ST. MARY'S UNIVERSITY

School of Graduate Studies

Department of Project Management

AN ASSESSMENT OF PROJECT IMPLEMENTATION PRACTICES OF COMMERCIAL BANK OF ETHIOPIA HEAD QUARTER CONSTRUCTION

By

Bethel Shewafera

MAY, 2019

Addis Ababa

AN ASSESSMENT OF PROJECT IMPLENTATION PRACTICES OF COMMERCIAL BANK HEADQUARTER COSTRUCTION PROJECT

IN THE SITE AROUND AMBASSDOR CINIMA ADDIS ABABA

BY: Bethel Shewafera

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ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES DEPARTMENT OF PROJECT MANAGEMENT

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APPROVED BY BOARD OF EXAMINERS

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Advisor	signature
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External Examiner	signature
_____	_____
Internal Examiner	signature

Table of Contents

DECLARATION

I, **BETHEL SHEWAFERA**, hereby declare that the thesis entitled *"***AN ASSESMENT OF IMPLEMENTATION PRACTICE OF COMMRCIAL BANK OF ETHIOPIA HEADQUARTER CONSTRUCTION PROJECT",** submitted by me to the award of the Degree of **Master of Project Management** from **St. Mary's University School of Graduates Addis Ababa,** is original work and it hasn't been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

BETHEL SHEWAFERA Signature……

Date ……

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ENDORSEMENT

This thesis has been submitted to St. Mary's University College, School of Graduate Studies for examination with my approval as a university advisor.

_____ _____

Advisor signature

St. Mary's University College, Addis Ababa MAY, 2019

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First and for most I would like to thank GOD for making me to complete this paper. I also, would like to thanks to my external evaluator Dr .Chalachew Getahun, PhD for his constructive and supportive comments for accomplishing of this paper. I also would like to express my gratitude to my father Mr. Shewafera who inspired me to take this program and my mother Mrs. Enguday WoldeAmlak who give love and support whenever I need it and everyone who encourage me and support me in completing this paper.

Acronyms/Abbreviations

AAIT: Addis Ababa Institute of Technology

AAU: Addis Ababa

CBE: commercial bank of Ethiopia

CSCEC = china state construction engineering corporation

CPM: critical path method

SS= Start-to- start

SF= Start-to-Finish

FF = finish-to-finish

FS = finish-to-start

LOB: Line of Balance

PM: Project Management

PMBOK: project management body of knowledge

PMI: project management institution

PMIS: project management information system

SD: standard deviation

WBS: work break down structure

4B+G+48 = four basement floor + ground floor+ 48 floor above ground level

ABSTRACT

Time management, Scheduling and Planning is very important for the efficient and effective completion of construction project. Scheduling which address "when" includes activity schedule, material schedule, equipment schedule, financial schedule and manpower Schedule. For high-rise building construction assigning special equipment and experienced professionals, applying duration reducing work method, using proper and economical design should be considered during the planning stage. In this study different literatures are composed to support the argument of the study.

In this study quantitative study had been performed and the data is collected using questionnaires. It uses stratified sampling size and reliability and validity of the study is calculated. In the analysis part of the paper, project integration management, project time and scheduling and project planning were analyzed. Commercial bank of Ethiopia head quarter building construction project was studied to establish the practice of Project Integration, Project time and schedule and project planning, from this information key conclusions and recommendations are drawn for the project and for the other high-rise building constructions to be constructed in the future too.

Key words: High rise building, Project Integration, Project time and scheduling, Project planning

CHAPTER ONE
I. INTRODUCTION

1.1Background of the Study

“Planning is a primary function of management, which involves deciding in advance the future course of action. The process of project planning is to define each major task, estimate the time and resources required and provide a framework for management review and control. Planning will involve identifying and documenting scope, tasks, schedule, risks, quality and staffing needs. An adequate plan process and project plan will ensure that resources and team members will be identified so that the project will be successful. During the planning process the sequence and the logical inter-relationships between the various activities may be established.” (.R.C Mishra TarunSoota, 2005)

According toR.C Mishra TarunSoota (2005), “The process of project planning involves the following steps:

1. Defining the objectives and goals of the project
2. Making forecasts for achieving the goals
3. Identifying the various course of actions through available alternatives andassumptions.
4. Evaluating the resources available
5. Evaluating and selecting the available course of action for achieving the desired objective under the resource constraints.”

“Projects are Components of a Certain Program: That is, projects are usually established for achieving a predetermined specific goal. All processes in project management are, therefore; conducted to achieve this goal. The goal of every project may also differ among the parties involved. That is, the goal owned by the project owner is different from the goal owned by the project doer”[WubishetJekale,2004].

“Projects involving few activities, resources constraints, and inter-relationships can be visualized easily by the human mind and planned informally. However, when a project crosses a certain threshold level of size and complexity, informal planning has to be substituted by formal planning. The need for

formal planning is indeed much greater for project work than for normal operations"(PrasannaChandra, 2002).

"Project planning is tricky on a corporate creative team. Small Planning causes chaos and frustration; and too much planning causes a lot of administrative work and not enough time for creative work. Ultimately the planning stage of the creative workflow determines how smoothly your projects move through the creative process, which is why it's so important to spend some time at the beginning of a project and get your planning right. Project planning follows the request stage; where ideally a traffic manager or creative director request in a standardized fashion. The planning process then begins by prioritizing the work requests received during the request stage. This is an area where most teams meet chaos because they plan too little, without a plan in place to prioritize project, the highest value work is likely getting delayed or lacking the attention it deserves."(PrasannaChandra,2002)

According to PrasannaChandra(2002), "Priority scorecard can be easily created by following three steps:

1 Appoint a backlog manager

2 Set criteria

3 Assign points

Most projects in Ethiopia fails due to poor planning as well as lack of skilled professionals in project planning practice. According to Prasanna Chandra (2002), "the planning phase of a firm's capital budgeting process is concerned with the articulation of its broad investment strategy and the generation and preliminary screening of project proposals. Once a project proposal is identified, it needs to be examined. To begin with a preliminary project analysis is done.A prelude to the full blown feasibility study, this exercise is meant to assess.

- Whether the project is worthwhile to justify a feasibility study and
- What aspect of the project are critical to its viability and hence warrant an in – depth investigation."

1.2. An overview of Ethiopia's planning experience

"These projects are designed with assumption of efficient management. Even though projects have such major contributions in the development of the economy of a given nation, most of them are failed to be completed as planned. Like that of other African countries Ethiopia is also facing the problem of poor project planning. Project success is highly determined by the performance of the project plan prepared. Although the country is trying to make its projects successful most of them are still are either failing or delaying from their date of completion due to the problem of poor planning" [Tekalign , 2014].

