not help us understand project success. Other scholars *Jack Meredith and Samuel Mantel* discussed project management in terms of producing project outcomes within the three objectives of cost, schedule, and specifications. According to their view project managers are then expected to develop and execute a project plan that meets cost, schedule, and specification parameters.

Meredith and Mantel also defined project management by adding a fourth aspect of project management the expectations of the client, as project management is the application of Knowledge, skills, tools, and techniques to meet or exceed the expectations of the client. This definition focuses on delivering a product or service to the client that meets expectations rather than project specifications. It is possible to meet all project specifications and not meet client expectations or fail to meet one or more specifications and still meet or exceed a client’s expectation.

Whereas Wysocki (2014) defined project management as a set of tools, templates, and processes designed to answer the following six questions:

- ❖ What business situation is being addressed by the project?
- ❖ What does the business need to do?
- ❖ What will you do?
- ❖ How will you do it?

- ❖ How will you know you did it?
- ❖ How well did you do?

He also recommended that if you or your enterprise are designing a project management process, check its validity by answering these six questions as a base for your design.

To make it clearly understandable Wysocki (2014) defined project management as "an organized common-sense approach that utilizes the appropriate client involvement in order to meet sponsor needs and deliver expected incremental business value". Here, business value is the responsibility of the client through their requirements statements. The project manager is responsible for meeting those requirements. Meeting requirements is the cause and incremental business value is the effect.

As we come up with the definitions of what a project and project management mean we shall move to the next part which is about project management life cycle or process groups of project management.

A project life cycle is the series of phases that a project passes through from its start to its completion. It provides the basic framework for managing the project. This basic framework applies regardless of the specific project work involved. The phases may be sequential, iterative, or overlapping (PMI, 2017)

Wysocki on his book defines project management life cycle as a sequence of processes that includes:

- ✓ Scoping
- ✓ Planning
- ✓ Launching
- ✓ Monitoring and controlling
- ✓ Closing

the projects to which it applies. He believed that a valid PMLC always starts with a scoping process and ends with a closing process. All five of the processes must each be done at least once and may be repeated any number of times in some logical order. A project phase is a collection of logically related project activities that culminates in the completion of one or more deliverables (PMI, 2017)

## Project Management Knowledge Areas

According to (PMI, 2017), A Knowledge Area is an identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques. Although the Knowledge Areas are interrelated, they are defined separately from the project management perspective and a project manager must be knowledgeable in each project management area. Accordingly the ten knowledge areas identified in the (PMI, 2017) guide has been used in most projects are described as follow as:

**Project Integration Management:** Includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups. In the fundamentals of project management 4<sup>th</sup> edition and other books you may find it as startup & integration management. As the term implies, every activity must be coordinated or integrated with every other one in order to achieve the desired project outcomes.

**Project Scope Management:** Includes the processes required to ensure the project includes all the work required, and only the work required, to complete the project successfully. It also includes authorizing the job, developing a scope statement that will define the boundaries of the project, subdividing the work into manageable components with deliverables, verifying that the amount of work planned has been achieved, and specifying scope change control procedures.

**Project Schedule Management:** Includes the processes required to manage the timely completion of the project. As mentioned in the definition project undertakings are a temporary endeavor in which time is limited resource available for completion of the project. (Adrienne Watt 2014) The development and management of a project schedule is Primary responsibility of the project manager, and completing the project on time requires the development of a realistic plan and the effective management of the plan.

**Project Cost Management:** Includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so the project can be completed within the approved budget.

**Project Quality Management:** Includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements, in order to meet stakeholders' expectations.

**Project Resource Management:** Includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project.

**Project Communications Management:** Includes the processes required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and ultimate disposition of project information.

**Project Risk Management:** Includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project. This is the focus area of this study and we will see in detail in the subsequent part of the literature.

**Project Procurement Management:** Includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team.

**Project Stakeholder Management:** Includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

## 2.1.2. Risk and Risk Management Concepts

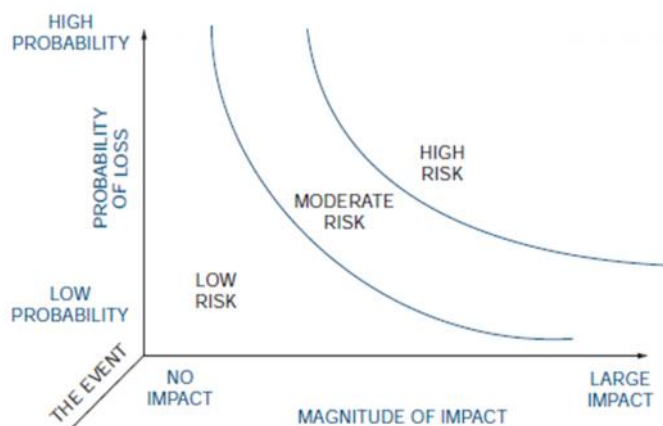
### What is Risk?

You may find different definitions of risk in different specialty areas as this study focus in project I used to define in the context of project management. A well-known scholar in the discipline of project management Wysocki (2014) define risk as some future event that happens with some probability and results in a change, either positive or negative, to the project. According to Paul Newton (2015) risk is future event that may or may not happen, but if it occurs it will have an effect on scope, schedule, budget or quality. Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on at least one project objective (OSPMI 2007). Risk is a measure of the probability and consequence of not achieving a defined project goal Kerzner (2013).

From the definitions we can understand that risk is always future event that has its own probability of occurrence as well as impact on the projects performance, the impact will take the form of positive or negative in a sense that if it occurs may create an opportunity for the project or it might be a threat. Risks are inherent in projects; no amount of planning can overcome risk, or the inability to control chance events Larson & Gray (2011). So every project will be exposed to some degree of risk as they operate in the dynamic environment whatever will your risk plan you will not be guaranteed for nonexistence of variation between what you plan and what actually happened. The main objective of risk management is only to reduce the impact through planning a strategy to mitigate. Project management scholars like Clarke, (1999) and Lock, (1996), argue that the main purpose of project management is 'to foresee or predict as many of the dangers and problems as possible and to plan, organization and control activities so that the project is completed as successfully as possible in spite of all the difficulties and risks'

Conceptually, the risk for each event can be defined as a function of probability and Consequence (impact);

That is, Risk = f (probability, consequence)



**Figure 1: Overall Risk**

**Source: Project Management a Systems Approach Harold Kerzner 10<sup>th</sup> Ed**

We can understand from the picture above as either the probability or consequence increases, the risk will also move in same direction. Both the Probability and consequence must be considered in risk management Kerzner (2013). In any circumstances a risk may be induced by the present or absence of something, we may donate this source of danger as

hazard as it was stated by Kerzner on his book he also states that we can overcome hazards to great extent by knowing them and taking action to overcome them. In which it will lead to the development of the second representation of risk:

$$\text{Risk} = f(\text{hazard}, \text{safeguard})$$

In this situation the risk will increase as the hazard increases but on the reverse risk will decrease as safeguard increases. If suitable safeguards are available, then the risk can be reduced to an acceptable level.

## **Project Risk Management**

Harold Kerzner, (2013), on his book described Risk management as the act or practice of dealing with risk. It includes planning for risk, identifying risks, analyzing risks, developing risk response strategies, and monitoring and controlling risks to determine how they have changed.

According to (PMI, 2017), Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project. The objectives of project risk management are to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks, in order to optimize the chances of project success. Hamilton, (1996) also define Project Risk Management 'aimed at reducing damages and loss, minimizing total cost of risk and identifying, controlling and limiting the effect of the risks'.

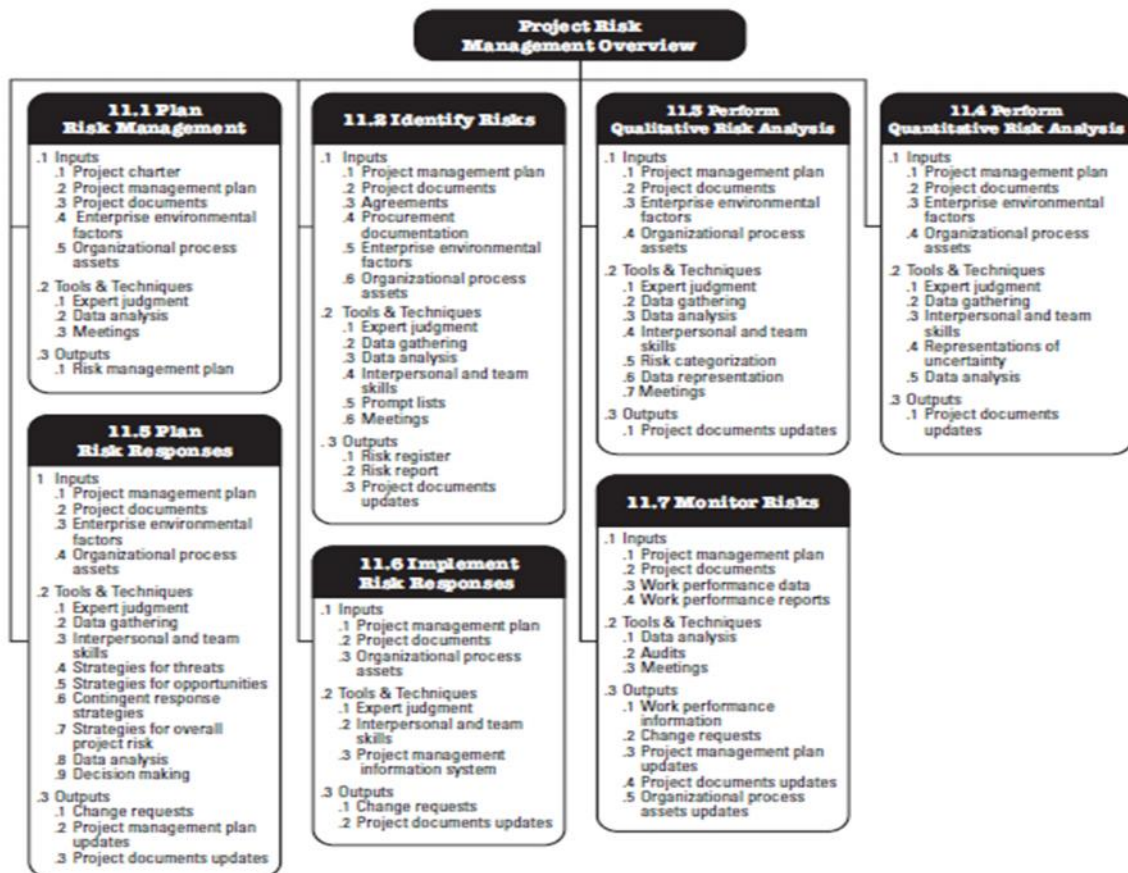
Project risk management is most effective when first performed early in the life of the project and is a continuing responsibility throughout the project's life cycle. Ideally we can't separate risk management from other project activity and are not able to locate responsibility only for project risk management office since, it requires everybody's involvement. Harold Kerzner (2013), states that Risk management is not a separate project office activity assigned to a risk management department but rather is one aspect of sound project management. On the same fashion he also describe Proper risk management is proactive rather than reactive, positive rather than negative, and seeks to increase the probability of project success.

## **Project Risk Management Process**

The issue of Project risk management process is one of the ten knowledge areas of project management in which a project manager competency is need to ensure project success

(PMI, 2017). Harold Kerzner (2009) believe that it is important that a risk management strategy be established early in a project and that risk be continually addressed throughout the project life cycle

According to (PMI, 2017) risk management process were consists of seven process such as ; risk management planning, risk identification, performing qualitative risk analysis, performing quantitative risk analysis, planning risk responses, implementing risk response and monitoring risks in order to determine how much they change and contribute towards project outcome.



**Figure 2: Project Risk management Overview**

SOURCE: (PMI, 2017)

The existence of risk can be leveled into two levels in every project according to (PMI, 2017) each project contains individual risks that can affect the achievement of project objectives. It is also important to consider the riskiness of the overall project, which arises from the combination of individual project risks and other sources of uncertainty. Project Risk

Management processes address both levels of risk in projects, and these are defined as follows:

- ❖ **Individual project risk** is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives. This kind of risk may have a positive or negative effect on project objectives if they occur. Project Risk Management aims to exploit or enhance positive risks (opportunities) while avoiding or mitigating negative risks (threats).
- ❖ **Overall project risk** is the effect of uncertainty on the project as a whole, arising from all sources of uncertainty including individual risks, representing the exposure of stakeholders to the implications of variations in project outcome, both positive and negative. Management of overall project risk aims to keep project risk exposure within an acceptable range by reducing drivers of negative variation, promoting drivers of positive variation, and maximizing the probability of achieving overall project objectives.

Risks will continue to emerge during the lifetime of the project, so Project Risk Management processes should be conducted iteratively. Risk is initially addressed during project planning by shaping the project strategy. Risk should also be monitored and managed as the project progresses to ensure that the project stays on track and emergent risks are addressed.

In order to manage risk effectively on a particular project, the project team needs to know what level of risk exposure is acceptable in pursuit of the project objectives. This is defined by measurable risk thresholds that reflect the risk appetite of the organization and project stakeholders. Risk thresholds express the degree of acceptable variation around a project objective. They are explicitly stated and communicated to the project team and reflected in the definitions of risk impact levels for the project.

## **Plan Risk Management**

This is the primary process serve as the bases to perform the remaining risk management processes successfully, Careful and explicit planning enhances the possibility of success of the other risk management processes.

Risk Management Planning is the process of deciding how to approach and conduct the risk management activities for a project. Planning of risk management processes is important to ensure that the level, type, and visibility of risk management are proportionate with both the



risk and importance of the project to the organization, to provide sufficient resources and time for risk management activities, and to establish an agreed-upon basis for evaluating risks (PMI, 2017). (PMI, 2017) & Harold Kerzner (2009), argue that Risk Management Planning process should be completed early during project planning, since it is crucial to successfully performing the other processes described in the preceding processes.

