



## ASSESSMENT OF PROJECT RISK MANAGEMENT PRACTICES IN ETHIOPIAN-TELECOMMUNICATION SECTOR: THE CASE OF MOBILE MONEY PROJECTS

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### Abstract

*This research critically explores the risk management strategies utilized in Ethio Telecom's Mobile Money initiative, with particular emphasis on the systematic processes of risk planning, identification, analysis, response, monitoring, and control. Primary data were obtained from 184 purposively selected respondents and analyzed using SPSS software, applying descriptive statistical methods to present the quantitative results. In addition, qualitative data were collected through semi-structured interviews with four project managers and triangulated with secondary sources, such as project documentation and internal reports from Ethio Telecom. The findings reveal that although the project adopts a structured, phased approach to risk management, there is a significant shortfall in the involvement of specialized risk management professionals. Moreover, the risk assessment practices are predominantly centered on time, schedule, cost, and deliverable-related risks, which may lead to the neglect of broader, more strategic risk factors. Despite this, the project demonstrates consistent practices in risk monitoring and control throughout its implementation phase.*

*In light of these results, the study recommends the enhanced integration of comprehensive risk management principles, aligned with established theoretical frameworks, to strengthen the effectiveness of risk mitigation strategies. Such alignment is crucial to bolstering the project's resilience to uncertainty and ensuring sustainable operational performance within Ethiopia's evolving mobile financial services landscape.*

**Keywords:** Mobile Money (Telebirr), project risk management, risk assessment process, risk mitigation, Ethio Telecom.

### 1. INTRODUCTION

Telecommunication industry is a very essential sector in the economy of any country as it is an enabler of economic and social transformation, improves access to basic services, and enhances connectivity and creation of employment opportunities (World Economic Forum, 2015). Mobile communication has experienced tremendous growth over the past decade due mainly to the availability, affordability, advanced computing and communication capability of smart mobile computing devices (Thapar & Karmakar, 2016).

The Mobile Money (TeleBirr) Project is the main focal point of this research work. Launched in 2021, Ethio Telecom's TeleBirr platform now processes over 5 billion Birr in daily transactions, with a total customer transaction value exceeding 1.7 trillion Birr so far. With 41.1 million subscribers and Tele Birr emerging as a payments backbone for economic sectors, Ethio Telecom retains instrumental influence (Ethio Telecom annual report,2024).

Mobile money refers to mobile telephone-based financial services offered by telecommunication service companies (Forden, 2015). Mobile Money Transfer (MMT) is an innovation that uses Information and Communications Technology (ICT) infrastructure of Mobile Network Operators (MNOs), which provide telephony services such as voice, data, and short messages services (SMS) to enable customers to communicate and transfer money through their mobile phones (McCusker, 2000). Project Risk Management is a vital aspect of project management, addressing risks that may negatively or positively affect the project's goals. Risks can be identified and plans put in place if they occur, while others must be dealt with as they occur (Lewis, 2011).

## 2. BACKGROUND OF THE STUDY

The data suggest that there remains considerable room for improvement in project risk management practices within Ethiopia. Although the study by Tesfamichael (2018) on Ethio Telecom does not offer detailed insights into the organization's risk management framework, research conducted on the Commercial Bank of Ethiopia by Berhe (2016), Nigussie (2016), and Fikadeselassie (2015) highlights the existence of a relatively structured risk management environment. These studies report a general awareness of risk management among employees, efforts in risk identification and prioritization, and the availability of tools and guidelines to support the process. Nonetheless, despite these advancements, the overall effectiveness of risk management in Ethiopian projects remains limited (Tsfamichael, 2018).

Tsfamichael (2018) also found that Ethio Telecom lacked a comprehensive risk management strategy that effectively integrates key dimensions such as budget, schedule, resource allocation, and quality considerations. Furthermore, the organization's monitoring and control mechanisms were deemed inadequate. Supporting these findings, Asmare (2017) identified critical gaps in the identification and handling of risks within Ethio Telecom's Information Systems projects, indicating that the risk management processes in place are fragmented and incomplete.