It is over three decades since Ethiopia adopted a planned approach to development. In the immediate post- World War II period, separate programs and plans, which were not integrated in to a general framework of national plan covering the entire economy, were drawn up by various government agencies and served as the bases for government policy. Subsequently, sectorial programs of varying durations were prepared for agriculture, industry, forestry, transport and telecommunications, education and water resources development.[TesfayeAsfaw, 1992]

These sectorial plans and programs were mostly proposed schedules of public expenditure. However, they served the useful purpose of focusing attention on planning, and their inadequacies helped reveal the limits and weaken of partial planning. Recognition of these factors such as the rising preference of planning in developing countries by western countries providing loan and grants, led the government to formulate an overall development plan.[TesfayeAsfaw, 1992]

Commercial bank of Ethiopia was legally established as a share company in 1963 and IN 1974, CBE merged with the privately owned Addis Ababa Bank since then it has been playing significant roles in the development of the country.CBE was legally established as a share company in 1963 and in 1974, CBE merged with the privately owned Addis Ababa Bank. Since then it has been playing Significant roles in the development of the country. It is leading Africa Bank with assets of 565.5 Billion birr as on June 30TH 2018.(CBE, 2018)

"The commercial Bank of Ethiopia (CBE) has signed an agreement with the china state construction Engineering Corporation (CSCEC) for the plan to build a 198 meter building for CBE's headquarters in Ethiopia, which is expected to be the tallest structure in East Africa. The estimate cost of this Skyscraper building is 5.3billion (US$266.5 million); it has 46 count floors and its total floor area is 150,000sqm.CBE

head quarter building construction project was studied to establish the planning and scheduling techniques used in the project and key conclusions and recommendations are drawn for the project and for the other high-rise building construction to be constructed in the future too. By taking in to consideration the project master construction schedule and by preparing sample schedule for the structure work; recommendations forwarded to complete the project with in the contract period."[AAiT, 2017]

Skyscrapers, also called super-high-rise buildings, have become an important alternative in the urbanization process to increase vertical space and to accommodate more people. Therefore, it has become a favorite way in the last decades of accommodating a rapid expansion of population (Yangkui li.et al., 2016). In developing countries like Ethiopia the population will live in the cities increase due to industrialization because of this rate of high-rise building construction will be increased to fulfill the living and working space requirements

"Rapidly growing cities like Addis Ababa pose seemingly massive and unsolved challenges. At the same time this boom in urbanization also opens opportunities for urban innovation. Urban density, for instance, is a powerful tool for reducing a society's ecological footprint. Concentrated growth and the use of intelligent technologies aligned with natural conditions facilitate the implementation of sustainable cities, which could have a major impact on the planet's future. In particular, high rise projects like the new headquarters for the commercial bank of Ethiopia provide an opportunity to change the character of whole neighborhoods and cityscapes through sustainable planning and intelligent design. Such building has the power to change the urban experience, lift cultural vitality allow sustainable operation and transform skylines-becoming a symbol of progress to the rest of the city"(CBE, 2018).

"In the case of high rise building; if the project isn't well planned and scheduled there will be time overrun. In high-rise buildings the equipment required is special, the activities are a lot and complex, most materials required are prefabricated, especially in our country most material and equipment are imported and in the city there is material stocking area problem in the site.Planning and scheduling isimportant for the successful completion of the high-rise building construction" [Derebeworku, 2017].

"In order to avoid the time overrun of high-rise building construction

- We should list the major activities.

- Using special formwork like a climbing formwork systems [sometimes referred to as self-climbing or self-lifting) to construct the core walls has been successful inreducingconstruction times, primarily because the process become repetitive though the whole height of the building. Even if in our country high-rise building construction experience is less, now a day's most financial institution head quarter buildings are high-rise" [Derebe worku,2017].

When we study the planning and scheduling of Commercial Bank of Ethiopia Head quarter building construction project, the way of planning and scheduling can be applied for the high-rise building construction in the country.

The Commercial Bank of Ethiopia Head quarter building construction project has a total floor area is estimated about 165,476.4 m^2which consists of office tower has floors of 4B+G+48 which includes the main departments of the Bank and low-rise buildings (4B+G+6 and 4B+G+8) are mainly conference centers, commercial center and parking garage (AAiT, 2018). In this study we will see the way of planning of CBE head quarter in relation to theoretical one and finally from the study.

Due to poor project planning practice many projects fail, so this research will help to see the gaps in the planning practice of the organization under study and will help to fill the gap.

1.3. Statement of the problem

According to Tekalign (2014), "In Ethiopia most of the project does not seem to go as planned or the plan is not good enough to complete the project in hand. The success of a project is measured using the three constraints which are cost, time and quality. Regardless of political instability and inflation in the country, Ethiopia has been undergoing massive construction projects for the last five years, especially in banking center".

In Ethiopia failure in the most projects is due to project manager's incapability to plan a project effectively. THE HEAD QUARTER CONSTRUCTION OF COMMERCIAL BANK OF ETHIOPIA is the most outstanding project recently, but still this project has a gap even if it is to the minimal compare to other project. The contractor which is THE CHINA STATE CONSTRUCTION ENGINEERING CORPORATION (CSCEC) has a very good reputation in building a quality

infrastructure and a better delivery time compare to other contractors. This project is different because it would be the tallest building in east Africa and the fifth tallest building in Africa. This building would also would be the first green building so it also considers environmental protection(CBE, 2018).

The agreement clearly states that the project would be completed on January, 2019, but the project is delayed and now it's estimated to be complete on January, 2020. Delay always brings extra cost of the project due to different reasons as increasing the cost of resources, inflation, claim and so on. The contract type is lump sum contract so every risk fails on the contractor. Many of the projects in Ethiopia are failing due to poor planning and problems in the planning phase. Therefore, this study is aimed to assess the project planning practices of the case organization.

The studies by Wang and Gibson (2008), shows that Time spent on project planning activities will reduce risk and increase project success. Other researchers on the project planning activity such as Morris (1998) and Thomas (2008) showed poor planning and problems in the planning phase will lead to a failed project. But the more planning there is in a project, the more successful the project will be.

An accurate schedule can help better distribute construction resources, such as money, machinery, and materials, in a more efficient way. For example, a project team can arrange the project finance and cash flow in advance according to the project schedule. On the other hand, skyscrapers are commonly regarded as a symbol of urban development and economic status, so a misjudged schedule of skyscrapers may have an influence beyond the project itself to extend to its neighboring zones or overall society (Yangkui li.et al., 2016)

The Ethiopian construction industry has a widespread problem concerning cash flow in projects. As a consequence of this problem, there are a lot of half-finished buildings that are on hold until the owner manages to finance further production. Due to the cash flow instability in projects, many sub-contractors and suppliers demand cash or check payment in advance to performed work or delivery. In general the problem of this project the researcher want study is time management which in returncausesdalliance, project integration, and project planning.

When we see high-rise building construction it requires special equipment and work methods in addition to adequate finance source. Most construction projects schedule prepared at the beginning of the project because the contract forced the contractor to do so but not revised on progress without delay due to this time overrun exist on the project completion time. The contractor better prepare

feasible schedule for the purpose to establish production goals, to manage change and for the communication of the construction plan.

In this study we will see how the CBE head quarter implantation was done and their progress in relation to the plan and schedule. As we observed most building construction in our country their performance at the beginning is good which include activities like earth work and concrete casting. After the completion of the structural work excessive delay of the project mostly observed; this progress continuity problem may be lack of good planning and scheduling of different activities by considering their relationship. When we schedule we should identify critical activities and assign resource for it on time for the execution of activities according to the specified time. The delay of critical activity will be the delay of a project as a whole. Especially in the case of high-rise building construction good planning and scheduling is very important for the successful completion of the project because in high-rise building a lot of activities exist as well executing the activities is difficult relative to low-rise building construction.

1.4. Research questions

The following basic research questions were addressed in order to assesses the case described above.

1. Which project planning tools are applied?
2. To what extent the project team participates in preparing the project plan?
3. To assess the time management and scheduling in the project?

1.5. Objectives of the study

1.5.1. General objective of the study

- ✓ To assess the project implementing practice of commercial bank of Ethiopia head quarter construction

1.5.2. Specific objectives of the study

1. To identify which project planning tools and techniques are used in the study organization.
2. To examine the extent the project team participates in preparing the project plan
3. To examine the time management and scheduling practice in the project plan

1.6. Significance of the Study

The commercial bank of Ethiopia head quarter construction project is a very precise project compares to other projects Ethiopia, but still it has its shortcomings like time and cost. The aim of this research is to fill the gap in this project which will help us to have better way of handling project in the future projects.