According to Harold Kerzner (2009), Plan for risk management (risk planning) is the detailed formulation of a program of action for the management of risk. It is the process to:

- ✓ Develop and document an organized, comprehensive, and interactive risk management strategy.
- ✓ Determine the methods to be used to execute a program's risk management strategy.
- ✓ Plan for adequate resources.

Risk planning is iterative and includes the entire risk management process, with activities to identify, analyze, respond to, and monitor and control risks. An important output of the risk planning process is the risk management plan (RMP). (Note: The RMP is an output of risk planning and not the risk planning process itself.), Harold Kerzner (2009).

The risk planning develops a risk management strategy which includes the process of risk management and implementation approaches, each of them have a crucial contribution for achieving effective risk management

Early efforts should establish the purpose and objective, assign responsibilities for specific areas, identify additional technical expertise needed, describe the assessment process and areas to consider, define a risk rating approach, delineate procedures for consideration of response strategies, establish monitoring and control metrics (where possible), and define the reporting, documentation, and communication needs. The RMP is the risk-related roadmap that tells the project team how to get from where the program is today to where the program manager wants it to be in the future.

The risk management plan is vital to communicate with and obtain agreement and support from all stakeholders to ensure the risk management process is supported and performed effectively over the project life cycle.

The key to writing a good RMP is to provide the necessary information so the program team knows the objectives; goals; tools and techniques; reporting, documentation, and communication; organizational roles and responsibilities; and behavioral climate to achieving effective risk management. The RMP should include appropriate definitions, ground rules and assumptions associated with performing risk management on the project, candidate risk categories, suitable risk identification and analysis methodologies, a suitable risk management organizational implementation, and suitable documentation for risk management activities. The RMP should never include results (e.g., risk analysis scores) because these results may frequently change, thus necessitating updates to the RMP. Instead, risk-related results should be included in separate risk documents (e.g., risk register and its updates) to avoid unnecessary updates to the RMP Harold Kerzner (2009).

Another important aspect of risk planning is providing risk management training to project personnel. It is important that risk management training be performed by individuals, whether inside or outside the project, with substantial real-world experience in making risk management work on actual projects; else the training may be nothing more than an academic exercise with little or no value. Finally risk management training should be tailored to various groups within the project as necessary, and a different emphasis may exist for decision-makers versus working-level personnel and technical versus nontechnical personnel Harold Kerzner (2009).

## **Risk Identification**

Risk identification is the process of identifying individual project risks as well as sources of overall project risk, and documenting their characteristics. The benefit of this process is the documentation of existing individual project risks and the sources of overall project risk. It also brings together information so the project team can respond appropriately to the identified risks (PMI, 2017). Risk identification is the identification of potential risks to the project. Therefore, understanding the scope of the possible risk will help project managers in developing a more realistic and cost effective strategies in dealing with such risk factor. So the success of any project depends on proper identification of all types of risks factors without limit to the obvious The International Journal of Business & Management V. 3, Issue 12 2015.

Involving as many as possible stakeholders who have a stake in the project will enhance our looking of risks from different perspectives. Project manager, project team members, project

risk specialist, customers, subject matter experts from outside the project team, end users, other project managers, operations managers, stakeholders, and risk management experts within the organization may have a part in the project risk identification process (PMI, 2017) and also should involve project team members in order:

- ❖ Encouraged all project stakeholders to identify individual project risks.
- ❖ Develop and maintain a sense of ownership.
- ❖ Maintain a sense of responsibility for identified individual project risks, the level of overall project risk, and associated risk response actions.

According to (PMI, 2017) Consistent format should be used for risk statements to ensure that each risk is understood clearly and unambiguously in order to support effective analysis and risk response development. Risk identification is an iterative process, since new individual project risks may emerge as the project progresses and the level of overall project risk will also change. Its frequency of iteration and participation in each risk identification cycle will vary by situation, and this will be defined in the risk management plan.

You may follow different techniques for risk identification but your choice and decision is highly tied with the level of accuracy and the time & experts available to perform the process. Hence, if you want to generate as much as possible list of potential risks and if you have good enough experts in the area of risk management you can use **Expert judgment** as a tool for risk identification. In which team of expertise considered from individuals or groups with specialized knowledge of similar projects or business areas will be considered. Such experts should be identified by the project manager and invited to consider all aspects of individual project risks as well as sources of overall project risk, based on their previous experience and areas of expertise. The experts' bias should be taken into account in this process. The other option for risk identification is **data gathering techniques** in which it is further sub divided into;

- **Brainstorming**; obtain a comprehensive list of individual project risks and sources of overall project risk. It will be performed through a multidisciplinary set of experts who are not part of the team. The facilitator will help participants to generate as much as possible lists of potential risks, either in a free-form brainstorm session or one that uses more structured techniques. Categories of risk, such as in a risk breakdown structure, can be used as a framework. Particular attention should be paid to

ensuring that risks identified through brainstorming are clearly described, since the technique can result in ideas that are not fully formed.

- **Checklists.** A checklist is a list of items, actions, or points to be considered. It is often used as a reminder. Risk checklists are developed based on historical information and knowledge that has been accumulated from similar projects and from other sources of information. They are an effective way to capture lessons learned from similar completed projects, listing specific individual project risks that have occurred previously and that may be relevant to this project. The organization may maintain a risk checklist based on its own completed projects or may use generic risk checklists from the industry. This may be quick and simple to use but it lacks its comprehensiveness as it is difficult to list exhaustive, rather it should be update always to include new and to eliminate outdated risks from the list.
- **Interviews.** Individual project risks and sources of overall project risk can be identified by interviewing experienced project participants, stakeholders, and subject matter experts. Interviews should be conducted in an environment of trust and confidentiality to encourage honest and unbiased contributions.

You may also adapt the **Data Analysis technique** to identify possible potential risks of that particular project; it is also composed of different individual techniques such as;

- ✓ **Root cause analysis.** Root cause analysis is typically used to discover the underlying causes that lead to a problem, and develop preventive action. It can be used to identify threats by starting with a problem statement (for example, the project might be delayed or over budget) and exploring which threats might result in that problem occurring. The same technique can be used to find opportunities by starting with a benefit statement (for example, early delivery or under budget) and exploring which opportunities might result in that benefit being realized.
- ✓ **Assumption and constraint analysis.** Every project and its project management plan are conceived and developed based on a set of assumptions and within a series of constraints. These are often already incorporated in the scope baseline and project estimates. Assumption and constraint analysis explores the validity of assumptions and constraints to determine which pose a risk to the project. Threats may be identified from the inaccuracy, instability, inconsistency, or incompleteness of

assumptions. Constraints may give rise to opportunities through removing or relaxing a limiting factor that affects the execution of a project or process.

- ✓ **SWOT analysis.** This technique examines the project from each of the strengths, weaknesses, opportunities, and threats (SWOT) perspectives. The analysis also examines the degree to which organizational strengths may offset threats and determines if weaknesses might hinder opportunities.
- ✓ **Document analysis.** Risks may be identified from a structured review of project documents, including, but not limited to, plans, assumptions, constraints, previous project files, contracts, agreements, and technical documentation. Uncertainty or ambiguity in project documents, as well as inconsistencies within a document or between different documents, may be indicators of risk on the project.

These risk identification techniques are most widely used techniques, in addition to these there are other techniques that you may use these are facilitation, prompt list & meeting (risk workshop). Facilitation improves the effectiveness of many of the techniques used to identify individual project risks and sources of overall project risk. A prompt list is a predetermined list of risk categories, can serve as a framework to aid the project team in idea generation when using risk identification techniques. Whereas, most risk workshops include some form of brainstorming but other risk identification techniques may be included depending on the level of the risk process defined in the risk management plan. Use of a skilled facilitator will increase the effectiveness of the meeting.

Risk Identification produces a deliverable of **project Risk Register** along with risk list, potential risk owners and list of potential risk responses that may affect the project's ability to achieve its objectives, risk report and allow making project document update.

Reviewing the lists of possible risk sources as well as the project team's experiences and knowledge, all potential risks are identified. Using an assessment instrument, risks are then categorized and prioritized. The process of prioritization helps to manage those risks that have both a high impact and a high probability of occurrence. This will lead us to the next step of risk management process of risk analysis in which each risk will be evaluated in terms of its impact and probability of occurrence.

## **Risk Analysis**

After the potential risks have been identified, the project team then evaluates each risk based on the probability that a risk event will occur and the potential loss associated with it. Basically it might not be true to find all risks having equal chance of occurrence and impact on the project. Some risk events are more likely to happen than others, and the cost of a risk can vary greatly. Harold Kerzner (2009) defines Risk analysis as a systematic process to estimate the level of risk for identified and approved risks. According to Nicholas & Steyn (2008), Risks are ubiquitous, but it is only the notable or significant ones that require attention. What is considered significant depends on the risk likelihood, the risk impact, and the risk consequence.

Risk analysis should be performed as soon as possible after the potential risks have been identified so that appropriate time and resource can be allocated to the more serious risks. It uses the probability and impact matrix (PIX) to rank and prioritize risks and this information will be placed back on the risk register, likewise this process should be performed regularly because new risks will be identified and the characteristics of existing risks may change as the project progresses Paul Newton (2015).

Harold Kerzner (2009) also argue that risk analysis should begin with a detailed evaluation of the risks that have been identified and approved by decision-makers for further evaluation with the objective to gather enough information about the risks and then to estimate the probability of occurrence and consequence of occurrence if the risk occurs and convert the resulting values to a corresponding risk level. With the same book he also recommended to convert results after performing the analysis into risk levels through quantitative and qualitative risk analysis. Where quantitative risk analysis methodology enable you to group the results by existing cost risk, schedule risk, or technical risk boundaries that have specifically been tailored to the program, or by performing a (statistical) cluster analysis on the results. Whereas, by performing a qualitative risk analysis, risk rating can be used as an indication of the potential importance of risks on a program.

## **Qualitative Risk Analysis**

Qualitative Risk Analysis is the process of prioritizing individual project risks for further analysis or action by assessing their probability of occurrence and impact as well as other characteristics (PMI, 2017). The key benefit of this process is that it focuses efforts on high-

priority risks. According to Carter & Chinyio (2010) Qualitative risk Analysis is done by using the personal experiences of the risk analysts and reviewing past corporate experiences where records are available. It can also be achieved with the aid of checklists, interviews, brainstorming sessions, etc.

Perform Qualitative Risk Analysis establishes the relative priorities of individual project risks for Plan Risk Responses. It identifies a risk owner for each risk who will take responsibility for planning an appropriate risk response and ensuring that it is implemented also lays the foundation for Perform Quantitative Risk Analysis if this process is required. The qualitative risk analysis process is performed regularly throughout the project life cycle. Tools and techniques that mostly used to analyze risk qualitatively are risk probability and impact assessment, probability and impact matrix, risk data quality assessment, risk categorization, risk urgency assessment and expert judgment. Based on the new information generated from this process risk register will be updated & risk assumption will change (PMI, 2017).

## **Quantitative Risk Analysis**

According to (PMI, 2017) Quantitative Risk Analysis is the process of numerically analyzing the combined effect of identified individual project risks and other sources of uncertainty on overall project objectives. The key benefit of this process is that it quantifies overall project risk exposure, and it can also provide additional quantitative risk information to support risk response planning. This process might not be done for every project, it would be better to perform on larger, more complex projects, because considerable time and effort is required to do it.

Carter & Chinyio (2010) a quantitative analysis can be carried out by means of sensitivity analysis, scenario analysis, probability analysis, Monte Carlo simulation, etc. In the same fashion (PMI, 2017) also list Data gathering and representation techniques, quantitative risk analysis and modeling techniques and expert judgment as some of the techniques and tools used to analyze risk quantitatively.

Undertaking a robust analysis depends on the availability of high-quality data about individual project risks and other sources of uncertainty, as well as a sound underlying project baseline for scope, schedule, and cost. It is the only reliable method to assess overall project risk through evaluating the aggregated effect on project outcomes of all individual project risks and other sources of uncertainty. The analysis uses information on individual project risks

that have been assessed by the Qualitative Risk Analysis process as having a significant potential to affect the project's objectives. The deliverables of this process are used as inputs to the Plan Risk Responses process, particularly in recommending responses to the level of overall project risk and key individual risks. A quantitative risk analysis may also be undertaken following the Plan Risk Responses process, to determine the likely effectiveness of planned responses in reducing overall project risk exposure. Project documents are updated with information resulting from quantitative risk analysis (PMI, 2017).

## **Plan Risk Responses**

Planning risk responses (risk handling) includes specific methods and techniques to deal with known risks and opportunities; it involves planning and execution with the objective of reducing risks to an acceptable level and exploiting potential opportunities. It must be compatible with the RMP and any additional guidance the program manager provides Harold Kerzner (2013). (PMI, 2017) described Plan Risk Responses as the process of developing options, selecting strategies, and agreeing on actions to address overall project risk exposure, as well as to treat individual project risks. The benefits of effective and appropriate risk responses are minimize individual threats, maximize individual opportunities, and reduce overall project risk exposure. Risk responses should be appropriate for the significance of the risk, cost-effective in meeting the challenge, realistic within the project context, agreed upon by all parties involved, and owned by a responsible person. The strategy or mix of strategies most likely to be effective should be selected for each risk. Structured decision-making techniques may be used to choose the most appropriate response.

A critical part of risk response planning involves refining and selecting the most appropriate response option(s) and specific implementation approach(s) for selected risks (often those with medium or higher risk levels) and opportunities. The selected risk response option coupled with the specific implementation approach is known as the risk response (handling) strategy, which is documented in the risk response (handling) plan Harold Kerzner (2009).

The risk mitigation plan captures the risk mitigation approach for each identified risk event and the actions the project management team will take to reduce or eliminate the risk. (PMI, 2017) identified five types of risk mitigation strategies to deal with threats that is unique to all organizations these are Escalate, Avoid, Transfer, Mitigate and Accept. Whereas, you may find only four of the strategies in different book including in Harold Kerzner's Book (2009) he



described only Avoidance ,Transfer ,Mitigation and Acceptance as the risk response strategy. Accordingly each of the strategy stated in (PMI, 2017) will be discussed further below;

**Escalate:** Escalation is appropriate when the project team or the project sponsor agrees that a threat is outside the scope of the project or that the proposed response would exceed the project manager's authority. Escalated risks are managed at the program level, portfolio level, or other relevant part of the organization, and not on the project level. Determining to whom this case to be notified is the project manger's responsibility and the concerned should also accept the escalation. Once the threats escalated the project team will not monitor further, although they may be recorded in the risk register for information.