The present study seeks to re-evaluate whether Ethio Telecom has made significant improvements in its project risk management practices, particularly in light of earlier findings that highlighted persistent weaknesses in risk management across various Ethiopian projects. This assessment draws upon both prior research and the established guidelines of the Project Management Body of Knowledge (PMBOK), which outline best practices for effective risk management. Considering the strategic significance and rapid expansion of the Telebirr mobile money platform, it is essential to assess the extent to which Ethio Telecom has advanced its capabilities in identifying, mitigating, and managing project risks. Through a focused examination of the current risk management practices employed in the Telebirr project, this study aims to enhance the broader understanding of effective risk management approaches within the Ethiopian project environment.

Given the novelty of mobile money services in Ethiopia, there is a scarcity of local research on risk management in this domain. This study addresses the gap by comparing Ethio Telecom's risk management practices in the Telebirr project with PMBOK best practices.

### 3. LITERATURE REVIEW

#### 3.1 Project Risk Management

Risk management encompasses a series of interconnected activities, including risk planning, identification, analysis, response, and monitoring and control (Kerzner, 2009). These processes are typically iterative and continuously updated throughout the project lifecycle. Decision-makers are responsible for identifying, analyzing, and evaluating risks at every stage of the project life cycle, utilizing their organizational structure and administrative practices to address risks in favor of project success.

Project Risk Management processes (PMI, 2017) are: Plan Risk management, Identify Risks, Perform Qualitative and Quantitative Risk Analysis, Plan Risk Responses, Implement Risk Responses and Monitor Risks.

**Plan Risk Management:** To establish a solid foundation for risk management within an organization, the planning process involves developing policies, identifying the necessary steps to be taken and their sequential order, determining required resources, estimating timeframes, assigning responsibilities, and potentially incorporating training and seminars to enhance staff members' proficiency in risk management (PMI, 2013).

By organizing a risk management strategy through effective planning, the likelihood of success for both the project and the employed risk management techniques is increased (Wysocki, 2014).

Planning is crucial to establish a consensus-driven risk assessment framework and to ensure adequate time and resources are allocated for risk management. The process of planning risk management should commence during project conception and be completed early in the project phase (PMI, 2013).

**Identify Risks:** According to Frame (2002), the process of identifying risks can concentrate on both internal and external risks, predictable versus unpredictable risks, controllable versus largely uncontrollable risks, and technical versus nontechnical risks.

Kerzner (2009), risk identification needs to be done at every stage of the project and the process must focus on the risk's source rather than the event or its outcome. This is because the risk-taker has some control over the risk's origins but little control over the event or its consequences (Roberts and Wallace, 2004).

**Perform Qualitative Risk Analysis:** PMI (2015) defines the process of evaluating and aggregating the severity of risks to determine which ones warrant additional investigation or action known as qualitative risk analysis. It is feasible to rank, classify, and identify which risks are high priorities using qualitative analysis. The risks that need immediate attention, those that require more investigation, and those that are low priority enough to be kept on a watch list can then be identified. Project managers can focus on high-priority risks and the most likely and problematic ones, as well as lower the level of uncertainty, thanks to this process, which is its main advantage (Richardson, 2015).

**Perform Quantitative Risk Analysis:** The process of quantitatively assessing the combined impact of identified individual project risks and other sources of uncertainty on overall project objectives is known as performing quantitative risk analysis. This process's main advantage is that it measures the total amount of risk associated with the project and can also yield more quantitative risk data to help with risk response planning. While not necessary for every project, this procedure is followed throughout the project when it is used (PMI, 2017).