The research will be a big help for a future projects and could be used as:

- ✓ Reference for a better project implementation
  The research is considered to help planner in doing their work better than before.
- ✓ A framework for some other project
  This project helps future project managers to do better and learn a lesson from this research
- ✓ Serve as a guideline to evaluate other project
  The research could help in finding their weakness do better in their project.
- ✓ Reference for future research
  It also could serve as a standing point for future research. Furthermore, it could stimulate further research

1.7. Scope ofLimitations of the Study

Planning and scheduling of high-rise building is very important for the successful completion of the project. This study deals with the planning and scheduling of CBE head quarter building construction. The building after completion would be the tallest building in the country and studying the planning, scheduling of this project would be a good view for the other projects to take as an experience in the future. The study would not go through project quality and cost assessment.

The research only limited to commercial bank of Ethiopia head quarter construction planning practice even if there are many aspects of project management concepts that needs researching. In the project there are project managers, contractors and professionals that are participating. So this study involved all professionals related with the project.

Even if the project is consider to be the best in many people perspective it has its own limitation which needs assessment. Geographically, the study will also be limited to the contractors and consultants of the project. The other limitation for this research is that even if the study is for academic purpose the contractor is not willing to give all the information requested for the purpose of this study. Since the project team is not willing to give any documented information it is was impossible to assess the cost.

1.9. Organization of the research report

The research paper consists of five chapters. The first chapter includes the introductory issues about the research, what the problem in question is, the researchers purpose, brief overview about the methodology, the research objective and the research questions to be answered, definition of terms and concepts used in the study and the significance for undertaking this research. The second chapter is devoted to literature to the area under study so as to better understand concepts, theories and models related to project plan. The third chapter is devoted to research methodology.The fourth chapter is results and discussion and the fifth one is summary of findings of the study, conclusion and recommendation.

1.10. Definitions of terms

Key terms

- ✓ **Planning:** is determining what needs to be done, by whom, and by when, in order to fulfill one's assigned responsibility Kernzer (2009).
- ✓ **Project:** A project has a defined scope, is constrained by limited resource (time, budget), involves many people with different skill and, usually progressively elaborated throughout its life cycle Cleland & Ireland (2002).
- ✓ **Project plan:** A project plan is a formal approved document used to manage project execution. Project plan is also called integrated management plan because it comprises of all other specific plans PMI (2009).

Chapter Two

2. REVIEW OF RELATED LITERATURE

2.1 Introduction

"Projects are often implemented as a means of achieving an organization's strategic plan" (PMBOK, 2004). Almost all civil engineering constructions are undertaken in project form having a predefined cost, completion time and quality. "In this research, projects are understood with these three major identifying characteristics projects are unique, projects are temporary and a project is a component of a certain program."(Wubishet Jekale, 2004)

Projects are Unique: - "The project uniqueness is understood very well in different literatures. The uniqueness of a project as associated with the creation of a new product or service, which has never existed before, in some distinguishable way from all other similar products or services. Others put it differently as a project is a non-routine, non-repetitive, one-off undertaking and involving a constantly new and unknown activities or processes. "(PMI, 2000 and PMBOK, 2004)

Projects are Temporary: - "This characteristic is related to the timing of the project, which focus a transient relationship between project and parent organization covering two aspects: limited resources, and the lifetime of the project organization." (PMI, 2000 and PMBOK, 2004)

"Resource and Requirement Constraints: Projects are constrained by resources largely acknowledged as time, cost and quality requirements. Projects have to be ready within a certain completion time. Finance, which is an incomparably scarce resource in Developing Countries as opposed to their counterparts in the developed nations, creates considerable importance attached to cost constraints when compared to the others two." (DerebeWorku, 2018)

The project's requirements set the major milestones. If line managers cannot commit because the milestones are perceived as unrealistic, the project manager may have to develop alternatives, one of

which may be to move the milestones. Upper-level management must become involved in the selection of alternatives. The project manager is the key to successful project planning. It is desirable that the project manager be involved from project conception through execution. Project planning must be systematic, flexible enough to handle unique activities, disciplined through reviews and controls, and capable of accepting multifunctional inputs. Successful project managers realize that project planning is an iterative process and must be performed throughout the life of the project. One of the objectives of project planning is to completely define all work required (possibly through the development of a documented project plan) so that it will be readily identifiable to each project participant. This is a necessity in a project environment because: If the task is well understood prior to being performed, much of the work can be preplanned, If the task is not understood, then during the actual task execution more knowledge is gained that, in turn, leads to changes in resource allocations, schedules, and priorities, the more uncertain the task, the greater the amount of information that must be processed in order to ensure effective performance (Kernzer ,2009).

There are widespread views on project management, and many questions will never have one single answer. while there is broad agreement across continents on the principles of (goods) project management, there will always be a debate on some of what follows. project management (PM) is not binary science; it's a branch of management. The type and size of project will often have an impact on aspects of project management method. Sadly, there will never be a 'one fits all' method for planning all projects; there are though fundamentals or principles that are key to planning all project successfully. (kevin Lonergan,2014)

Project plan is a formal, approved document used to guide both project execution and project control. The primary uses of the project plan are to document planning assumptions and decisions; to facilitate communication among stakeholders, and to document approved scope, cost, and schedule baselines. The project plan represents the basic tool for successfully executing a project. It forms the basis for all management efforts associated with the project. It is a record of plans that is expected to change over time. The project manager is responsible for bringing out the project plan, which should be accurate and complete as far as possible without being several volumes in length. It is a document that allows the project manager to managethe details, and not be managed by the details.(R.C Mishra TarunSoota,2005)

The construction industry is a business sector which carries out a huge amount of turnover. Among the parties involved in civil engineering works, contractors and consultants are purely of business organizations. The others may or may not be of business organizations. And from the contractors and consultants, it is the contractors that are mainly involved in diversified activities that are directly affected by the prevailing market situation,with this respect, the overall business environment comes into picture in affecting the contractors in many aspects; performance and capacity being the crucial ones. Market price fluctuations at all levels directly affect contractors, since they are the front line role players in the construction business. Contractors are subject to procure and deliver all the necessary labor, material and equipment, the cases depending on the type of contract, required for the completion of the works. This makes them to directly be linked with suppliers, sub-contractors and the labor force.

Price fluctuation can generally be defined as the rise or fall of price of goods, materials and services on the markets. Price fluctuation can occur at any market, i.e. at international markets, local market and/or at the labor market. The reasons for fluctuation are several, the major ones being [Stukhart 1982]: Government's regulation on oil price, shortage or excess supply at market and increase or decrease in demand of a certain item.

" In Africa Ethiopia as a developing nation, it is trying to grow its economy as much as possible and in as much amount. In order to achieve the growth needed projects are necessary. So there are many projects which are underway in the country. The main objective of projects is to help achieve the desired results. In order to achieve what is needed from projects there should be a proper project management. Project management has different parts and the project manager is also responsible for successfully completing the project. One of the main responsibilities of the project manager is to properly plan the project because planning what is needed for the project is the first thing that should be done and which also determines the success or failure of it. So the role of project planning is highly important for any project to be completed successfully. Planning, in general, can best be described as the function of selecting the enterprise objectives and establishing the policies, procedures, and programs necessary for achieving them. Planning in a project environment may be described as establishing a predetermined course of action within a forecasted environment"(Kernzer ,2009).

Characteristics of Project

According to PMBOK, 2017:

(1)Objectives: A project has a set of objectives or a mission. Once the objectives are achieved the project is treated as completed.

(2) Life cycle: A project has a life cycle. The life cycle consists of five stages i.e. conception stage, definition stage, planning & organizing stage, implementation stage and commissioning stage.

(3) Uniqueness: Every project is unique and no two projects are similar. Setting up a cement plant and construction of a high-rise building are two different projects having unique features.

(4) Team Work: Project is a team work and it normally consists of diverse areas. There will be personnel specialized in their respective areas and co-ordination among the diverse areas calls for team work.