**Avoid:** Eliminating a specific threat, usually by eliminating the cause PMI (1996). It may be appropriate for high-priority threats with a high probability of occurrence and a large negative impact. Avoidance may involve changing some aspect of the project management plan or changing the objective that is in jeopardy in order to eliminate the threat entirely, reducing its probability of occurrence to zero (PMI, 2017). The project management team can never eliminate all risk, but specific risk events can often be eliminated through clarifying requirements, obtaining information, improving communication, or acquiring expertise.

**Transfer:** is a risk reduction method that shifts the risk from the project to another party Adrienne Watt (2014). Involve transferring the risk to a third party so that they are responsible for its management and impact. It does not eliminate the risk it simply transfers the liability to someone else Paul Newton (2015). According to (PMI, 2017) Transfer is shifting ownership of a threat to a third party to manage the risk and to bear the impact if the threat occurs. Risk transfer often involves payment of a risk premium to the party taking on the threats which include the use of insurance, performance bonds, warranties, guarantees, etc. Agreements may be used to transfer ownership and liability for specified risks to another party.

**Mitigate:** Reducing the expected monetary value of a risk event by reducing the probability of occurrence or reducing the risk event value or both PMI (1996). *OSPMI (2007)* & (PMI, 2017) Risk mitigation implies a reduction in the probability and/or impact of an adverse risk event to an acceptable threshold. Taking early action to reduce the probability and/or impact of a risk is often more effective than trying to repair the damage after the risk has occurred.

This may take resources or time and hence may represent a tradeoff of one objective for another. However, it may still be preferable to going forward with an unmitigated risk.

**Accept:** is a strategy that assumes the risks and does nothing to reduce the effect. This happens when the risk involved outweighs the cost of the risk itself Haro Bodicha (2015). According to Adrienne Watt (2014), when you can't avoid, mitigate, or transfer a risk, then you have to accept it. But even when you accept a risk, at least you've looked at the alternatives and you know what will happen if it occurs. If you can't avoid the risk, and there's nothing you can do to reduce its impact, then accepting it is your only choice. (PMI, 2017) states that acceptance can be either active or passive, where the most common active acceptance strategy is through establishing a contingency reserve, including amounts of time, money or resources to handle the threat if it occurs. Whereas, a Passive acceptance involves no proactive action apart from periodic review of the threat to ensure that it does not change significantly.

In the same way as risk threat response plan strategies mentioned above there are different alternative strategies available to use for risk opportunity responses these are discussed in same fashion as risk threat response below;

**Escalate:** This strategy is appropriate when the project team or the project sponsor agrees that an opportunity is outside the scope of the project or that the proposed response would exceed the project manager's authority. In the same way as escalated threats strategy escalated opportunities are managed at the program level, portfolio level, or other relevant part of the organization, and not on the project level.

**Exploit:** The organization wishes to ensure that the opportunity is realized. This strategy seeks to eliminate the uncertainty associated with a particular upside risk by making the opportunity definitely happen *OSPMI (2007)*. The exploit strategy may be selected for high-priority opportunities where the organization wants to ensure that the opportunity is realized. This strategy seeks to capture the benefit associated with a particular opportunity by ensuring that it definitely happens, increasing the probability of occurrence to 100% (PMI, 2017).

**Share:** Sharing involves transferring ownership of an opportunity to a third party so that it shares some of the benefit if the opportunity occurs. It is important to select the new owner of a shared opportunity carefully so they are best able to capture the opportunity for the benefit

of the project (PMI, 2017). Larson & Gray (2001) states that sharing strategy involves allocating some or all of the ownership of an opportunity to another party who is best able to capture the opportunity for the benefit of the project . Examples of sharing actions include forming risk-sharing partnerships, teams, special-purpose companies, or joint ventures.

**Enhance.** (PMI, 2017) describe enhance strategy as used to increase the probability and/or impact of an opportunity. It would be effective to take an early enhancement action than trying to improve the benefit after the opportunity has occurred. Its probability of occurrence may be increased by focusing attention on its causes. According to *OSPMI (2007)* seeking to facilitate or strengthen the cause of the opportunity, and proactively targeting and reinforcing its trigger conditions, might increase probability. Larson & Gray (2001) also describe Enhance as the opposite of mitigation in that action is taken to increase the probability and/or the positive impact of an opportunity. Examples of enhancing opportunities include adding more resources to an activity to finish early

**Accept:** Accepting an opportunity is being willing to take advantage of it if it occurs, but not taking action to pursue it Larson & Gray (2001). (PMI, 2017) Accepting an opportunity acknowledges its existence but no proactive action is taken. This strategy may be appropriate for low-priority opportunities, and it may also be adopted where it is not possible or cost-effective to address an opportunity in any other way. Acceptance can be either active or passive.

## **Implement Risk Responses**

You may not find this in any book as risk management process separately it is a recently included risk management process, it was done with same stage at monitoring and control stage. (PMI, 2017) declare as a separate process to create an attention for the risk responses plan implementation as it was observed due to lower attention given by risk manger's & project teams. They didn't take any action beside identification, analysis of the risks & risk response development as well as documenting it. Implement Risk Responses is the process of implementing agreed-upon risk response plans. It would have a key benefit that ensures the agreed-upon risk responses are executed as planned in order to address overall project risk exposure, minimize individual project threats, and maximize individual project opportunities. This process is performed throughout the project.

A common problem with Project Risk Management is that project teams spend effort in identifying and analyzing risks and developing risk responses, then risk responses are agreed upon and documented in the risk register and risk report, but no action is taken to manage the risk. Only if risk owners give the required level of effort to implementing the agreed-upon responses will the overall risk exposure of the project and individual threats and opportunities are managed proactively (PMI, 2017). The deliverables from this process will be a change request to the cost and schedule baselines or other components of the project management plan and Project documents which is directly observed on lesson learned register, risk register, risk report, issue log and project team assignment.

## Monitor Risks

Once you've identified the risk, assessed the probability and impact of the risks, and planned what to do if the risk event occurs, you need to monitor and control the project risks. The monitoring and control process systematically tracks and evaluates the effectiveness of risk response actions against established metrics Wysocki (2013) and states that continuously paying attention to the risks is a good insurance policy against project failure. (PMI, 2017) described risk monitoring as the process of monitoring the implementation of agreed-upon risk response plans, tracking identified risks, identifying and analyzing new risks, and evaluating risk process effectiveness throughout the project. The benefit of this process is that it enables project decisions to be based on current information about overall project risk exposure and individual project risks. According to Harold Kerzner (2009) monitoring results may also provide a basis for developing additional risk response strategies, or updating existing risk response strategies, and reanalyzing known risks.

Wysocki (2013) on his book recommend that the process of writing down the risks, assessing them, and posting them in the team war room makes everyone on the project team aware of their existence and is a good place to start. Hence, start by creating a risk log in which the document lists all risks that you want to manage, identifies who is supposed to manage the risk, and specifies what should be done to manage the risk event. Wysocki (2013) outlined components of a typical risk log fields as follow as:

- ✓ **ID number:** always remains the same, even if the risk event has occurred and been managed. If you take the risk off the list and file it elsewhere, don't assign the old number to a new risk. Keep the original number with the discarded risk and never use it again, or there will be a great deal of confusion.

- ✓ **Risk description:** a short statement of the risk event.
- ✓ **Risk owner:** the person who has the responsibility of monitoring the status of the listed risk.
- ✓ **Action to be taken:** Lists what the risk owner is going to do to deal with the risk event.
- ✓ **Outcome**—describes what happened as a result of your mitigation strategy.

## Challenges of Project Risk Management

Whenever we are operating in the dynamic environment there are different factors that work for and or against the project environment either internally or externally. Understanding them and their effect will enable the company to design appropriate strategy on time and on the return will enable to succeed project. Specially, in the project environment it would be different as project undertakings conducted on constrained resources of time, cost & quality with non-repetitive pattern. Hence as risk is always there the challenge of its practice also there. Keçi, J. and Mustafaraj, E. (2013) on their review cited many challenges of project risk management implementation, from the many challenges of project risk management implementation listed few of the major challenges persistently observed are listed on their ranking order as they mentioned on their finding:

- Unsupportive culture:
- Lack of information and knowledge:
- Lack of practical experience
- Lack of policy and procedures
- Lack of expertise to lead RM team
- Absence of guidelines on the standard procedure of managing risk
- Lack of organization support:
- Lack of money
- Difficulties in interpreting the results
- Lack of transparency among stakeholders

The development of a stronger risk culture across the whole organization offers greater benefits. Such a risk culture would mean tackling a number of current challenges. It Would Change the prevailing view that risk is all about preventing loss and instead include the need to maximize opportunities (and thereby improve profitability) Barrow. B (2012). Lack of competence and education about risk management seems to be a significant barrier in RM

implementation. For a successful implementation of RM is necessary to engage staff by organizing well-structured workshops and training sessions. As it was cited by Liliana & Nadia (2017) Aspects such as lack of financial resources or lack of support and involvement from management can be strong barriers to risk management implementation. They also list out many challenges of risk management i.e establishing a risk function, a corporate culture (cultural capacity for openness), finding a proper ERM framework, not applying a KISS (Keep it simple, silly) principle, technical challenges related to risk management process (lack of quality data or limited access to data, lack of an appropriate technique or combination of techniques for risk identification and analysis), lack of risk knowledge and risk awareness at board levels and lower levels, not linking risk to overall corporate strategy, and complex environmental challenges.

## 2.2. Empirical Literature Review

Regarding ethio telecom, different research studies have been undertaken in diverse titles. But risk management challenges and practice of ethio telecom had not yet assessed. However, various studies had been conducted in the areas of risk management in various sectors, mostly in Construction and financial sectors.

Risk Management Process, though a very vital component of project management process, is not given a due attention. Regarding this idea (Yimam, 2013) as quoted by Bereket N. (2017:19), stated that the practice of risk management in Ethiopia is very little and undeveloped and (Getachew, 2014) as quoted by Bereket N. (2017:19) cited that the practice of construction risks management through insurance in the Ethiopian federal road projects revealed that *formal risk management is not practiced well. (emphasis added)*

Straw (2015), stated as quoted by Bereket N. (2017:18), that the area of *risk and uncertainty is particularly important in project management and is a natural element of projects. (emphasis added)*. That is why risk management can be justified on almost all projects.

Endawek M. (2015) has examined Risk Management and Its Impact on Financial Performance of Commercial Banks in Ethiopia. Balanced fixed effect panel regression was used for the data of eight commercial banks in the sample covered the period from 2002 to 2013. Descriptive statistics was also used to make analysis on primarily collected data. Four risk management variables that affect banks performance were selected and analyzed. The results of panel data regression analysis showed that credit risk management indicator

(NPLR), Liquidity risk management indicator(LIQR) and operational risk indicator (CIR) had negative and statistically significant impact on banks performance. In general, the researcher concludes that banks with good risk management policies have a lower risk and relatively higher return on asset.

In her study of an assessment of project management competency: the case of ethio telecom, Kalkidan A. (2017), found that project risk management was categorized as hard competencies of Ethio telecom project managers. The study concluded that risk management is one among weaknesses or hard competencies for the company. Detail explanation about which any component of risk management process was, unwell implemented. Plus detail mitigation strategies and developing requirements were not recommended. This may be due to the focus of the study objective.

Frezewd A. (2016) examined the practice of project risk management in Batu and Dukem town water supply project. Purposive sampling was used and data collected through questionnaire was analyzed descriptively. The study concluded that there is no policy or guideline that is designed on how to manage risks in the projects. However, in the case of Ethio Telecom, risk management program is incorporated in TEP Charter. (TEP Charter, 2014).

Frezewed A.(2016: xii) explains the risk management practices in detail as follows:

“Even though, relevant stakeholders are involved in the planning process of the projects, thorough planning is not performed. Risk identification and analysis is performed for the projects and it is done based on expert judgment. Team members take into consideration factors such as resource, schedule and budget while responding to risks that occur and that might occur. But there doesn't exist a well-defined strategy that guides on how to respond to risks within the project. The practice of monitoring and control risks is applied within the Batu and Dukem projects by the team members without giving due attention to the goals and objectives that the projects aim to reach. Generally, the outcome of the research confirmed that risk management practice is implemented to some extent but there is a gap between the theory of project risk management which should be applied and the actual practice that is performed by the two water supply projects.”

From the above findings, it is clear that the study tried to segregate the practice of risk management process among its components. As compared to the study of Kalkidan A. (2017) it has viewed practices of each of the components of risk management process in a more detailed and segregated way. This difference is due to variation in focus areas of the study's objectives.

Kalkidan M. (2017) assessed Project Risk Management Practices in Real Estate Projects in Addis Ababa, and found that risk management is not implemented and practiced to the level it is needed, though the real estate sector is characterized by high nature of risk. The study also found a gap between the theory and actual implementation. Though there existed risk management plan, it is not integrated with organization's strategic plan and little is done towards awareness creation to the team members. The study was conducted using descriptive statistics of primary data collected through interview and questionnaire.

A. M. Pasha & Bayush M. (2017), on their study titled Assessment of Credit Risk Management System in Ethiopian Banking concluded that banks with good or sound credit risk management policies have lower loan default ratios (bad loans) and higher interest income (profitability). To achieve their objective, the research[ers] undertake descriptive approach using both qualitative and quantitative data. Further, the researchers" [ ] utilizes a survey as a research method. Primary data was collected through interview and questionnaires distributed to respondents that involve loan clients of the commercial banks, Department Managers and Senior Officers working on loan processing. Secondary data was obtained from publications of private and governmental banks.