**Plan Risk Responses:** Understanding the project and the midstream effects of different corrective actions is necessary for planning a response to risk. You design schedule impacts and risk scenarios. According to Barkley (2004), an "expected" scenario represents the most likely outcome, a "pessimistic" scenario represents the worst-case scenario, and an optimistic scenario represents the "best

case". Minimize individual risks, maximize individual opportunities, and lower overall project risk exposure with well-thought-out risk responses.

**Implement Risk Responses:** Creating plans to deal with risk events is the focus of risk response planning. PMI (2017) lists five substitutes. Identifying the risk response strategy (ices) to be used and developing the plan to put the strategy (ices) into action are the two main tasks of risk response planning. Among the potential reaction tactics are:

- Escalate-Escalating means passing the risk up to someone else to deal with because the team and/or the project sponsor believe it's something that is outside of the scope of the project.
- Avoidance/elimination- the pursuit of a completely different approach to the task thus eliminating the risk.
- Transfer-moving the risk elsewhere (to a supplier, to an insurer).
- Mitigation-developing a plan to reduce the consequence and/or the likelihood of a risk event occurring.
- Acceptance-allowing the risk to remain and dealing with the consequences if it happens.

**Monitor Risks:** Finding important risk milestones or places in the project timeline where risk decisions must be made is the first step in risk monitoring. These benchmarks would indicate whether a piece of machinery or an important resource was operational (Barkley 2004).

Callahan and Brooks (2004) define monitoring and controlling risks as the process of putting risk response plans into action, keeping track of identified risks, keeping an eye on residual risks, finding new risks, retiring problems and/or risks, modifying contingencies, and assessing the efficacy of the risk process throughout a project. Continuous risk monitoring ensures risks are detected and managed and that risk response actions are implemented and effective. Risk monitoring continues for the life of the project.

### 3.2 CONCEPTUAL FRAMEWORK

Conceptual design is a conceptual framework used to define elements and their relationships in a study. Mugenda (2008) defines the topic as a brief description of what is happening in education, a graphic or visual explanation of significant changes in education. According to Young (2009), the concept of design is a representation that shows the relationship between dependence and independence. This study aims to evaluate the risk management plan of Ethiopian Telecom, taking Mobile Money as an example, and fill the gap in the company's risk management risk knowledge and actual behavior. The difference in this context is effective risk management, whereas risk management, risk analysis, risk assessment, risk planning, risk management and control are independent variables. The design concept explains the relationship between the risk management process and the effective risk management system.

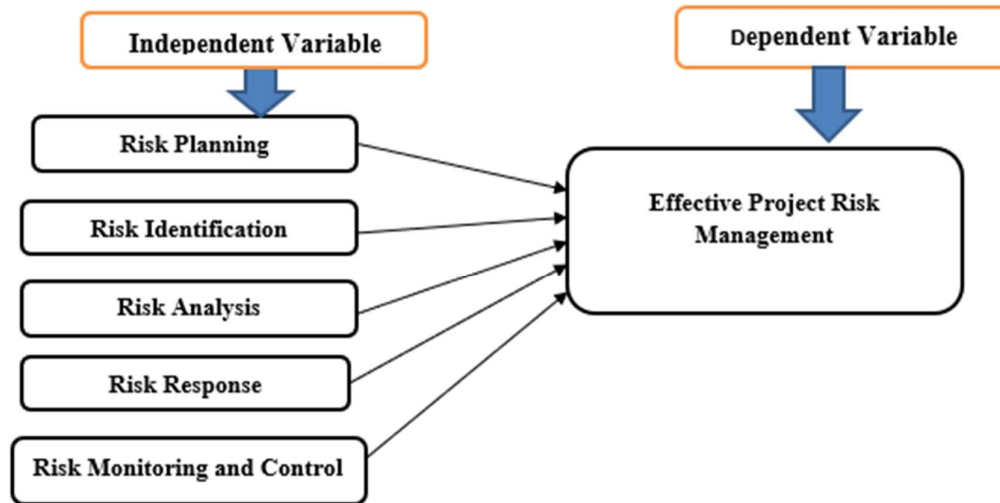


Figure 1: Conceptual framework

#### 4. OBJECTIVES/AIMS

The study has three specific objectives, that are to study;

- To assess how project risk planning practice at Ethiopian Telecommunication sector.
- To investigate project risk identification and analysis practices.
- To discuss which risk response, controlling and monitoring strategy is mostly applied.