(5) Complexity: A project is a complex set of activities relating to diverse areas.

(6)Risk and uncertainty: Risk and uncertainty go hand in hand with project. A risk-free, it only means that the element is not apparently visible on the surface and it will be hidden underneath.

(7)Customer specific nature: A project is always customer specific. It is the customer who decides upon the product to be produced or services to be offered and hence it is the responsibility of any organization to go for projects/services that are suited to custom needs.

(8) Change: Changes occur throughout the life span of a project as a natural outcome of many environmental factors. The changes may vary from minor changes, which may have very little impact on the project, to major changes which may have a big impact or even may change the very nature of the project.

(9) Optimality: A project is always aimed at optimum utilization of resources for the overall development of the economy.

(10) Sub-contracting: A high level of work in a project is done through contractors. The more the complexity of the project, the more will be the extent of contracting.

(11) Unity in diversity: A project is a complex set of thousands of varieties. The varieties are in terms of technology, equipment and materials, machinery and people, work, culture and others.

2.2 Definition of Planning

It is a synonym for preparation, organization, arrangement, forethought, design, drafting or ground work. Planning is the process of thinking about the activities required to achieve a desired goal. It is the first and foremost activity to achieve desired results. It involves the creation and maintenance of a plan such as psychological aspects that require conceptual skills. Some of the definitions given by different scholars are as follows. Planning is a continuous process of making entrepreneurial decisions with an eye to the future, and methodically organizing the effort needed to carry out these decisions. Furthermore, systematic planning allows an organization of set goals. The alternative to systematic planning is decision-making based on history. This generally results in reactive management leading to crisis management, conflict management, and firefighting. Planning is determining what needs to be done, by whom, and by when, in order to fulfill one's assigned responsibility (Kernzer,2009). The process of planning includes planners working backward through the system. They start from the result (outcomes and outputs) they prefer and work backwards through the system to identify processes needed to produce the results. Then they identify what inputs (or resources) are needed to carry out the processes.

The primary purpose of planning is to minimize the risk or obstacles surrounding future operations. From this point of view, planning can be defined as the process of preparing for change and coping with uncertainty by formulating the means for attaining goals. It is anticipatory decision making that establishes organizational goals and specifies the methods of achieving them (Mssridhar ,2009). Planning is the foundation (primacy) of management: planning provides the entire basis from which all future management functions arise. It takes precedence over the other managerial functions like organizing, staffing, directing and controlling, because none of these functions can be practiced until there is a plan. However, it should be noted that the functions of management are interrelated in that no one function can exist without the other Charles (2003).

Construction planning and scheduling is one of the important tool in a construction project. Every construction project involves with a lot of activities which need to be planned and schedule properly to ensure the completion of the project. Construction project planning is a method of determining "What" is going to be done, "How" things are going to be done, "Who" will be doing activities and "How much" activities will cost. By raising the question" what"," how", "who" and "how much" and answering properly those issues we can make ready resources for the successful completion of the project. A construction project can vary from extremely profitable to barely worth it and sometimes end up costing the contractor more than what he or she is getting paid to complete it(Alshanbari and Hamzah, 2010).

"The profitability of a project depends heavily on the ability of the general contractor to anticipate potential problems and avoid them. Usually, a construction project will not proceed as planned due to various factors. These factors include, but are not limited to, weather conditions, city regulations and codes, differing site conditions, change in construction materials prices and most importantly workers" productivity. Because construction is almost always conducted by humans, the productivity rate of workers will have a major impact on the project's budget and schedule. The productivity rate is the amount of work output completed in a certain period of time. There are many factors that affect the productivity rate of workers such as thermal comfort, safety issues, availability of tools and materials, length of work hours and availability of supporting facilities such as toilets and proper waste containers. The site layout and safety coordination play the major roles in controlling the productivity rate" (Alshanbari and Hamzah, 2010].

The project management body knowledge area is summarized in the picture below. So the project plan should include all those explained in the diagram which is in the next page.

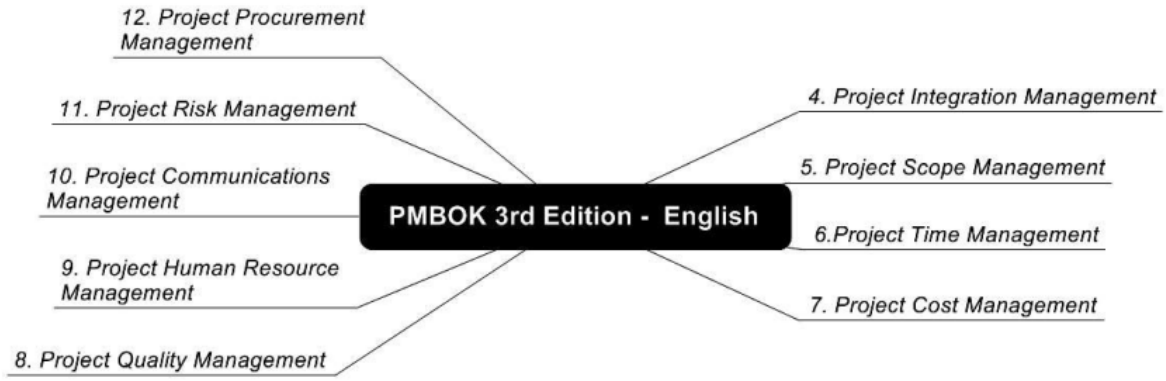

Figure.2.2 Project management body of knowledge areas (PMI, 2003)

As shown in the picture above project management have the twelve knowledge areas but our research on project management.

Project Management

Project management is the work methods that are used to control and manage activities in a project. Project management involves the application of knowledge, skills, tools and techniques in project activities to meet the project objectives. All management work is based on processes as: initiating, planning, executing, controlling and closing.

2.3 Project Scheduling

Scheduling refers to slotting out the time duration by the thorough and explicit analysis of the planning term to each and every activity to know the final project duration and the project delivery date. In other words, it governs the timing of each work activities recognized by the planning process before or during project execution. Typically, it shows and signifies the sequential order or phasing various individual project activities in a systematic way to complete the project. The schedule is a tool or a technic of every project management team which is used and practiced to predict most probable project completion time and thus enabling the in/ on time resources conception which are budgeted on the particular work (Vishan and Balasaheb, 2017). Several steps are involved in devising an efficient and workable job schedule. According to (DerebeWorku ,2018),a list of eight steps is offered as a procedural guide.

1. Estimate the time required to carry out each network activity.

2. Compute the time period required for overall project completion using these time estimates.

3. Establish time intervals within which each activity must start and finish to satisfy the completion date requirement.

4. Identify those activities whose expedient execution is crucial to timely project completion.

5. Shorten the project duration at the least possible cost if the project completion date will not meet the contract or other requirements.

6. Adjust the start and finish times of selected activities to minimize resource conflicts and smooth out demands for manpower and equipment using surplus or float times that most activities possess.

7. Make a working project schedule that shows anticipated calendar dates for the start and finish of each network activity.

8. Record the assumptions made and the plan's vital boundary conditions. These will become an integral aspect of the completed baseline project schedule

Elements of Developing a Good Schedule

According to (Derebe worku,2018), Good schedule is very important for the successful completion of the project. The development of a good schedule is achieved through the consistent application of sound general practices. The under listed are the practical benefits of good scheduling.

• requires managers to think the project through prior starting the work

• provides a structured approach to planning

• Means of communicating the work plan to others

• identify problems before they arise

• identify long-lead fabricated items

• assess resource requirements • forecast cash flows

• serves as primary documentation for delay claim analysis and other time impact considerations.

To meet the above listed benefits the essential elements that must be considered by the project team when developing a good schedule.