Hana (2016) as quoted by Kalkidan M. (2017) examined "the extent of operational risk management practices of CBE. The study was made through the combination of theory and empirical work. The outcome of the study indicated that although some of its components are not always adhered to and need improvement, there is still a well-established framework to manage operational risks. The researcher suggested that the bank needs to allocate adequate resources, create awareness and build the capacity of concerned staff, strengthen the risk culture, employ appropriate mechanisms for measurement and reporting of operational risk in order to improve its risk management practices."

From the above empirical evidences witnessed that risk management is not well managed and implemented. In the case of ethio telecom, except highlighting risk management as a



weakness, Kalkidan A. (2017), Frezewed A.(2016) and Kalkidan M.(2017). There were no researches conducted in the risk management area of the company. Risk Management plan is one among the five program management components of TEP to name: Quality assurance plan, Training Plan, Communication Plan and Documentation Management (TEP Charter, 2014). This shows that ethio telecom's, Telecom Expansion program have set a risk management plan.

Therefore, this study investigated in details the challenges& practices of Project Risk Management of ethio telecom, Telecom Expansion Program (TEP) in line with the theoretical frameworks.

## 2.3. Conceptual framework of the study

As McGaghie et al. (2001) stated, the conceptual framework “sets the stage” for presentation of the particular research questions that drives the investigation being reported based on the statement of the problem. The problem statement of a thesis presents the context and issues that caused the researcher to conduct the study.

The conceptual framework lies within a much broader framework called theoretical frameworks theoretical frameworks draws support from time tasted theories that represent the findings of many researchers on why and how a particular phenomenon occurs. For the purpose of this study the risk process presented in the book “project management the Managerial process” 5<sup>th</sup> ed. is used with modification in line with the study purpose.

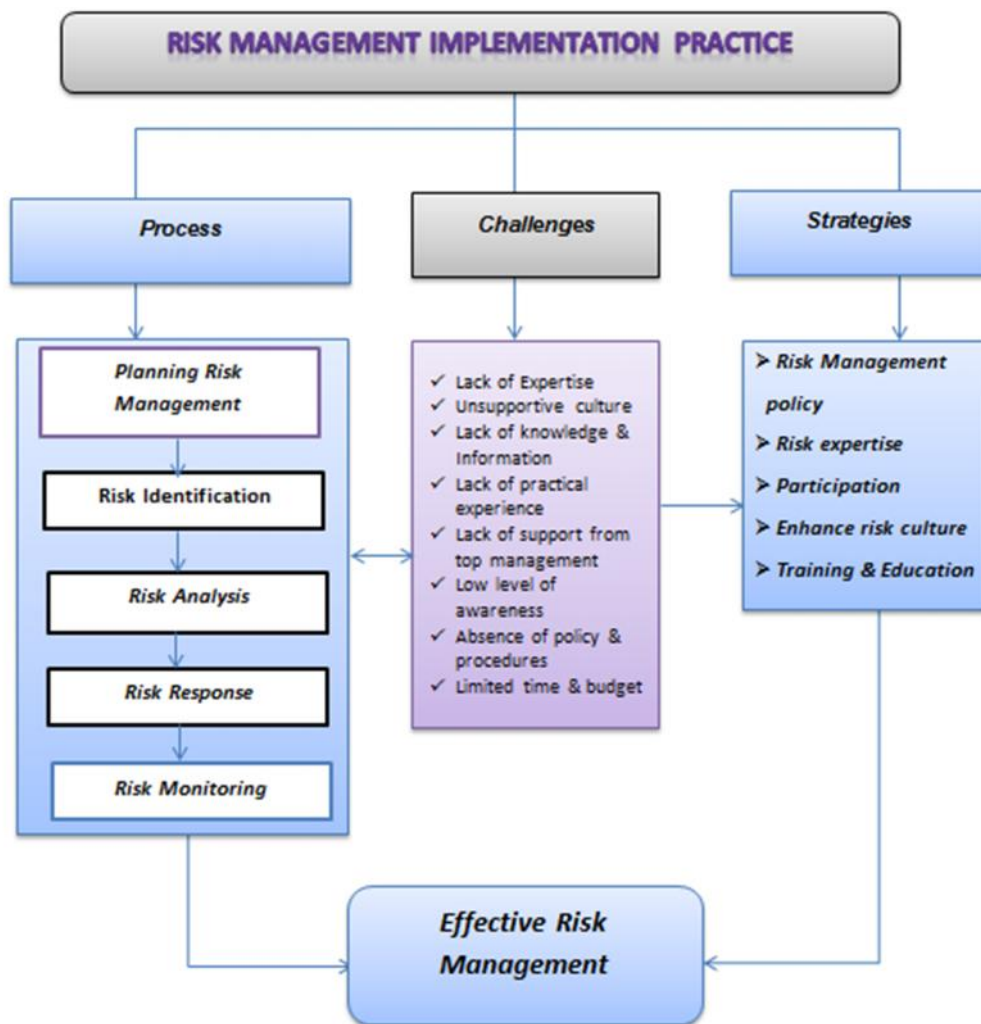


Figure 3: Conceptual Framework overview

Source: "Project Management the Managerial Process." 5<sup>th</sup> ed. p.p 213

# CHAPTER THREE

## 3. RESEARCH DESIGN AND METHODOLOGY

This chapter presents the research design and methodology. The chapter describes the detailed research methodology adopted to address issues identified earlier, together with the means of collecting data for analysis, and the analysis approach.

### 3.1. Research design

The research design applied in this study was descriptive research design. As the major purpose of descriptive research is description of the state of affairs as it exists at present (Kothari, 2004). To make the study reliable and valid and also find out what had been written on the topic, the researcher reviews some available related literature.

The researcher will also adapt combination of both qualitative and quantitative research design in order to gain more insight regarding the study area. The unit of observation for this study was project managers and risk management department staffs as respondents. Therefore, this study tries to describe the observed challenges of risk management Implementation in ethio telecom, Telecom Expansion Program.

### 3.2. Population and sample

#### 3.2.1. Target population of the study

Oso and Onen (2009) define the term target population as the total number of subjects or the total environment of interest to the study. The target population of this study was project Managers who have been involved in Telecom Expansion program and staffs working in the risk management department located in Addis Ababa. These groups are targeted because they will help meet the objectives set in this study since they are highly exposed to the study area.

The survey constitutes all project managers who have been involved in the Telecom Expansion Program located in Addis Ababa. According to the information obtained from the Telecom Expansion program office, project managers assigned in the program shows a little fluctuation and there were 49 project managers assigned in the program. From these 49 project managers assigned in the program 40 (81.6%) are located in Addis Ababa which comprise the target population of this study and also researcher takes the total target

population in the study as a sample size we call it census. This technique is applicable in situations having a very small no of population and to get full information about subject.

The sample respondents for the interview were selected using non probability technique called purposive sampling. The purposive sampling technique, also called judgment sampling, is the deliberate choice of an informant due to the qualities the informant possesses, for the interview 2 Program Mangers and 2 risk management department staffs were selected as respondent to the study. For the questionnaire, all of the 40 project managers involved in the program were selected. Thus the total respondent will account 44 respondents.

### **3.3. Source and Instruments of Data Collection**

In this descriptive study, both quantitative and qualitative data was employed to answer the research questions and meet the objectives of the study. Data was collected by using both primary and secondary sources of data. The primary data was gathered through a set of self-administered structured questionnaire and through semi-structured interview. On the other hand, the secondary sources of data were gathered from books, published and unpublished documents of the company and journals.

The instrument used in this study was designed based on extensive literature review from multiple sources. It was developed to answer research questions and meet the research objectives and it was distributed to the project managers involved in the program. Regarding validity of the instruments, the questionnaire was tested with a sample of 7 project managers located in head office; comments from the school's instructors were incorporated. Further, a series of different discussions were made with the advisor of this research.

The measurement used in the questionnaire is the Likert Scale Method of summated ratings. It consists of declaration statements where respondents indicate their degree of agreement or disagreement on a five-point scale: Strongly Disagree, Disagree, uncertain, Agree, and Strongly Agree, and few multiple responses closed ended questions. Close-ended questions were chosen in consideration of the fact that respondents are usually busy and this method enables the researcher to obtain responses promptly. Moreover, a semi-structured interview was held with members of the risk management department (including the risk management department manager) and program managers involved in the program to get their opinion in the study area.

### **3.4. Procedures of Data Collection**

The data was collected from primary as well as secondary sources. In order to get firsthand information, primary data was collected from respondents through using close ended questioner and personal interview. The questionnaires were composed of 35 items having designed in five point Likert scales, to get an insight of the respondents' perception of risk management and their observation in the program. Whereas the interview checklist was designed in two formats one was designed to get the overall risk management practices of the company from the two risk department members and the other is specifically focusing on Telecom expansion program which was conducted with program managers.

Furthermore, secondary sources including risk management policy manual, risk management plan of the company, published works, journals and related articles that contribute to better understanding of the research topic were used to support the study.

### **3.5. Methods of Data Analysis**

For this research the data was collected using questionnaires and interview and the collected data were analyzed quantitatively using numerical value and qualitatively using a description to identify the problems. Data was analyzed and presented in a way to answer the research questions and meet the objective of the study from which conclusions and recommendations were drawn. Analysis of the data collected from primary source using questionnaire were analyzed using descriptive statistics of SPSS software version 20 to present the collected data in frequency, percentage, tables and charts. For the multiple response questions the researcher also used SPSS Dichotomy group tabulated at value 1, in which responses recoded into formats suitable to put in the SPSS. The data which was collected using semi structured interview were analyzed by combining and summarizing the results.

### **3.6. Validity and Reliability**

Pilot testing was done to check the validity and reliability of the instrument of data collection before using it. Validity is concerned with the extent to which an instrument measures what it is supposed to measure (Kothari, 2004). Reliability on the other hand is concerned with consistency in measurement and can be examined through assessing the degree of consistency between multiple measures of a latent variable (Hair et al, 2006). Content validity was achieved by the procedures that are used to develop the research instrument including

conducting a thorough examination of the previous empirical and theoretical work using multiple items to capture all its attributes; and conducting the pilot study before starting the fieldwork.

The questionnaire was tested with a sample of 7 project managers located in head office, the pilot testing has also enabled the researcher to identify and amend problematic questions and refine the questionnaire.

The reliability of the items in the instrument was measured using Cronbach's alpha which is the most frequently used reliability test to measure internal consistency when using Likert scale. The overall Cronbach's alpha result of the 27 items was (0.887) and the result including the multiple response questions (Dichotomy response questions) for total of 97 items was (0.809) which is still higher than the minimum alpha value set as acceptable (i.e. 0.70). The Cronbach alpha result summary obtained from SPSS is shown on the following table.

**Table 1: Cronbach's-Alpha test coefficient values**

<b>Variables</b>	<b>Cronbanch's Alpha</b>	<b>N of Items</b>
Overall Risk Awareness	<b>.895</b>	<b>5</b>
Risk Planning	<b>.746</b>	<b>6</b>
Risk Identification	<b>.740</b>	<b>5</b>
Risk Analysis	<b>.794</b>	<b>4</b>
Risk Response	<b>.684</b>	<b>3</b>
Risk Monitoring	<b>.702</b>	<b>4</b>
Overall	<b>.887</b>	<b>27</b>

Source: Own Survey (2018)

### **3.7. Ethical considerations**

Ethical considerations are expected to be involved in any kind of research study. This paper therefore takes into consideration of those ethical issues on access and use of data, analysis and report of the findings in a moral and responsible way. All respondents were informed about the purpose of the study, Questionnaires were distributed and interviews were made based on complete willingness of respondents. Confidentiality and anonymity of the respondents was also guaranteed.

# CHAPTER FOUR

## 4. DATA ANALYSIS AND INTERPRETATIONS

This chapter presents the results of the study. Detailed analysis of the results derived from the questionnaire analysis and results from the interview conducted are presented in this chapter. Moreover, secondary data analysis of the risk management of the Telecom Expansion Program used in the study is also discussed here.

### 4.1. Response Rate

In the study, the target population was all project managers involved in telecom expansion program from Addis Ababa. To collect the primary data questionnaires and interview are administered to the respondents. The questionnaire consists of 35 close ended questions, composed of 27 questions designed in a Likert scale and 8 questions designed for multiple responses. An interview was also held with two risk management personnel & with two program managers of Telecom expansion program. All of the interviewees were selected based on their significant roles in the projects' risk management practices. Among the 40 questionnaires that were distributed to project managers involved in the program 33 were properly completed & returned, 3 questionnaires was not returned and 4 questionnaires were rejected due to so many omissions in filling. Overall, those 33 questionnaires representing (82.5%) response rate returned with complete responses were used in the analysis.

### 4.2. Demographic Characteristics of the Respondents

Out of those 33 questionnaires that were properly completed and returned, 31 of them are Male respondents representing 93.9% of the total sample. Only 2 of the respondents are Female representing 6.1% of the respondents. As it has been shown in the tables below most of the respondents were categorized under the age group between 31-40 representing 51.5% of the respondent followed by the age group of respondents between 41-50 years representing 36.4%. Whereas, the remaining few respondents were categorized in the age group between 21-30 years, constituting 12.1% of the respondents and none of the respondents fall under the age of 20 years and above 51 years. When we are looking to the educational background of the respondent's majority of the respondents have a Master's Degree representing 55% of the respondents and the remaining 45% of the respondents have a BA degree but there were no respondent having a PhD. and Diploma. Regarding

overall work experience of the respondents, the lion share were taken by the respondents having work experience between 10 and 15 years taking 57%, whereas 30% of the respondents have an overall work experience above 15 years and the rest of the respondents have a total work experience of 6 to 9 years representing 12%. We can understand from the table below that most of the respondents stay in the program from the initiation stage until the closure of the program accounting 58% of the respondents. Whereas respondents stay between service years 1-3 years in the program constitutes 36% of the respondents and 6% of the respondents were participated in the program at the final stage with below 1 year duration.