The primary research questions that guide this study;

- **RQ1.** How does Ethiopian Telecommunication plan for project risk management?
- **RQ2.** What methods does Ethiopian Telecommunication use to identify and analyze project risks?
- **RQ3.** Which risk response, control, and monitoring strategies do they use most often?

#### 5. RESEARCH METHODOLOGY

The research adopted both qualitative and quantitative approaches, utilizing a descriptive design with a survey method for data collection. The study employed SPSS software for analysis to address the research objectives and present the results through frequency tables, percentages, means, and standard deviations.

Purposive sampling techniques were used to select the samples, focusing exclusively on full-time employees. The eligibility criteria included employees willing to participate in the study, with a minimum of three years of experience, involvement in all phases of the Mobile Money project, and at least a diploma.

From a total population of 387, Yamane's formula for sample size determination was applied, resulting in a calculated sample size of 192. The researcher distributed questionnaires to ensure representation from project managers and team members involved in all phases of the Mobile Money project. Efforts were made to maintain the generalizability of the sample to the overall population (Henry, 1990).

The demography of the samples is shown on table 1 below.

Table-1 Sample Demography

Sample Description (N= 184 )		
Respondent Attributes	Quantity (Frequency)	Percentage
Gender		

Male	102	55 %
Female	82	45%
<b>Age</b>		
20 - 30 years	58	32%
31-40 years	88	48 %
41 - 50 years	32	17 %
above 50 years	6	3%
<b>Education</b>		
Diploma	8	4%
Degree	120	65%
Masters	56	30%
<b>Position in the project</b>		
Manager	21	11%
Non-managers	163	89%

These findings provide an overview of the demographic and professional characteristics of the respondents in the assessment of project risk management practices within the Ethio Telecom sector's mobile money projects. The data can be further analyzed and interpreted to gain deeper insights into project risk management practices and the relationships between different variables.

The primary data sources in this study included both qualitative and quantitative data. Qualitative data were obtained through questionnaires and interviews, allowing for a deeper understanding of participants' perspectives and experiences. The quantitative data consisted of survey questionnaires that could be analyzed using statistical techniques to measure and quantify project risk management practices.

## 5. DATA ANALYSIS AND RESULT/FINDINGS

### 5.1 Data analysis

The study utilized primary survey data gathered through structured questionnaires focused on the risk management practices of Mobile Money projects, including Risk Management, Risk Planning, Risk Identification, Risk Analysis, Risk Response, and Risk Monitoring and Controlling. The researcher applied a five-point Likert scale for the questionnaire, where (1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, and 5 = Strongly Agree) to collect data from respondents. A total of 192 questionnaires were distributed to the target group, and 184 were completed correctly and returned.

#### 5.1.1 Descriptive Statistics of Variables

The descriptive statistics provide a summary of the responses related to different aspects of risk management practices. The data includes the mean (average) and standard deviation for each category, as well as the number of participants (N) involved in the analysis. Six descriptive variables are included: Risk Management, Risk Planning, Risk Identification, Risk Analysis, Risk Response, and Risk Monitoring and Controlling. The standard deviation measures how concentrated the data are around the mean; the more concentrated the data, the smaller the standard deviation. The details of the mean values and standard deviation for each variable are presented as follows:

Table-2 Descriptive variables

<i>Descriptive Statistics</i>			
Variables	Mean	St.Devaition	N
<b>Risk Management Practices</b>	2.99	0.762	184
<b>Risk Planning</b>	2.52	0.844	184

<b>Risk Identification</b>	2.44	0.747	184
<b>Risk Analysis</b>	2.95	0.673	184
<b>Risk Response</b>	2.64	0.637	184
<b>Risk Monitoring and Controlling</b>	2.64	0.637	184

For the category of **Risk Management Practices**, the mean score is 2.99, indicating a moderate level of agreement among the participants. The standard deviation of 0.762 suggests a relatively narrow range of responses, indicating a certain degree of consensus.