A) Developing the Scheduling Framework

According to (Derebe worku,2018):

1. Determining How the Schedule Model will be developed

At the outset, the project manager, in conjunction with the project team, should determine a development plan for the schedule model. the schedule model can be developed in its entirety, and determining the stakeholders whose input will be required as part of the schedule development process. The schedule model describes the work to be done (what), the resource(s) required to do it (who), and the optimum sequence (activity starts, finishes, and relationships) in which the work should be undertaken (when).

2. Understand the Full Scope of the Project

"The scheduler needs to review and understand the project's scope documents with particular emphasis given to the WBS. These documents provide the back ground, information, and understanding needed to develop the schedule model. The goal of this process is to ensure that all aspects of the project scope have been adequately defined and included in the schedule model."(Derebe worku, 2018)

"Activities in the schedule model represent the work that produces the deliverables or work packages identified in the WBS; thus, all work elements in the WBS should be directly traceable to a schedule activity or group of activities." (Maria, 2000)

3. Identify the Project and Schedule—Project Schedule ID

Every schedule model needs to have a unique name and identification number to identify the project. Each version of the schedule model needs to have a unique version number or ID number. This is essential to allow the proper archiving of project documents and audit processes. (Derebeworku, 2018)

4. Establish Project Calendars and Work Periods

According to (Derebe worku, 2018), the scheduler will determine, in concert with the project team, the work periods which will be selected for the project. These work periods may be different for specific activities or portions of the project including resources. As (Derebe worku, 2018) illustrated, some of the calendar issues to consider include:

- Number of working days in a week
- Number of shifts to be worked each day
- Number of hours to be worked each shift or day
- Any periods of scheduled „overtime" work or non-working time (e.g., holidays). These elements play a major role in determining the number and structure of the project calendars required for the schedule.

Generally accepted practice is to use a default project calendar which is adequate and reasonable to perform the work, based on the project's normal working times.

5. Establish the Optimum Project Update Cycle

"The project management team, using the expertise of the scheduler, should determine the appropriate frequency for performing updates and status against the schedule. This includes determining at what point in the cycle the update will occur and how often the status will be reported. The optimum update cycle will vary with industry and project intent from hourly updates for planned out age projects for manufacturing/production facilities to weekly or monthly updates for major construction or software development projects. The chosen update cycle has a direct relationship or bearing on the activity durations contained within the schedule."(Derebe worku, 2018)

6. Designing an Effective Activity Coding Structure

"A reasonable and useful code structure should be developed so that selecting, sorting, and grouping of the schedule data to facilitate the development and maintenance of the schedule model, as well as meeting the project reporting requirements, is easily accomplished. A structured activity ID/numbering scheme may form part of the overall coding design. Using a structured numbering system may allow the users of the schedule to have a better understanding of how a particular activity fits into the bigger

project picture by grasping the significance of the activity number itself. At a minimum, an activity number must be unique, and follow a scheme appropriate to the project."(Derebe worku, 2018)

7. Determining Resource Planning Requirements

"If the schedule is to take resource availability into account, the resource pool available to the project needs to be determined together with any special resource calendars, skill sets, and availabilities. Resources used for scheduling purposes may be the same or a subset of the resources used for cost estimating. Just as activity codes can be used to classify and organize activities, resource codes can be assigned to resources to classify resources according to organization, skill level or type, reporting structure, etc. And, just as Activity IDs should be structured into a meaningful scheme, Resource IDs should be similarly structured" (PMI, 2007).

B) Developing the Baseline Schedule

1. Define Milestones

"Once the scheduler has a feel for the overall structure of the project data discussed previously, he or she can begin to lay out the project's milestones. Milestones will have zero duration, will be used as bench marks to measure progress against, and can also reflect the start and finish points for various project events or conditions. Generally, a milestone will represent the start or completion of a part of the project and/or may be associated with external constraints, such as the completion of a deliverable or the receipt of an external input. As a minimum, each project must have a start milestone and finish milestone. 2 Design the Project's Activities the scheduler, in conjunction with the individuals responsible to perform the work of the project, can begin to create the list of activities that will need to be performed to complete the project."(Derebe worku, 2018). According to (Derebe worku, 2018),the characteristics of a well-designed activity include:

● The activity is a discrete element (or block) of work that is a tangible element of the project scope

● A single person should be responsible for performing the activity. This does not preclude the idea that multiple resources may be required to accomplish the activity, but it does require that a single entity is responsible for its performance. That person should be the same one who will report progress on the activity.

● Activities describe the work that must be accomplished. As such the description for each activity must start with a verb and contain a unique object. Adjectives may be helpful to clarify ambiguities. Each activity description should be unique and leave no room for confusion, that is, it can be identified without ambiguity.

● The work represented by an activity should, once started, be capable of proceeding to completion without interruption (except for naturally occurring non-work periods in the calendar). If the work on an activity is suspended or delayed, it is often beneficial for the activity to be split into two or more activities at natural break points.

● The work contained in an activity should be scoped so that the activity's duration will be less than two times the update cycle (ideally never more than three times the update cycle). This allows the reporting of the start and finish of an activity within one or two update cycles, allowing management to focus on performance and corrective action if needed. Exceptions to this general rule are continuous activities, (e.g., summary activities such as boring a 2- mile long tunnel or paving several miles of highway).

3. Design the Project's Logic

"Connecting the activities and milestones together with sensible logic is the bedrock of any schedule model. The method of connection is defined as a relationship. Every activity and milestone except the first and last must be connected to at least one predecessor and one successor. For most instances, each activity would finish prior to the start of its successor activity (or activities) (known as a finish-to-start (FS) relationship), but that is not always possible. If it is necessary to overlap activities, the scheduler may elect to use start-to-start (SS), finish-to-finish (FF) or start-to-finish (SF) relationships. Figure 2 provides examples of the four relationship types in CPM methodology. Whenever possible, the FS logic relationship should be used. Ideally, the sequence of all activities will be defined in such a way that the start of every activity has a logic relationship to a predecessor and the finish of every activity has a logic relationship to a successor."(Derebe worku, 2018)

"The scheduler may also assign lag(s) to some relationships. A lag imposes a delay between the preceding and succeeding activity. It is also possible to assign constraints to activities and milestones which require the activity or milestone to start or finish at specific points in time."(Derebe worku, 2018)

4. Determining the Duration for Each Activity

"Activity duration estimating is the process of estimating the number of work periods needed to complete individual schedule activity. A very important thing you need to be aware of and highlight during the assessment description. The concept of „project or activity run time" describes the amount of working hours needed to spend for the project or activities execution. While, the number of work periods needed, must add to run-time issues such as resource availability, weekends and holidays, lunch breaks, etc. In many cases, the number of resources that are expected to be available to accomplish an activity may determine the activity's duration. An increase or decrease to a driving resource allocated to the activity will have a direct effect on the duration (but this is not a simple straight line relationship). Other factors influencing the duration are the type or skill level of the resources available to undertake the work, resource calendars, and the intrinsic nature of the work. While it is feasible to determine a duration for an activity at any time, generally accepted good practice recommends defining the activity first, then tying it logically into the overall schedule sequence and then focusing on how long it will take to accomplish the work. At this time, the relationship between the activity and other work in the schedule will be more easily appreciated; and resource flows, activity team sizes, and the like can begin to be determined."(Derebeworku, 2018)

5. Analyzing the Schedule

"Output once complete, the schedule model will be comprised of a number of unique activities of varying durations with defined logic relationships. It provides the project team with information on what must be accomplished and the sequence required accomplishing the project deliverables. However, it still does not indicate when to do what. In order to acquire that information, the scheduling tool is activated to calculate the dates and other values within the schedule model according to the chosen scheduling method. Despite the speed of many computer programs, the scheduling function always requires three distinct processes for time analysis and a fourth if resource smoothing or leveling is being used."(Derebe worku, 2018). According to (Derebe worku, 2018),The discrete steps are:

● A start date is assigned to the start milestone. Then moving throughout the network from activity to activity (from left to right) and in the sequence defined by the logical relationships, start and finish

dates are assigned to each activity and milestone, as determined by the defined durations. This is called the forward pass. The start and finish dates on each activity are called the early dates and when the analysis reaches the end of the network it establishes the earliest possible finish date for the project.