**Table 2: Respondents characteristics**

Parameters		Frequency	Percent	Total %
Gender	Female	2	6.1%	100%
	Male	31	93.9%	
Age	21-30	4	12.1	100%
	31-40	17	51.5%	
	41-50	12	36.4%	
Educational Background	Degree	15	45%	100%
	Masters	18	55%	
Total Work Experience	6-9 Years	4	12	100%
	10-15 Years	19	57%	
	Above 15 Years	10	30%	
Year of service In the program	Below 1 Year	2	6%	100%
	1-3 Years	12	36%	
	Above 3 Years	19	58%	

Source: Own Survey, 2018



**Table 3: Cross Tabulation Result of Respondents**

<b>Educational Status of the Respondents * Year of Service in the program Cross tabulation</b>						
			<b>Year of Service in the program</b>			Total
			<1	>1<3	>3	
<b>Educational Status of the Respondents</b>	<b>Degree</b>	Count	2	5	8	15
		% within Educational Status the Respondents	13.3%	33.3%	53.3%	100.0%
		% within Year of Service in the program	100.0%	41.7%	42.1%	45.5%
		% of Total	6.1%	15.2%	24.2%	45.5%
	<b>Masters</b>	Count	0	7	11	18
		% within Educational Status the Respondents	0.0%	38.9%	61.1%	100.0%
		% within Year of Service in the program	0.0%	58.3%	57.9%	54.5%
		% of Total	0.0%	21.2%	33.3%	54.5%
<b>Total</b>	Count	2	12	19	33	
	% within Educational Status the Respondents	6.1%	36.4%	57.6%	100.0%	
	% within Year of Service in the program	100.0%	100.0%	100.0%	100.0%	
	% of Total	6.1%	36.4%	57.6%	100.0%	
<b>Age Of the Respondents * Year of Service in the program Cross tabulation</b>						
			<b>Year of Service in the program</b>			Total
			<1	>1<3	>3	
<b>Age Of the Respondents</b>	>21<30	Count	2	1	1	4
		% within Age Of the Respondents	50.0%	25.0%	25.0%	100.0%
		% within Year of Service in the program	100.0%	8.3%	5.3%	12.1%
		% of Total	6.1%	3.0%	3.0%	12.1%
	>31<40	Count	0	9	8	17
		% within Age Of the Respondents	0.0%	52.9%	47.1%	100.0%
		% within Year of Service in the program	0.0%	75.0%	42.1%	51.5%
		% of Total	0.0%	27.3%	24.2%	51.5%

		Count	0 <sub>a, b</sub>	2 <sub>b</sub>	10 <sub>a</sub>	12
	>41<50	% within Age Of the Respondents	0.0%	16.7%	83.3%	100.0%
		% within Year of Service in the program	0.0%	16.7%	52.6%	36.4%
		% of Total	0.0%	6.1%	30.3%	36.4%
Total		Count	2	12	19	33
		% within Age Of the Respondents	6.1%	36.4%	57.6%	100.0%
		% within Year of Service in the program	100.0%	100.0%	100.0%	100.0%
		% of Total	6.1%	36.4%	57.6%	100.0%
<b>Total Year of Experience * Year of Service in the program Cross tabulation</b>						
			<b>Year of Service in the program</b>			Total
			<1	>1<3	>3	
<b>Total Year of Experience</b>	>6<9	Count	2 <sub>a</sub>	1 <sub>b</sub>	1 <sub>b</sub>	4
		% within Total Year of Experience	50.0%	25.0%	25.0%	100.0%
		% within Year of Service in the program	100.0%	8.3%	5.3%	12.1%
		% of Total	6.1%	3.0%	3.0%	12.1%
	>10<15	Count	0 <sub>a</sub>	11 <sub>b</sub>	8 <sub>a</sub>	19
		% within Total Year of Experience	0.0%	57.9%	42.1%	100.0%
		% within Year of Service in the program	0.0%	91.7%	42.1%	57.6%
		% of Total	0.0%	33.3%	24.2%	57.6%
	>15	Count	0 <sub>a, b</sub>	0 <sub>b</sub>	10 <sub>a</sub>	10
		% within Total Year of Experience	0.0%	0.0%	100.0%	100.0%
		% within Year of Service in the program	0.0%	0.0%	52.6%	30.3%
		% of Total	0.0%	0.0%	30.3%	30.3%
Total	Count	2	12	19	33	
	% within Total Year of Experience	6.1%	36.4%	57.6%	100.0%	
	% within Year of Service in the program	100.0%	100.0%	100.0%	100.0%	
	% of Total	6.1%	36.4%	57.6%	100.0%	

As we can see from the above table the relationship between educational status of the respondents and Year of Service in the program, majority of respondents 55% was having a master's degree, from this 55% of the respondents 61% were serving the program for more

than 3 years, whereas none of the master's degree holder were serving the program for below one year. As it has been shown in the table majority of respondents having a degree was serving the program for more than 3 years and fewer in no 2 respondents were served the program for below a year period. This shows that the respondent's educational status is a direct relation with staying in the program for longer period.

When we are looking to the data about showing the relationship between age of the respondents and that of year of service in the program, majority of the respondents who stayed in the program for longer period were fall in the age category between 41 and 50, whereas, those respondent's serving the program for below a year was found in the age group of 21 years and 30. When we look the age category between 31 and 40 their response trend in relation to year of service in the program shows that 75% of the respondents were serving the program between 1 and 3 years. Overall the relationship between ages of the respondent's to service year in the program shows a positive trend, as the age increases the service in the program also increases.

Relationship between total work experience of the respondent's and year of service in the program shows that all 100% of the respondents having a total year of experience more than 15 Years were served the program above 3 years, whereas most of the respondents having a total year of work experience between 10 to 15 were serving the program for a period of 2 year and 3 and also 91.1% of the total respondents in this category served the program between 2 and 3 years. From this data we can understood that the project manager assigned in the program have a reach experience, more attention was given to include experienced project managers.

### 4.3. Responses on Overall Risk Management Awareness

In this part of the questionnaire the respondents were asked questions that are directly related to the research's theme and objective. As the purpose of the study is to assess and describe the risk management implementation practice and challenges of Telecom Expansion Program, the introductory questions were designed to provide general information and insight to the actual risk management implementation practices of program. Respondents were asked to indicate their choice of answer on a five point Likert scale in which 1 represented 'strongly disagree' and 5 represented 'strongly agree'. A mean score of [0-1.5] indicates that the respondents strongly disagreed, mean result between (1.50 - 2.50]

means they disagreed, (2.50 - 3.50] means the respondents were uncertain, (3.50-4.50] means they agreed and a mean above 4.50 indicates the respondents strongly agreed

**Table 4: Responses on Risk Management Awareness**

Item. NO.	Declaration about Overall risk Awareness	Mean	Std. Deviation
1.	There is a risk management policy or manual accessible for all members of the program which will guide on how to manage unexpected outcomes.	4.27	.839
2.	The program has a standardized risk management process flow that clearly understood by all members of the program.	3.88	.820
3.	There is a person or department assigned to handle risk management at the program level.	4.27	.839
4.	Risk management Awareness creation or orientation undertake properly for members of the program.	3.39	.864
5.	Risk management is handled on continues basis.	3.67	.692
	Total	3.89	

Source: Own Survey, 2018

The average mean value of the first five risk awareness factors were rated as good and individual mean of the factors range between 3.3 and 4.2. Individual factors mean values are closer to each other indicating these factors have similar level of significance. The above table indicates that the mean result (4.27) for the question asked to confirm the availability and accessibility of risk management policy or manual was responded with the respondents' agreement. This also supplemented by the interview and secondary data analysis I have seen the manual of the company's risk management policy.

The respondents mean response represent that the program has a standardized risk management process flow that clearly understood by members of the program (3.88) this mean value shows that majority of the respondents agree on the statement, on the meantime the document analysis and the interview confirmed this but regarding the knowledge of every team members I have a drought because it might not be known by everyone in the program except those in a higher positions of the program. Regarding, the question whether there is a person or a department to undertake the risk management responsibility. The mean value (4.27) reveals that most of the respondents agree on the availability of the responsible

person or department in charge of risk management at the program level. Whereas for the questions which describe about the risk management awareness creation training and orientation the result has been counted the mean value of (3.39) which will show that majority of the respondents were uncertain about the risk management orientation and training and responded with disagreement. From the interview I have understood that very few selected members of the program were involved in the risk management training and it will supplement the finding.

The response obtained (3.67) for the question whether risk management conducted on a continual bases or not, indicates that most of the respondents are in agreement with the statement. Also from document analysis and interview I come up with that, there is a so called steering committee composed of higher officials whose responsibility is follow-up risk management and implementation of the proper mitigation strategy in the program on continual bases.

#### 4.4. Responses on Planning Risk Management

Responses from the respondents regarding planning risk management practices and challenges were discussed under this section.

Risks and their management should be planned for in advance in order to avoid any surprises once the project is launched. It is important to plan and decide which way to follow and which approach to take in carrying out risk management activities. The project manager, project teams, key stakeholders and anyone in the project with the responsibility to manage the risk planning activities should hold planning meetings to develop risk management plan (PMI, 2000).

Looking into the practice of the program under the study, the mean value (3.91) for the question asked risk management planning is done systematically with due attention and care; indicate that majority of the respondents agree on the statement. For the statement that declare every stakeholder who have a stack in the program involved or not on risk management planning the mean value is (3.79), it means most respondents believe that every relevant stakeholders involved during planning risk management in the program. Whereas for the question related to involvement of enough risk experts, relevant tools used and meetings held in planning risk management, the resulting mean value is (3.45) which reveal that majority of the respondents replayed they are not certain about the involvement of

expertise and appropriateness of the tools used and responded with disagreement to the statement.

The mean value (3.55) in the above table indicates that most of the respondents agree on the consideration of major risk factors i.e Environmental, Resource availability etc in the program while risk planning was developed. The mean response value (2.64) for the question in regard to proper training acquired by the members of the program on risk handling and future uncertainties reveal that majority of the respondent disagree on the statement, it means the program didn't consider it necessary and didn't provide the appropriate training in connection to risk handling and future uncertainties for the members.

The response from the respondents confirmed that the inclusion of risk management in the programs plan rated the mean value of (3.82) which shows that most of the respondents agree on the statement. Also it's confirmed from my secondary data analysis I have witnessed the inclusion of risk management in the TEP charter.

The overall average mean value of the six questions related to planning risk management (3.52) shows that most of the risk planning factors confirmed with the agreement from the respondents. It means planning risk management was conducted properly in the program

**Table 5: Responses on Planning Risk Management**

Item. NO.	Declarations about Planning Risk Management	Mean	Std. Deviation
6.	Risk management planning is done systematically with due attention and care.	3.91	.678
7.	Every relevant stakeholder who had a stack on the program is involved during the risk management planning.	3.79	.415
8.	Enough risk management expertise are involved, tools used and appropriate meetings held during risk management planning.	3.45	.711
9.	Majority of future risk factors are considered while risk planning is conducted i.e Environmental, Resource availability etc	3.55	.754
10.	Members of the program acquired the proper training on risk handling and future uncertainties.	2.64	.962
11.	Risk management plan was incorporated with program management plan.	3.82	.846
	<b>Total</b>	<b>3.52</b>	

**Table 6: Responses on Challenges of Planning Risk Management**

12. What are the challenges observed during risk management planning? You can choose more than one.	Responses		Percent of Cases
	N	Percent	
a. Lack of support from top management	9	5.7%	27.3%
b. Low level of awareness among stakeholders	29	18.5%	87.9%
c. Unsupportive culture	19	12.1%	57.6%
d. Lack of information and knowledge	19	12.1%	57.6%
e. Lack of practical experience	25	15.9%	75.8%
f. Lack of policy and procedures	8	5.1%	24.2%
g. Lack of expertise to lead RM team	31	19.7%	93.9%
h. Lack of organization support	11	7.0%	33.3%
i. Lack of transparency among stakeholders	6	3.8%	18.2%
<b>Total</b>	<b>157</b>	<b>100.0%</b>	<b>475.8%</b>

Source: Own Survey, 2018

As you can see from the above table response for challenges observed during the process of planning risk management have a total value of score 157, where lack of expertise to lead RM team were often most selected as a challenge by the respondents constitute of 19.7% followed by low level of awareness and lack of practical experience 18.5% and 15.9% respectively. Whereas, both unsupportive culture and lack of information & knowledge about risk management planning having a percentage of 12.1% of the response. The lowest response was exhibited in selecting lack of transparency as a challenge in planning risk management 3.8% of the response.

In general from the responses we can understand that even if the challenges exist in the planning risk management the program's overall result in planning risk management confirmed by the majority of respondents' agreement. Therefore the program's plan risk management result will be enhanced if the right risk management expertise involved in the planning, coordinating and leading risk management team who have the proper training and skill in the area. And also risk management awareness training and orientation must be arranged to improve the team's risk management awareness level.

#### 4.5. Responses to Risk Identification

Potential sources of risk, areas of impact and their causes and potential consequences should be identified at the outset in an effort to generate an exhaustive list of risks that might influence the achievement of its objectives. It is important to address potentially high-risk

tasks, assign probability implicitly to the process, and develop optional contingencies. Regarding such risk identification activities, identification techniques used and observed challenges in the process, responses from respondents are analyzed and presented as follows.