In the category of **Risk Planning**, the mean score is 2.52, suggesting a slightly lower level of agreement compared to the overall risk management practices. The higher standard deviation of 0.844 indicates a wider range of responses and potentially more diverse viewpoints among the participants.

In the category of **Risk Identification**, the mean score is 2.44, indicating a relatively lower level of agreement compared to both the overall risk management practices and risk planning. The standard deviation of 0.747 suggests some variability in responses and potential differences in the participants' perspectives on risk identification.

For the category of **Risk Analysis**, the mean score is 2.95, indicating a moderate level of agreement similar to the overall risk management practices. The standard deviation of 0.673 suggests a relatively narrow range of responses and a certain degree of consensus among the participants.

In the category of **Risk Response**, the mean score is 2.64, suggesting a slightly lower level of agreement compared to both the overall risk management practices and risk analysis. The standard deviation of 0.637 indicates a relatively narrow range of responses and a certain degree of consensus among the participants.

Lastly, in the category of **Risk Monitoring and Controlling**, the mean score is 2.64, which is consistent with the mean score of the Risk Response category. The standard deviation of 0.637 suggests a relatively narrow range of responses and a certain degree of consensus among the participants.

## 6. RESULT/FINDINGS

The sampling technique used was purposive. 192 questionnaires were prepared and distributed for 192 samples, 184 Questionnaires are completed and returned. 186 participants' responses for closed ended questions while 6 are not returned and 2 of them discarded. To triangulate the findings, interview was conducted with 4 project managers the data gathered through semi structured interviews were compiled and well maintained with the data gathered with questionnaire. The major findings of the study are as follows:

**Risk Management Process:** The analysis of data indicates that there is a defined or standard risk management process for the Mobile Money project. However, it is not well-defined and not properly applied in practice. There is also a policy or guideline for risk management, but it is not well-known or understood by all project team members.

**Consistency of Risk Management:** The respondents indicate that the risk management process is not consistent throughout the project lifecycle. Risks are often addressed when they arise rather than being

consistently managed throughout the project. Additionally, there is no specific person or department assigned to handle issues related to project risk management.

**Training on Risk Management:** More than half of the respondents confirm that training is not provided to project team members regarding project risk management.

**Risk Planning:** The findings show that there is a carefully designed plan for managing risks and that risk management planning is undertaken alongside project planning. There is also a high level of participation from relevant stakeholders in the planning and execution of risk management. Expert judgment is considered during risk planning.

**Risk Identification:** Potential risks are systematically identified and assessed in the project. However, the role of all team members in identifying risks is rated lower by the respondents. SWOT analysis is used as a risk identification tool, and data collection is the main method used to identify risks.

**Risk Analysis:** Respondents agree that there is a risk measurement system that values risks in monetary terms. However, updating project documents after risk assessment is not practiced well. There is disagreement regarding the formal assessment of risks in terms of likelihood of occurrence and impact magnitude.

**Risk Response:** There is a well-developed strategy to respond to risks within the project, considering budget, schedule, and resources. Risk reduction or mitigation strategies are commonly chosen when risks occur.

**Risk Monitoring and Controlling:** The majority of respondents disagree that risks are well-monitored and controlled. Information from the project history or available data is not effectively used to supplement risk control. Risks within the project are not controlled in alignment with the project's goals and objectives.

These findings provide insights into the current state of project risk management practices in the Mobile Money project at Ethiopian Telecom's Addis Ababa Head Office.