● Next, a finish date is assigned to the end milestone. This could be the same date as the one calculated by the forward pass or a different date applied as a constraint. The analysis process then works back through the network from right to left until it arrives back at the start milestone, and another set of start and finish dates is assigned to each activity. This is called the backward pass and establishes the late dates for each activity and milestone.

● Float values are calculated by comparing the early and late dates as follows: Total float is calculated by subtracting the early finish date from the late finish date (start dates can be used instead). Free float is calculated by subtracting the early finish date of the activity from the earliest start date of the closest of its successors. Free float is never negative.

●Once the float values have been calculated, resource smoothing and/or leveling may be carried out to minimize resource over allocations or reduce the fluctuations in resource demand. If this process is to be done automatically, the scheduler needs to determine the processes and algorithms to be used.

6. Approving the Schedule

"The project team should be actively involved in reviewing the results of this initial scheduling process. The review should consider the analyzed project end date, milestone completion dates, and resource requirements (compared to resource availability) to determine the acceptability of the schedule. Where alterations are required, variations are made to the schedule logic, resource allocations and/or durations, and then the schedule is reanalyzed. The most often pursued alteration involves actions to reduce the overall duration of the schedule. The key techniques used to compress the schedule are crashing and fast tracking. These iterations continue until an acceptable project schedule is developed, one that all of the project stakeholders can agree with"(Derebe worku, 2018).

7. Base lining the Schedule

"Once agreed upon, the first version of the schedule that is developmentally complete to be approved for capture or copied for future reference is called the project baseline schedule. This baseline

becomes the benchmark against which project performance may be measured. It is a generally accepted practice that every project should have a baseline schedule in place before the execution of the project work commences; once the baseline has been approved, reports are distributed in accordance with the project's communication plan and changes are monitored and controlled through the integrated change control process"(Derebe worku, 2018).

8. Maintaining the Schedule

"Change is inevitable and every project will experience it. The last major component needed to ensure successful project execution is effective change control. The key is to determine how the project will approve and track change as it occurs throughout the project's life cycle. Change can occur simply by work progressing more quickly or slowly than planned, as well as when changes in other elements of the project occur (e.g., scope changes) and/or whether the project team decides to modify its approach to the project work. The status/update process occurs on a regular basis determined during the project planning process."(Derebe worku, 2018). According to (Derebe worku, 2018), the steps involved in maintaining the schedule at each status/update are:

● Collect and record the actual status of the work at a predetermined date/time for the project. The information collected should include the actual start dates for all activities that have commenced and actual finish dates for all activities that have been completed during the reporting cycle. Where an activity is in progress, the amount of work accomplished and the time needed to complete the remaining work should be determined. Other information gathered at this time may include data on resource utilization and costs incurred.

● Enter status information into the schedule model and re-analyze the remaining work to determine the project status. All incomplete work will be rescheduled to a date/time after the data date.

● Compare the newly updated schedule model outputs with the stored baseline and, where necessary, employ actions to lock in gains and/or recover losses (manage schedule variances). Due to the normal small variances in project execution from plan, variance thresholds may be used to determine which activities and conditions require reporting and/or further action. A commonly used date variance is the

finish variance between early finish and baseline finish, which is usually expressed in units such as working days.

● Update the schedule with any agreed changes resulting from the overall change control process to ensure the schedule model represents 100% of the current work scope of the project. The updating and adjustment processes may need a number of iterations to maintain a schedule model that remains realistic and achievable.

● Distribute reports in accordance with the project's communication plan once the updated schedule has been confirmed to be accurate.

● Update the baseline if authorized scope changes have been incorporated into the updated schedule model.

● Maintain records that explain all changes in activity durations or logic as the alterations are being made in the schedule. Activity log notes are often used for this purpose. These records will provide valuable data if it becomes necessary to reconstruct what happened and why. The scheduler must ensure a complete and thorough understanding of the various components in order to maximize the potential for their proper application and the development of a sound schedule (PMI, 2007).

High-Rise Building Scheduling

"High-rise buildings have a large degree of repetition; their scheduling needs are different from either linear projects such as highways and pipelines, or nonlinear projects such as multiple similar houses. This is because high-rise buildings involve repetitive activities that advance within the building not in one direction but in two directions: A horizontal direction through the floor, and a vertical direction from one floor to the next. The sequencing of activities is, therefore, controlled by horizontal and vertical constraints. Network-based methods for project scheduling, such as critical path method CPM, exhibit major drawbacks when applied to scheduling of repetitive projects, as widely reported in the literature. Network methods do not provide an efficient structure for the representation of repetitive tasks. All tasks are represented similarly, and there is no consideration of the location of work in the schedule. Moreover, CPM methods are not suitable for representing and/or balancing the production rates of repetitive activities. As such, production rate imbalance can negatively impact project performance. The major benefit of the LOB (line-of- balance) methodology is that it shows production

rate and duration information in an easily interpreted graphical format. repetitive scheduling techniques, such as LOB, assume purely sequential activities, various efforts have attempted to combine the benefits of the CPM and the LOB techniques." (Tarek et al., 2008).

2.5 Activity and Project Duration Estimate

According to (Derebe worku, 2018), When considerable uncertainty surrounds the duration of a given activity, sometimes it can be helpful to subdivide that activity into smaller elements. Six important rules apply to the estimation of activity durations:

1. Evaluate activities one at a time, independently of all others. For a given activity, assume that materials, labor, equipment, and other needs will be available when required. If there is a fundamental reason to believe that this will not be true, then the use of a preceding restraint may be in order.

2. For each activity, assume a normal level of manpower and/or equipment. Exactly what "normal "is in this context is difficult to define. Most activities require only a single crew of workers or a standard spread of equipment. Based on experience, conventional crew sizes and equipment spreads have emerged as being efficient and economical. In short, a normal level is about optimum insofar as expedient completion and minimum costs are concerned. A normal level may be dictated by the availability of labor and equipment. If shortages are anticipated, this factor must be taken into account.

3. If time units of working days are being used, assume a normal workday. Do not consider overtime or multiple shifts unless this typical or a part of the standard workday. Around-the-clock operations are normal in most tunnel work, for example, and overtime is extensively used on highway jobs during the summer months to beat the approaching cold weather. Some labor contracts guarantee overtime work as a part of the usual workday or workweek. In these cases, the extra hours are normal and should be considered.

4. Concentrate on estimating the duration of the individual activity and ignore all other time considerations. In particular, the completion date of the project must be put entirely out of mind. Otherwise, there is apt to be an effort made, consciously or unconsciously, to fit the activities within the total time available. This is one of the serious drawbacks of the bar chart as a planning and scheduling device. Most contractors will admit that the average bar chart is made up primarily by adjusting the individual work items to fit within an overall time requirement. The only consideration

pertinent to estimating activity duration is how much time is required to accomplish that activity, and that activity alone.

5. Use consistent time units throughout. When using the working day as a time unit, it must be remembered that weekends and holidays are not included.

6. Assume normal weather conditions in estimating the duration needed to accomplish each activity. Some operations are sensitive to the effects of weather and may not be performed at all or will take longer to complete if necessary climatic conditions are absent. In general, such activities should be estimated assuming the existence of conducive weather. Using historical weather data for the site location, operation specific calendars can be developed to account for the seasonal variations that weather will have on these activities.