**Table 7 : Responses on Risk Identification**

Item. NO.	Declarations about Risk Identification	Mean	Std. Deviation
13.	There is a room for every stakeholder or team members to list all risks they identified.	3.03	.847
14.	Develop and maintain a sense of ownership among members through allowing them to participate in risk identification.	3.12	.927
15.	Consistent format is used for risk statements to ensure that each risk is understood clearly and unambiguously.	3.39	.788
16.	Risk identification is done as ongoing and iterative process throughout the program.	3.64	.895
17.	Proper risk registration document was developed and updated regularly.	3.79	1.023
	Total	<b>3.39</b>	

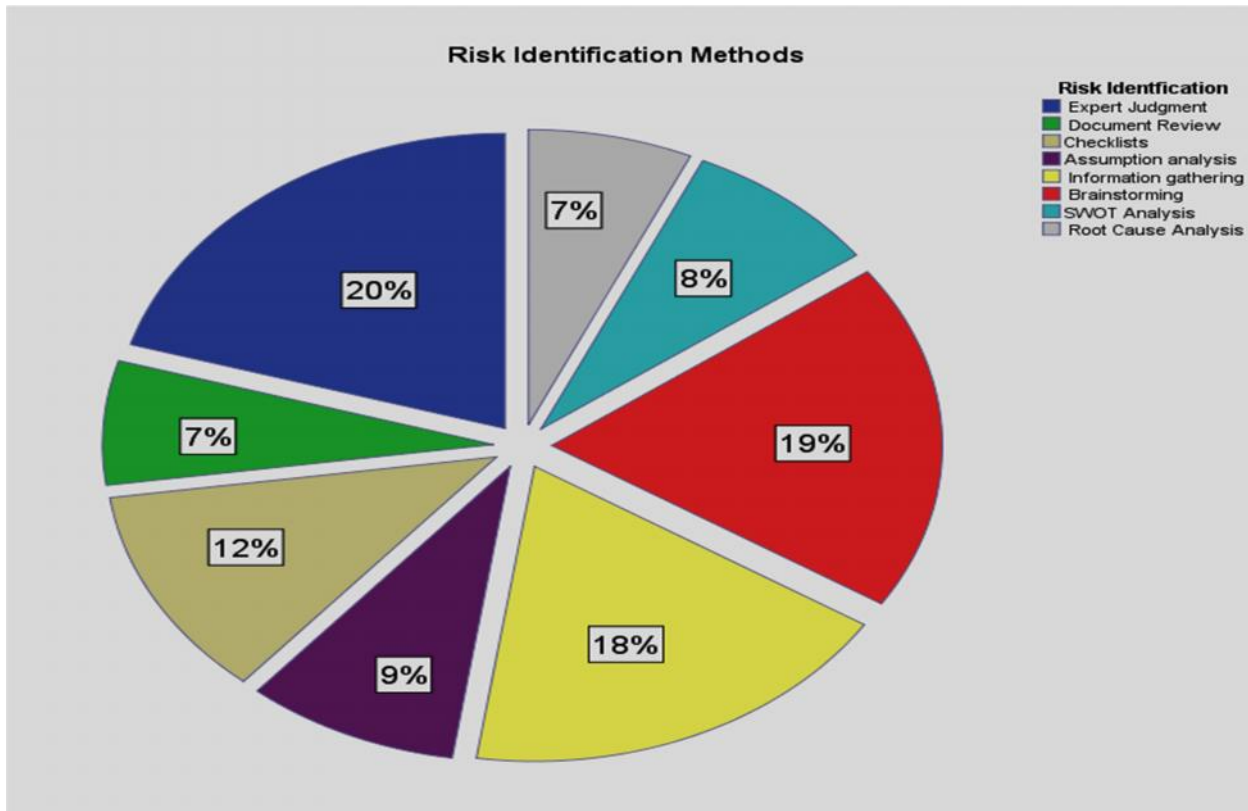
Source: Own Survey, 2018

Responses In relation to availability of allowable chance to every stakeholder to list the observed risk shows (3.03) which shows majority of the respondents are indifferent to the statement and they were disagree with the statement. When we are looking into the individual mean value (3.12) of the response in connection to the question develop and maintain sense of ownership among members through allowing them to participate in the risk identification process shows that most of the respondents confirm that the program doesn't give attention on developing and maintaining the teams sense of ownership and responded with their disagreement and they were not certain about it too. Most of the respondents were uncertain on the statement that declare about consistence of the format used in the risk identification we can understood these from the mean value of (3.39). They mostly responded with agreement for the statement which declared risk identification conducted with an ongoing base and iteratively throughout the program the mean value of the response is (3.64). Responses with regard to the question Proper risk registration document was



developed and updated regularly have a mean value of (3.79) which shows most of the respondents agree on the statement.

Overall average mean value of risk identification process (3.39) shows risk identification process have exhibited a shortfall in the overall process, which means risk identification process must improve in the future process too.



**Figure 4: Response for risk identification Methods**

Source: Own Survey, 2018

In the program most often used risk identification technique is expert judgment which accounts 20% of the multiple response result followed by Brainstorming and Information gathering 19% and 18% respectively, but we can understand from multiple response result that the program use a combination of various techniques for risk identification. Most often used techniques were the combinations of the first four techniques including checklist 12% of the response when it's appropriate.

The interview also supplement this as it was confirmed by the interviewee the risk identification technique used in the program was a combination of various techniques most often use both expert judgment and historical data gathering equally through brainstorming to get an insight of the possible future risks, less likely they use checklist & assumption analysis.

**Table 8: Response on Challenges of Risk Identification**

19. What are the challenges observed during risk identification? You can choose more than one.		Responses		Percent of Cases
		N	Percent	
a.	Lack of support from top management	9	5.5%	27.3%
b.	Low level of awareness among stakeholders	28	17.1%	84.8%
c.	Unsupportive culture	16	9.8%	48.5%
d.	Lack of information and knowledge	17	10.4%	51.5%
e.	Lack of practical experience	23	14.0%	69.7%
f.	Time & budget limitation	13	7.9%	39.4%
g.	Lack of policy and procedures	8	4.9%	24.2%
h.	Lack of expertise to lead RM team	28	17.1%	84.8%
i.	Lack of organization support	11	6.7%	33.3%
j.	Lack of transparency among stakeholders	3	1.8%	9.1%
k.	In appropriate risk management plan	8	4.9%	24.2%
Total		164	100.0%	497.0%

Source: Own Survey, 2018

From the above table we can understand that the most often challenges in the risk identification process emanated from low level of awareness about risk management among stakeholders and that of lack of expertise to lead RM team they have equal share on the response 17.1% of the response each, lack of practical experience in the risk identification also selected as a challenge in the process with having 14% of the total multiple responses. From the total 164 responses 4.9% of the responses show that in appropriate risk management plan was the challenge in risk identification process, and also time and budget allocated for risk identification process were the other challenge in the process 7.9%

In general the programs overall risk identification process is rated as below the expected level and confirmed by the respondents response, most often the risk identification techniques used was a combination of various techniques, expert judgment was the preferred one but it was a challenge to have an expert leading the team, absence of prior experience in risk management and low level of the risk management awareness among stakeholders were contributed for the result.

#### 4.6. Responses to Risk Analysis

The objective of risk analysis is to drill down on potentially high risk tasks to get a more detailed picture of their impacts. After the potential risks have been identified, the project team then evaluates each risk based on the probability that a risk event will occur and the

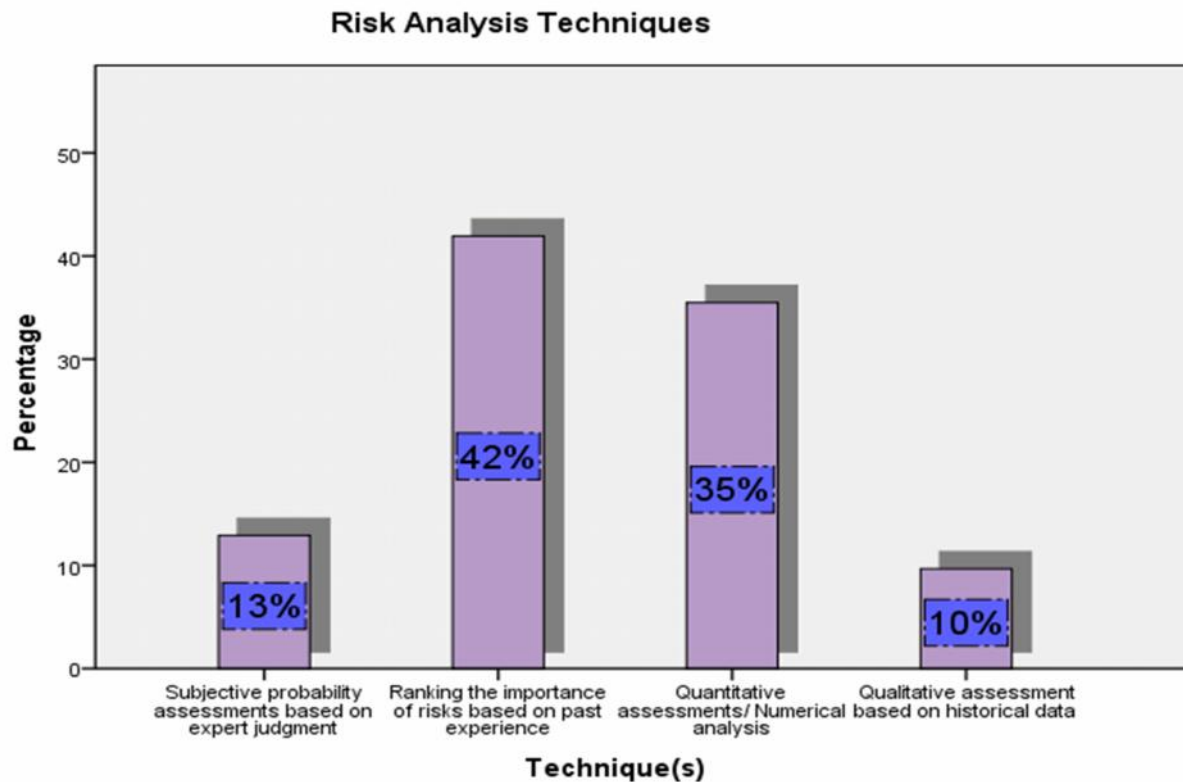
potential loss associated with it. Basically it might not be true to find all risks having equal chance of occurrence and impact on the project. Some risk events are more likely to happen than others, and the cost of a risk can vary greatly. Regarding the risk analysis of the program, analysis techniques employed and observed challenges of risk analysis process are discussed below.

**Table 9: Response on Risk Analysis**

Item. NO.	Declarations about Risk Analysis	Mean	Std. Deviation
20.	Due attention is given for consideration of characteristics of the risk before analyzing the identified risk.	3.55	.666
21.	Proper & consistent measurement system is employed to analyze the identified risks.	3.76	.708
22.	Analyzed risks are segregated into different levels based on their impact and probability of occurrences through quantitative and qualitative analysis.	4.03	.847
23.	The necessary project document update is done consistently after analyzing the risk.	3.94	.864
	Total	3.82	

Source: Own Survey, 2018

The average mean value for risk analysis (3.82) shows that most of the risk analysis factors have confirmed with respondents agreement on the factor rating statements, and also the individual risk factor statement rated between 3.5 and 4.0 it shows consistence of the results. When we look to the individual mean value (3.55) in the above table most of the respondents agree on the statement that declared consideration of characteristics of risks before analyzing the risk identified in the prior steps with due attention. It has been confirmed with the respondents' agreement proper & consistent measurement system is used while analyzing the identified risks of the program, the resulting mean value (3.76) attested this. Whereas, mean value (4.03) in the table above shows most of the respondents agree on the statement of analyzed risks segregated into different levels based on their impact and probability of occurrences through quantitative and qualitative analysis. The last but not least factor considered in risk analysis was to attest the necessary document update is done consistently after analyzing the risk or not, the resulting mean (3.94) shows that majority of the respondents attested the statement with their agreement.



**Figure 5: Response to Risk Analysis Techniques**

Source: Own Survey, 2018

The graph in the above figure shows that most often used techniques in the program's risk analysis were combination of ranking the importance of risks based on past experience with quantitative/numerical analysis, having the 77% share of the multiple response results individually 42% and 35% respectively. Whereas, the remaining 23% of the response shared between subjective probability assessments based on expert judgment and Qualitative assessment based on historical data with having 13% and 10% of the total response respectively.

**Table 10: Responses on Challenges of Risk Analysis**

25. What are the challenges observed during risk analysis? You can choose more than one.		Responses		Percent of Cases
		N	Percent	
a.	Lack of support from top management	7	4.3%	21.2%
b.	Low level of awareness among stakeholders	21	13.0%	63.6%
c.	Unsupportive culture	15	9.3%	45.5%
d.	Lack of information and knowledge	16	9.9%	48.5%
e.	Lack of practical experience	26	16.0%	78.8%
f.	Lack of policy and procedures	12	7.4%	36.4%
g.	Lack of expertise to lead RM team	27	16.7%	81.8%
h.	Lack of organization support	5	3.1%	15.2%
i.	Lack of transparency among stakeholders	9	5.6%	27.3%
j.	In appropriate risk Identification	16	9.9%	48.5%
k.	Time& budget limitation	8	4.9%	24.2%
<b>Total</b>		<b>162</b>	<b>100.0%</b>	<b>490.9%</b>

Source: Own Survey, 2018

As it is shown in the above table the total responses were 162, which shows that every respondent select on average 4.9 challenges from the list mentioned in the question, whereas lack of expertise to lead Risk analysis and lack of practical experience to analyze the identified risk was most often selected by the respondents as a challenge to the process followed by low level of awareness among stakeholders about risk analysis, having percentage contribution of 16.7%, 16.0% and 13% of the responses respectively. In regard to selecting in appropriate risk identification as a challenge to risk analysis process 16 responses are counted it is around 10% of the total responses. They also selected the presence of unsupportive culture as a challenge for risk analysis. Where less likely selected by the respondents is lack of organizational support 3.1% of the response.

In sum risk analysis was having an average mean value of (3.82) show that acceptability of the risk analysis factors by most of the respondents, even there exists challenges in process of undertaking risk analysis most of the respondents reacted to the statement with their agreement on the overall risk analysis of the program and its effectiveness. Hence, if the program takes corrective measure to fix the challenges mentioned often by the respondents can enhance its risk management efficiency and effectiveness.

## 4.7. Responses to Risk Response

Risk response includes specific methods and techniques to deal with known risks and opportunities; it involves planning and execution with the objective of reducing risks to an acceptable level and exploiting potential opportunities. It must be compatible with the RMP and any additional guidance the program manager provides Harold Kerzner (2013). This section discussed about respondents' attitude towards the projects' risk response practice, risk mitigation strategy and challenges observed in the process..