## 7. CONCLUSION

In conclusion, the research findings reveal that the project risk management practices in the Mobile Money project at Ethiopian Telecom's Addis Ababa Head Office are inadequate. The development of an effective risk management plan is lacking, despite the presence of written policies and guidelines. Training for team members on risk planning and handling is insufficient. There is a notable absence of a designated responsible person or department for risk management, and risk management is not consistently applied as an ongoing process. Risks are not proactively managed or avoided, but rather addressed after they have become crises.

The project demonstrates some effective risk planning practices, involving project managers and expert judgment, but the engagement of all project members in risk identification is limited. Risk identification is primarily based on information gathering, with SWOT analysis being a preferred method. However, risks are not identified throughout the entire project lifecycle, and physical inspection is not utilized. Risk analysis lacks formal assessment of likelihood and impact magnitude, hindering the objective measurement of risks.

The project employs a measurement system for risk analysis but lacks the practice of updating project documents after risk assessment. Risk response strategies are mainly focused on risk reduction/mitigation, with limited practices in risk monitoring and control. Lessons learned and project histories are not effectively utilized for risk management. Overall, the research indicates weak risk management practices in the Mobile Money project, highlighting a gap between the theoretical knowledge of project risk management and practical implementation.

## 8. LIMITATIONS

**Respondent Reluctance:** Participants may exhibit reluctance in fully disclosing information due to the competitive nature of the telecommunications sector. This could impact the depth and accuracy of the data collected.

**Access to Key Respondents:** There may be difficulties in securing interviews with target respondents at the Director and Manager levels within Ethio Telecom due to their demanding schedules. Factors such as other commitments, training, or annual leave may result in their unavailability for interviews. This could potentially limit the perspectives obtained from these key decision-makers.

**Time and Resource Constraints:** As mentioned in the scope, the study is limited by constraints in time and resources available. This may impact the breadth and depth of the evaluation that can be conducted.

**Availability of Relevant Data:** The study's findings may be limited by the availability and accessibility of relevant data, documents, and information from Ethio Telecom, which could restrict the level of analysis possible.

**Potential Bias:** The researcher's own biases or preconceptions about the telecommunications industry and risk management practices in Ethiopia could inadvertently influence the data interpretation and findings.

**Generalizability:** The focus on the Mobile Money (TeleBirr) project at the headquarters level may limit the generalizability of the findings to other projects or the broader Ethio Telecom organization.

## 9. RECOMMENDATION

The following recommendations are provided to improve the project risk management practices at Ethio Telecom:

1. *Implement Risk Management Throughout the Project Lifecycle:* The Company should integrate risk management processes into all phases of the project, not just during the planning or initiation phase.
2. *Engage All Team Members:* All team members should be actively involved in the risk management process, as they possess valuable knowledge and insights about potential risks.
3. *Develop and Implement a Standard Risk Management Guideline:* The project should establish a well-developed guideline that outlines how to manage unexpected uncertainties.
4. *Assign Responsibility:* A responsible person or department should be designated to oversee the implementation of the risk management process.
5. *Provide Training:* Training should be provided to all team members on the overall risk management process. This will enhance their understanding of risk management principles and equip them with the necessary skills to identify, assess, and handle risks effectively.
6. *Improve Risk Monitoring and Control:* The project should enhance its practices of risk monitoring and control, aligning them with the project's goals and objectives. Regular monitoring of risks and implementing appropriate control measures are essential for successful risk management.
7. *Utilize a Risk Register:* Implementing a risk register as a tool for risk management will help capture important information about risks and opportunities. The risk register can serve as a valuable input for lessons learned and future projects.

By implementing these recommendations, Ethiopian Telecom can enhance its project risk management practices and bridge the gap between theoretical knowledge and practical application. This will result in more effective risk identification, assessment, and mitigation, ultimately improving project outcomes.

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