According to (Derebe worku, 2018), the total run-time project estimation can be approached in several ways:

Bottom-up Estimation or Expert judgment – is the project work breakdown until the lowest level possible, at which the presented work time and resources can be determined very precisely. This method, however, is very labor intensive and uses expert knowledge, which make the method one of the most accurate.

Evaluation by analogous estimating – using data from earlier completed projects, in combination with Expert judgment can give perfect results. This method is used both for the whole project duration assessment as well as its fragment. Unfortunately, the difficulties in the application of such method are often a lack of historical data.

Parametric estimating – the method uses historical data as an input to different models and mathematical formulas. Based on the knowledge of resources availability, the amount of work to be performed and the values of factors influencing labor productivity (based on historical data), project as well as its individual activities duration can be than estimated

Reserve analysis – project manager and / or project team can be choosing to incorporate additional time referred to as contingency reserves, time reserves or buffers, into the coverall project schedule in recognition of schedule risks.

Three – Point estimate for activity duration is an estimate that includes optimistic, most likely and pessimistic estimate. This Method is known as PERT analysis or PERT method. The method used these three different time estimations for each activity duration and calculated the probability of project completion by any given time.

Estimated activity duration resulting from the application of the above methods can cause a lot of problems and before all many errors due to the lack of complete historical data. Therefore, the application of three-point estimation derived from PERT method provides very effective results, and is most frequently used by project managers

2.4. Organization Structure of the Project and Related Issues

The organization structure of the project which is given by the contractor is shown below.

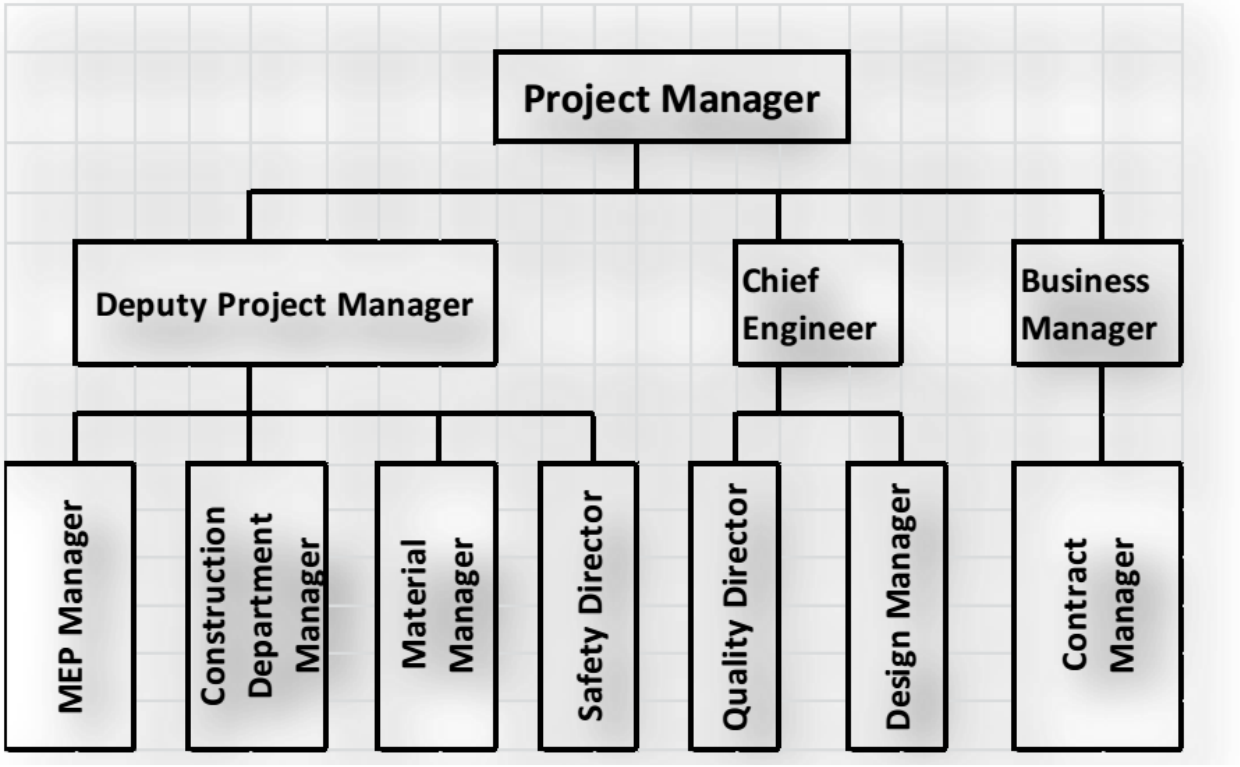

Fig 3. Organization structure of the project

For the follow up of the project progress the contractor said that every day the project construction department have meeting with the labor team to see their performance with in the day and arrange the next day's work. Summarize experience in weekly project production meeting, analyze and compare with the construction schedule. For the material wastage control; the materials department has the special personnel responsible for the material usage follow up and accordingly there will be reward and punishment. According to the contractor information external factors which affect their planning and scheduling of the project are as follows

1. The approval time of drawing is not controllable.
2. Insufficient supply of local materials and limited source choice, resulting in unstable concrete delivery at the initial stage.

3. The owner's payment is not timely.

4. There are many local festivals, and local workers have poor discipline and cannot continue on their job.

2.5. Scope of a Plan

Plan can be divided into different category depending on its nature and type of activities that we conduct. There could be long term, short term and midterm plan in an organization or in a given company. So when we say plan it has the following three major scopes according to Rosen (1972). The scope/breadth dimension of plans is a method of categorizing plans based on the range of activities covered. Some plans are very broad and long-range, focusing on key organizational objectives. Others specify how the organization will be mobilizing its resources to achieve these objectives [Rosen, 1972].

The project office is unwilling to give any material especially regarding cost, so it was impossible to analyze the cost. This research is only on the scheduling and time management of the construction of the new head Quarter construction project.

As Robert Rosen, 1972 illustrated, plans are classified into three categories based on their scope or breadth. This includes Strategic plans, Tactical plans; and Operational plans.

i. Strategic plans: determine the organization's mission objectives, major courses of action and the allocation of major resources necessary to achieve the organization's objectives. Strategic plans thus provide the organization with the overall long-range direction and lead to the development of policies. Strategic planning is usually done taking into account the environmental threats and opportunities and the internal strengths and weaknesses of the organization. Strategic plans are generally: performed by top level managers, mostly long-range in their time frame, expressed in relatively general non-specific term and a type of planning that provides general direction to the organization.

ii. Tactical plans: focus on the process of developing action plans through which strategies are executed. As mentioned earlier, strategic plans focus on what the organization will be in the future; whereas tactical plans emphasize how this will be 10 accomplished. Tactical plans refer to the implementation of activities and the allocation of resources necessary for the achievement of the organization's objectives. They specifically focus on short-term implementation of activities and resource allocations. The following are typical examples of tactical planning: Developing annual budget for each department, division, project, choosing specific means of implementing strategic plans; Deciding on course of actions for improving current operations.

iii. Operational plans: are the most specific and detailed plans, focusing on the dayto-day and week-to-week activities of the organization. Such plans include: production schedules, sales plans, lesson plans, etc. So as explained and listed above we may prepare a plan for short term, midterm or long term. So for any project when we think of planning we may plan that can be used for the life of the project or we may prepare a specific plan that can be used for short period of time or for a specific phase of a project.

This research paper only limited to time and schedule of the project, this due to the project team unwillingness to give information about the cost and other planning aspectsand also due to limited time and finance to the research.

2.6.Conceptual Framework for Project planning Practices

The framework for this research is illustrated in the below figure. It shows assessment of Project planning practices with the four project management knowledge areas.