**Table 11: Responses on Risk Response**

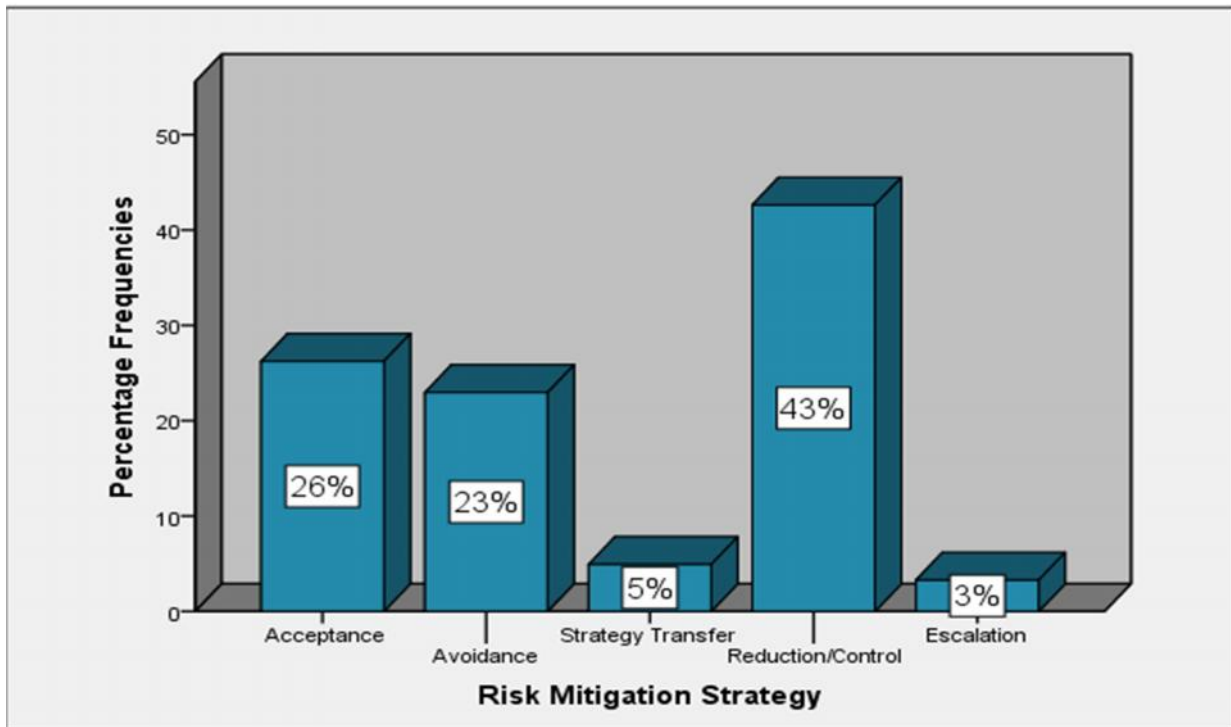
Item. NO.	Declarations about Risk Response	Mean	Std. Deviation
26.	There exists a well-developed risk response strategy in the program.	3.67	1.021
27.	Necessary attention is given for factors such as budget, schedule and resources while responding to risk.	3.39	.747
28.	Risk response selection strategy is highly tied with the goals and objectives of the program	3.36	.822
	Total	3.47	

Source: Own Survey, 2018

The mean value (3.67), in the above table for the question if there is a well-developed risk response strategy within the program to respond to risk, indicates that the program is using a well-developed strategy to respond to risks. Regarding the necessary attention given for consideration of budget, schedule and resources, while responding to risk the mean value is (3.39) which indicate uncertainty & disagreement of majority of the respondents on the consideration of budget, schedule and resources while responding to risk. For the question asking if risk response selection strategy is tied with the goals and objectives of the program, the mean response is (3.36) which imply majority of the respondents are disagree with the statement.

From the overall average mean value (3.47) and the interview held with key informants there is a well-developed risk response strategy in the program but it doesn't give the appropriate attention to consider factors related to budget, schedule and resource when responding to risks. But the interview also supplement the finding in connection to the tied up between risk response selection strategy with goal and objectives of the overall program. They simply focus on consider the potential impact that they reduce using that particularly strategy and lacks comprehensiveness while selecting and adapting the response strategy.

### Risk Mitigation Strategy



**Figure 6: Risk Response strategy**

Source: Own Survey, 2018

Based on the result in the above figure 43% of the total responses chosen where reduction and control as a risk mitigation strategy followed by acceptance (26%), avoidance (23%), transfer (5%) and escalation (3%)

The above result indicates that risk control/Reduction strategy was used as a risk mitigation strategy in the project most often when risk occurs, almost equally used risk mitigation strategies were risk acceptance and avoidance in the program in that risks having a slight impact on the program was accepted with due care in the program and threats with having a less effect on the program's success and high probability of occurrence were mitigated through avoiding that particular threat.

The interview also revealed the finding most often risk mitigation of the program was reduction/control and in a few situations they use acceptance and avoidance whereas transfer is not practiced in the program at all and there were not such a big risk happened that requires escalation due to falling above the authority of the program managers.



**Table 12: Responses on Challenges of Risk Response**

30. What are the challenges observed during risk response? You can choose more than one.		Responses		Percent of Cases
		N	Percent	
a.	Lack of support from top management	9	5.7%	27.3%
b.	Unsupportive culture	14	8.8%	42.4%
c.	Low level of awareness among stakeholders	21	13.2%	63.6%
d.	Lack of information and knowledge	18	11.3%	54.5%
e.	Lack of practical experience	22	13.8%	66.7%
f.	Lack of policy and procedures	9	5.7%	27.3%
g.	Lack of expertise to lead RM team	27	17.0%	81.8%
h.	Lack of organization support	12	7.5%	36.4%
i.	Lack of transparency among stakeholders	7	4.4%	21.2%
j.	Time& budget limitation	10	6.3%	30.3%
k.	In appropriate risk Identification, Analysis and Response Implementation	10	6.3%	30.3%
Total		159	100.0%	481.8%

Source: Own Survey, 2018

As it has been shown in the above table risk response challenges observed in the risk response process of the program constitutes a total of (159) responses, with having an average (4.8) challenges were selected by every respondents for the question instructed to circle as much as possible challenges they observed in the process. From the total responses the least selected was lack of transparency among stakeholders which accounts (4.4%) of the responses, whereas persistently observed challenges in the prior processes are also take the largest share of the responses in this process too, lack of expertise to lead the RM team combined with lack of practical experience and low level of awareness among stakeholders constitutes (70) responses together and individually having percentage contribution of 17%,13.8% and 13.2% respectively. Other challenges were also selected by the respondents but most importantly the above mentioned challenges affect the overall risk response process of the program.

#### **4.8. Responses to Risk Monitoring**

Once you've identified the risk, assessed the probability and impact of the risks, and planned what to do if the risk event occurs, you need to monitor and control the project risks. (PMI 2017) describe Risk monitoring as the process of monitoring the implementation of agreed-



upon risk response plans, tracking identified risks, identifying and analyzing new risks, and evaluating risk process effectiveness throughout the project. Responses with regard to risk monitoring practices of the program and observed challenges are discussed in this section.

The average mean result of (3.52) in the table below shows overall response rating of risk monitoring as good by the respondents for each individual questions, response (3.55) for the question asking the practices of developing a risk log for list of risk and posting it in a visible location for team members review attested by majority of the respondent through agreement to the statement. Regarding the response of (3.61) that asked respondents to confirm about risk management conducted on a regular base in a similar fashion abiding to the standard and the procedure of the risk management of the program in particularly and the organization as a whole, the result indicates that most of the respondents agree on the statement.

With the same fashion the interview result reveal the finding; the interviewee explained that there is a so called steering committee who is composed of program managers and other higher officials take the responsibility for the follow up and monitoring of the program's overall performance, they conduct a meeting in every month during their meeting risk monitoring is always a priority, and the assigned risk expert provides risk status report to the committee. Thus once the risk is identified and analyzed it will be presented to the committee for evaluation, follow up and monitoring. Afterward the risks approved by the committee will appear in the risk register catalog for follow up and monitored properly.

Most likely responses of the respondents agree on the statement that declared according to current result of the program risks are monitored properly, the mean value (3.48) indicate their agreement. For the question that asked the respondents to rate the tied up between risk monitoring with the goal and objectives of the program the mean value (3.45) indicate that most of the respondents are not certain and disagree with the statement.

**Table 13: Responses on Risk Monitoring**

Item. NO.	Declarations about Risk Analysis	Mean	Std. Deviation
31.	There is a practice of developing a risk log for list of risks to be managed and posting them in a visible location for team members' review.	3.55	.971
32.	Risk management Monitoring is conducted on a regular bases to check whether or not the process going in line with the standard and the procedure	3.61	.788
33.	Based on the current result of the program risks are monitored properly	3.48	.712
34.	Risk monitoring practices are highly tied with the goals and objective of the program.	3.45	.833
	Total	3.52	

Source: Own Survey, 2018

**Table 14: Responses on Challenges of Risk Monitoring**

35.What are the challenges observed during risk monitoring? You can choose more than one.		Responses		Percent of Cases
		N	Percent	
a.	Lack of support from top management	10	6.1%	30.3%
b.	Low level of awareness among stakeholders	20	12.3%	60.6%
c.	Unsupportive culture	15	9.2%	45.5%
d.	Lack of information and knowledge	16	9.8%	48.5%
e.	Lack of practical experience	24	14.7%	72.7%
f.	Lack of policy and procedures	8	4.9%	24.2%
g.	Lack of expertise to lead RM team	28	17.2%	84.8%
h.	Lack of organization support	12	7.4%	36.4%
i.	Lack of transparency among stakeholders	11	6.7%	33.3%
j.	In appropriate risk Identification, Analysis and Response Implementation	10	6.1%	30.3%
k.	Time& budget limitation	9	5.5%	27.3%
	Total	163	100.0%	493.9%

Source: Own Survey, 2018

It is observed in the table above each individual respondent select on average (4.9) challenges from the list mentioned in connection with risk monitoring process of the program. From the aggregate (163) responses most often selected challenge is still lack of expert to lead RM Team having a score value of response (28) constituting (84.8%) of the total (33)

respondents followed by lack of practical experience which accounts (72.7%) response from the total respondents of (33), but the impact of low level of awareness among stakeholders also contribute significantly for the most challenges (60.6%) as it was selected by most of the respondents. Lack of information & knowledge about risk monitoring constitutes (48.5%) of the respondents. Whereas, least selected by the respondent as a challenge in risk monitoring process is lack of policy and procedure that guide the risk monitoring process of the program. In general, risk monitoring is rated as good with having overall rating from the respondents (3.52), besides having the listed challenges above the overall risk monitoring practices of the program were good.

# CHAPTER FIVE

## 5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter summary of the major findings of the study, conclusions derived from data analysis and recommendations that are suggested by the researcher based on the results to enhance effective implementation of the risk management in the future endeavor of the company will be covered.

### 5.1. Summary of Findings

This study attempted to examine the challenges of risk management implementation practices of ethio telecom, Telecom Expansion Program in line with the five major risk management processes. Based on the data analyzed in the previous chapter the following findings are summarized:

- According to the respondents' response and the interview conducted related to the general questions on risk management awareness of the program members, it is found that there is a good practice in terms of developing a policy or a guideline. Based on the result of the analysis the company assigns risk personnel to handle future uncertainties of the program but lacks equipping them with the necessary training. The finding result also showed that risk management is performed on continual bases.
- The finding reveal that Planning risk management was performed systematically, but it lacks involvement of expert and other stakeholders and lacks comprehensiveness. Where Inclusion of risk management in the program plan was attested by both the interview and respondents response.
- The interview result revealed that Risk identification is performed in decentralized way and reported to the steering committee. But it is done in an ongoing and iterative manner by each concerned section and the steering committee evaluates the risk status on a weekly meeting. Also the document analysis and the interview result supplements the response of having a good culture for development of risk register and updating it on a regular base.
- The finding result reveal that risks that reached in the analysis stage is more attentively seen by all concerned section or department as it is in the eyes of the

steering committee. The finding of the analysis about method of risk analysis revealed that risk is analyzed in terms of its impact and probability of occurrence through assigning numerical value and segregated into different levels.

- Responses and interview result regarding risk response reveal that Risk response strategy is not developed well, the necessary attention for considering factors i.e budget, schedule and resource were ignored and they lack timing risk response with the goal and the objective of the program. Responses related to risk mitigation strategy shows that the program most often employed reduction/ control and knowingly and unknowingly accept risks. The findings reveal that transfer is less practiced in the program unless transferring risks based on contractual agreement there were no consideration to transfer risks to insurance companies.
- The findings on risk monitoring imply that the program are doing fairly good in terms of keeping track of identified risks, monitoring residual risks and ensuring execution of risk plans to evaluate their effectiveness.
- The respondents' response on risk management challenges observed throughout the risk management process reveal that lack of expertise to lead the RM team, lack of practical experience, lack of knowledge and information and low level of awareness among stakeholders were observed persistently in the processes.

## **5.2. Conclusions**

The company's effort through developing risk management policy and manuals to guide staffs and section in handling of unexpected future uncertainties is found to be encouraging. When the program develops their risk management plan requires to be more systematized and to allow involvement of relevant stakeholders but the program lacks this aspect when performing risk management planning.

Assigning the responsibility to concerned department or section in risk identification process can be taken as a good practice but it is highly tied with their capacity and experience. Once risk identification performed poorly it may also affect the analysis and the response strategies to be design, so the company is expected to make the right decision in relation to risk identification.

It is obvious to observe things get the full attention of others in the lower level of the organization hierarchy in all aspects when those activities are in the mind and eyes of higher

official. Hence it's observed here in the program once risks identified and approved for the analysis they will get the attention and follow up of the so called steering committee, and all concerned attested to undertake it properly. In this regard risk analyses were performed well in the program but steps taken in the prior stages of risk identification highly affect the steps consistency.

Each section/ department identifying the potential risk is expected to provide list of risks along with the response plan, hence it will lack consideration for availability of resource, schedule and budget. In the meantime it will also miss the concept of tiding risk response strategies with the goal and objectives of the program.

Monitoring is done in a continual base in terms of keeping track of identified risks, monitoring residual risks and ensuring execution of risk plans to evaluate their effectiveness with the involvement of higher official or steering committee all in all risk monitoring practices of the program is encouraging.

It's commonly observed challenge in the program's risk management implementation processes, lack of skilled manpower leading the risk management team, low level of awareness and unsupportive culture of the organization is the other factor having the potential impact in the risk management process of the program. Risk management has been considered as a task of the assigned personnel alone and seeing risks only from the down side is a common practice observed. Other challenges related to absence of transparency of stakeholders, Lack of organizational support and lack of support from top management, were also exist at the organization and at the program level.

In general, the company is showing progress in managing risks by their own way. At the program level cost and schedule impacts that come as a result of risk were also minimized to a great extent by forming the steering committee that is in charge of monitoring the risk management progress through having continues follow-up. But still the little attention given to proper risk identification created high and negative cost, schedule and quality impacts in the program. Despite, such challenges the overall progress and performance of the program's risk management implementation effort is found on an encouraging status.

### 5.3. Recommendations

Based on the findings mentioned above and research objectives of the study the following recommendations are made by the researcher;

- ✓ Allowing people to have a part on your decision will enhance the concern of those involved in that decision, therefore the company should involve ever relevant stakeholders in the development of risk management planning to benefit from looking things from different aspects and to create sense of ownership among team members.
- ✓ Putting all the risk identification responsibility to the concerned department alone is not enough because people may include or oversight risks due to fear of the unknown and to protect themselves from future responsibility associated with their mistake. So the company must change this way of doing risk identification and it should be supported and backed up by all concerned experts.
- ✓ Allocating resource for training and orienting people about their work will benefit the company to enjoy from effective performance of the employees through making them confident and skillful in their action. Therefore the company must allocate the necessary budget to equipped staffs assigned in risk management through training, seminar & workshop in the areas of risk management.
- ✓ Organizations may find difficulty to get skilled manpower internally as ethio telecom suffer from lack of risk management expertise, and the company must see other alternatives like hiring a consulting firm on contractual bases or permanent bases and transferring potential risks to other party through contractual agreement or insurance.
- ✓ Risk management must not be the concern of a department and personnel assigned to handle the process but it should be everybody's concern, in this regard the company must take a practical action to enhance the level of risk awareness among members of the program in particular and in the company as a whole through arranging awareness creation program.
- ✓ Keeping the good practice of recording lesson learning document have to be continue in more systematized way; hence it will serve as a stepping stone in the future risk management endeavor.
- ✓ Finally, the researcher recommend that the company can take this study as a stepping stone for further investigation and shall make an exhaustive survey in all projects and must take action to benefit from managing its risk.

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## ANNEX- I: QUESTIONNAIRE

Addis Ababa  
University  
(Since 1950)



**Addis Ababa University College of Business and Economics**

**School of Commerce**

**Master of Art in Project Management**

Dear Participants:

My name is Daniel Kebede, a graduate student of Master of Project Management in the extension program at Addis Ababa University School of Commerce. As part of the program I am working on my research work, on the topic “**Assessment of the Challenges of Risk Management Implementation in ethio telecom, Telecom Expansion Program**”. The objective of this study is purely for educational purpose and it will not be used for any other purpose. I would also like to reassure you that all information will be treated in strict confidentiality.

Therefore I kindly request you to provide your opinion and observation through completing this questionnaire. I also sincerely request you to respond to the questions as honestly as possible and return the completed questionnaires.

In case of any question or dilemma please contact me via E-mail-[canudan@yahoo.com](mailto:canudan@yahoo.com) or through my phone +251-911-317404

**“Thank you in advance for your cooperation & time”**

### **General Instruction and information:**

- I. You aren't expected to write your Name
- II. Please put (√) on the appropriate number for the five point scale questions and circle the letter(s) of your choice for the multiple choice questions that best describes how you perceive the project applies project risk management where:

Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4 and Strongly Agree = 5.

## Part I. General Information

1. **Age:** A. Below 20    B. 21-30    C. 31-40    D. 41-50    E. Above 51 years
2. **Gender:** A. Female B. Male
3. **Educational Status:**                      A. Diploma    B. Degree    C. Masters    D. PhD.
4. How long you work in the **program**? \_\_\_\_\_

## Part II. Questions about Project Risk Management

Key for your answer

Strongly Disagree = 1	Disagree = 2	Uncertain = 3	Agree = 4	Strongly Agree = 5
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s/n	Declarations about Risk Awareness	Measurement scale				
		1	2	3	4	5
1.	There is a risk management policy or manual accessible for all members of the program which will guide on how to manage unexpected outcomes.					
2.	The program has a standardized risk management process flow that clearly understood by all members of the program.					
3.	There is a person or department assigned to handle risk management at the program level.					
4.	Risk management Awareness creation or orientation undertake properly for members of the program.					
5.	Risk management is handled on continues basis.					

### Plan Risk Management

s/n	Declarations about Planning Risk Management	Measurement scale				
		1	2	3	4	5
6.	Risk management planning is done systematically with due attention and care.					
7.	Every relevant stakeholder who had a stack on the program was involved during the risk management planning.					
8.	Enough risk management expertise are involved, tools used and appropriate meetings held during risk management planning.					
9.	Majority of future risk factors are considered while risk planning is done i.e Environmental, Resource					

	availability etc					
10.	Members of the program acquired the proper training on risk handling and future uncertainties.					
11.	Risk management plan was incorporated with program management plan.					

12. What are the challenges observed during risk management planning? You can choose more than one.

- |  |   |
|--|---|
| a) Lack of support from top management       | f) Lack of policy and procedures          |
| b) Low level of awareness among stakeholders | g) Lack of expertise to lead RM team      |
| c) Unsupportive culture                      | h) Lack of organization support:          |
| d) Lack of information and knowledge         | i) Lack of transparency among stakeholder |
| e) Lack of practical experience              |   |

If any \_\_\_\_\_

### Risk Identification

s/n	Declarations about Risk Identification	Measurement scale				
		1	2	3	4	5
13.	There is a room for every stakeholder or team members to list all risks they identified.					
14.	Develop and maintain a sense of ownership among members through allowing them to participate in risk identification.					
15.	Consistent formats used for risk statements to ensure that each risk is understood clearly and unambiguously.					
16.	Risk identification is done as ongoing and iterative process throughout the program.					
17.	Proper risk registration document was developed and updated regularly.					

18. Which risk identification method was used in the program? You can choose more than one.

- |                        |                          |
|------------------------|--------------------------|
| a. Expert Judgment     | e. Information gathering |
| b. Document Review     | f. Brainstorming         |
| c. Checklists          | g. SWOT Analysis         |
| d. Assumption analysis | h. Root Cause Analysis   |

If any \_\_\_\_\_

19. What are the challenges observed during risk identification? You can choose more than one.

- a) Lack of support from top management
- b) Low level of awareness among stakeholders
- c) Unsupportive culture
- d) Lack of information and knowledge
- e) Lack of practical experience
- f) Time & budget limitation
- g) Lack of policy and procedures
- h) Lack of expertise to lead RM team
- i) Lack of organization support
- j) Lack of transparency among stakeholders
- k) In appropriate risk management plan

If any \_\_\_\_\_

### Risk Analysis

s/n	Declarations about Risk Analysis	Measurement scale				
		1	2	3	4	5
20.	Due attention is given for consideration of characteristics of the risk before analyzing the identified risk.					
21.	Proper & consistent measurement system is employed to analyze the identified risks.					
22.	Analyzed risks are segregated into different levels based on their impact and probability of occurrences through quantitative & qualitative analysis.					
23.	The necessary project document update is done consistently after analyzing the risk.					

24. Which of the following technique(s) are used to assess the probability of risk occurrence in the project?

- a. Quantitative assessments/ Numerical analysis
- b. Subjective probability assessments based on expert judgment
- c. Ranking the importance of risks based on past experience
- d. Qualitative assessment based on historical data

If any \_\_\_\_\_

25. What are the challenges observed during risk analysis? You can choose more than one.

- a. Lack of support from top Management
- b. Low level of awareness among stakeholders
- c. Unsupportive culture
- d. Lack of information and knowledge
- e. Lack of practical experience
- f. Lack of policy and procedures
- g. Lack of expertise to lead RM team
- h. Lack of organization support

- i. Lack of transparency among stakeholders
- j. In appropriate risk identification
- k. Time & budget limitation

If any \_\_\_\_\_

### Risk Response

s/n	Declarations about Risk Response	Measurement scale				
		1	2	3	4	5
26.	There exists a well-developed risk response strategy in the program.					
27.	Necessary attention is given for factors such as budget, schedule and resources while responding to risk.					
28.	Risk response selection strategy is highly tied with the goals and objectives of the program.					

29. Which of the following technique(s) are mostly adopted as a risk mitigation strategy in the program? You can choose more than one.

- a. Acceptance
- b. Avoidance
- c. Transfer
- d. Reduction/Control
- e. Escalation

If any \_\_\_\_\_

30. What are the challenges observed during risk response? You can choose more than one.

- a. Lack of support from top Management
- b. Low level of awareness among stakeholders
- c. Unsupportive culture
- d. Lack of information and knowledge
- e. Lack of practical experience
- f. Lack of policy and procedures
- g. Lack of expertise to lead RM team
- h. Lack of organization support
- i. Lack of transparency among stakeholders
- j. In appropriate risk identification, analysis
- k. Budget & Time limitation

If any \_\_\_\_\_

### Risk Monitoring

s/n	Declarations about Risk Monitoring	Measurement scale				
		1	2	3	4	5
31.	There is a practice of developing a risk log for list of risks to be managed and posting them in a visible location for team members' review.					
32.	Risk management Monitoring is conducted on a regular bases to check whether or not the process going in line with the standard and the					

	procedure					
33.	Based on the current result of the program risks are monitored properly					
34.	Risk monitoring practices are highly tied with the goals and objective of the program.					

35. What are the challenges observed during risk monitoring? You can choose more than one.

- a. Lack of support from top Management
- b. Low level of awareness among stakeholders
- c. Unsupportive culture
- d. Lack of information and knowledge
- e. Lack of practical experience
- f. Lack of policy and procedures
- g. Lack of expertise to lead RM team
- h. Lack of organization support
- i. Lack of transparency among stakeholders
- j. In appropriate risk identification, analysis, response implementation
- k. Budget & Time limitation

If any \_\_\_\_\_



## **ANNEX- II: INTERVIEW CHECKLISTS**

**Addis Ababa University College of Business and Economics**  
**School of Commerce**  
**Master of Art in Project Management**  
**Interview Guide for Risk Management Department Staffs**

Dear Participant,

This Semi-structured interview is designed to conduct a research on the topic **“Assessment of the Challenges of risk management Implementation in ethio telecom, Telecom Expansion Program”**. The purpose of the study is for the partial fulfillment of the requirement of MA degree in Project Management.

For the successful accomplishment of the study, the response of employees of the company will have pivotal role by being used as valuable input for the study. So, you are kindly requested to genuinely react the interview questions.

**Thank you in advance for your cooperation!**

1. How do you express risk management practices of the company? What is the Risk management culture of the company?
2. How risk is managed in the company? Is there any difference between operational risk management and project risk management?
3. How do you evaluate the availability of risk management policy or procedural manual and its accessibility to all stakeholders? In what interval will it be updated?
4. Does the company have standardized risk management process flow that clearly understood by all members of the company?
5. Can you explain the level of the stakeholder’s involvement in risk management process? i.e In risk management plan, Identification, Analysis, response and monitoring & follow up process.
6. Does the company allocate the necessary resource and budget for risk management?

7. Does the company provide the proper training on risk handling and future uncertainties?
8. What are the most common challenges of risk management implementation in the company?
9. Do you think effective risk management system enhance company's performance?
10. Do you think effective and appropriate risk management tools available in the company? If so what are the tools that enhance effectiveness in risk management practices?

**Addis Ababa University College of Business and Economics**  
**School of Commerce**  
**Master of Art in Project Management**  
**Interview Guide for Program Managers**

Dear Participant,

This Semi-structured interview is designed to conduct a research on the topic **“Assessment of the Challenges of risk management Implementation in ethio telecom, Telecom Expansion Program”**. The purpose of the study is for the partial fulfillment of the requirement of MA degree in Project Management.

For the successful accomplishment of the study, the response of employees of the company will have pivotal role by being used as valuable input for the study. So, you are kindly requested to genuinely react the interview questions.

**Thank you in advance for your cooperation!**

1. Can you briefly explain about risk management system in the program? Is there a standard risk management process which is being followed in the program?
2. Is there a standardized or formal documented process on how to manage uncertainties in the program? What is the current practice of risk management in the program?
3. Did Risk management Awareness creation or orientation undertake properly for members of the program?

4. Are team members in the program aware on how to manage risk in a way that doesn't affect the objective or goal of the program?
5. Is there a person or department assigned to handle risk management at the program level? At which stage of the program are risks managed in the program?
6. Do you think Risk management planning is done systematically with due attention and care? Who will be involved? How they are selected?
7. Can you say every relevant stakeholder is involved in the risk management planning? Enough expertise involved and appropriate tools used?
8. Are risks that might occur identified early while the program is at startup phase? And what methods are used to identify them?
9. How frequently risk identification is done throughout the program? Did Proper risk registration document developed and updated regularly?
10. Is there a well-developed risk response strategy in the program? How its selection strategy is tied with the goals and objective of the program? Which risk mitigation strategy is preferred mostly? Why?
11. How do you express risk monitoring practices of the program? Is there a practice of developing a risk log for list of risks to be managed?
12. What are the challenges observed during risk management implementation process? How do you express their impact?
13. What were the strategies used to overcome such a situation? How it was effective in line with cost, time and objective of the program?
14. Do you think risk management implemented properly in cost effective way and proactively?
15. Do you believe proper risk management benefit the company & enhance success on the program?