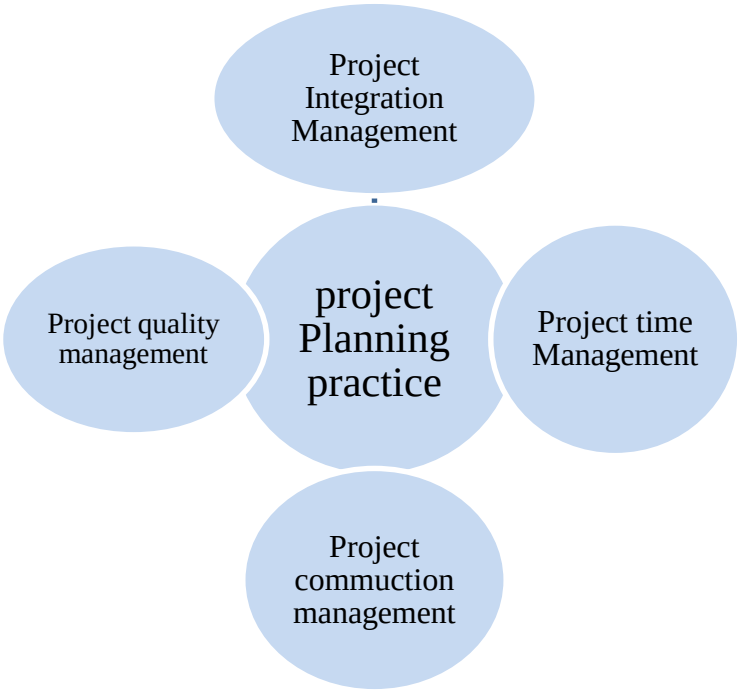

Fig.4 conceptual frame work for project planning practice

Source: prepared by the researcher, 2019

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Research Approach and method

The purpose of this research is to assess the project planning practices of the organization under study. Descriptive research design is applied to describe what the current project planning practice looks like in the study organization. The researcher has chosen this design because the major purpose of descriptive research is description of the state of affairs as it exists at present and it reports what has happened or what is happening Kothari (1990). So as justified above the major reason for conducting this study is to assess the planning practice of the organization under study.

3.2 Data type and source

For conducting the study both quantitative data is used. As a source, both primary sources of data are used. For collecting the primary data self-administered survey questionnaire will be employed for the current project staffs and project management staff of the case study organization.

3.3 Target Population of the Study

In this research the researcher considers respondents that are working now in the project. This site is selected because of convenience in location for the researcher. Based on the data obtained from commercial bank engineering office the project under study has a total of 57employees who has direct relation to the planning aspects in these site. the total population in the study the researcher would select some representative samples of the population.

3.4. Sampling Design & techniques

The sample size of the study is determined based on the following simplified formula proposed by Yamane (1997), by considering the above size of target population:

$n = N\ 1+ N\ (e^2)$

When, n is sample size, N is the population size and e is the level of precision. A 95% confidence level and e = 0.05, is assumed for the purpose of determining sample size for this study. Accordingly, the sample size for the study is calculated as follows.

So: $N=57\ n=57/1+57\ (0.05^2) = 49.89=\sim 50$

So the sample size of this study conducted was 50staffs that are directly related with the projects. Respondents are diversified in terms of educational qualification, jobs variety and other parameters. Thus stratified sampling method would be applied to avoid such heterogeneity of the population. Kothari (1990) complements the above rationale of this study for adopting the stratified sample design. Stratified sampling technique is applied to obtain a representative sample of the population. Under this type of random sampling the population is divided into subpopulation that is individually more homogenous than the total population. Then it is possible to select items from each stratum to constitute a sample.

3.5 Methods of Data collection and instrument used

The data collection was administered by using both primary and secondary data sources. The primary data is collected using questionnaire and key informant interview guide and it is the main method for data collection. It contains close ended questions with five Liker-scale from (strongly agree to strongly disagree) and was distributed to respondents. The Secondary data collected from reports released by the organization is used. Primary Data was collected using close ended standard questionnaire specifically designed to capture responses to assess the practices of the organization. Primary data collected using questionnaire was used to assess and analyze the planning implementation practice of skyscraper building of commercial bank of Ethiopia project.

3.6 Validity and Reliability of Instrument

The researcher also did Cronbach's alpha test to check reliability, of the questionnaire using SPSS 20. The reliability of the questionnaire is presented in the table below indicates that the proposed constructs have a relatively high reliability, having a Cronbach's alpha value ranging from 0.715 – 0.822, which is considered as satisfactory. Nunally (1978) suggested that the minimum of 0.70 would be an acceptable level. Similarly, it has been stated on (Hair et al., 1998) that, a commonly used value for acceptable reliability is 0.70

In addition, the researchers gave the questionnaire for advisor opinion to ensure validity of the data collection instrument. This involved going through the questionnaire in relation to the set objectives and making sure that they contain all the information that can enable answer these objectives.

Table 3.1 Reliability Result of the Constructs

No.	Variables	Cronbach's Alpha	No. of Items	Scale
1	Project integration management	0.82	5	1-5
2	Project time management	0.81	5	1-5
3	Project planning practice	0.85	6	1-5

3.7 Methods of Data Analysis

After the data gathered by using of questionnaire it would be edited, classified and tabulated by using different techniques. Both in house and field editing made and data analysis done for the data collected using the questionnaire. Descriptive statistics such as standard deviation, mean, frequency and percentage is used to analyze the data that is obtained from the questionnaire and the secondary sources. According to Goodwin (2004), descriptive statistics provides a summary of the main features of a set of data collected from a sample of participants.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter deals with the analysis and presentation of the data collected through questionnaire. Descriptive statistics like frequencies and mean were used to analyze the data. Interpretations are made based on the frequency and percentages of the data. The findings from the questionnaires were analyzed using SPSS (version 20). The results from the study are presented in the form of frequency table. Among the 50 questionnaires that were distributed to employees as representative of the total population 36 questionnaires were properly filled and returned which is 72% response rate. The first part of the questionnaire consists of the demographic information of the participants related to personal and professional characteristics. Whereas the second part intended to obtain respondent's opinion and perception regarding project planning practice of the study organization.

4.2. Respondents' Demographics

In this section, the personal profile of respondents is presented. This includes Gender, Age, working position and Educational qualification.

Table 4.1 Respondents Demography

No.	Description		Respondents	
			Frequency	Percent
1	Gender	Male	20	55.5%
		Female	16	44.4%
2	Age	20-30	23	63.8%
		30-40	12	33.3%
		40-50	-	-
		Above 50	1	2.77%
3	Educational qualification	PHD	2	5.55%
		Master Degree	14	38.8%
		First Degree	18	50%
		Diploma	2	2.77%
4	Work position	Project /site manager	3	8.33%
		Office/Site Engineer	25	69.44%
		Project Assistants and inspectors	3	8.33%
		Architect	2	2.77%

4.3Project Progress Relative to the Master Schedule

Generally the project has delay relative to the master schedule. To see this delay let's see the status of some critically delayed activities in the head quarter tower building construction.

Plan versus executed for some activities

Table 4.2 sample schedule in CBE head quarter construction project

Item No.	**Description of activity**	**Planned completion date according to the master schedule**	**Status of activity as of May 17, 2018**	Remark
1	Structure work of from floor 25-29	30/11/2017	Floor 28th finished on 28/05/2018	From this we can see there is delay in the project. So it is better to apply crush program by the rescheduling the activities.
2	Masonry (HCB) construction from floor 25-29	28/02/2018	Not yet started	
3	Preliminary decoration (plastering) from floor 3-6	10/10/2017	Not yet started	
4	Installation of curtain wall from Ground to 11th floor	25/01/2018	Not yet started	
5	Refined decoration like painting, flooring, From Ground to 2nd floor	26/03/2018	Not yet started	

4.4 Analysis of Project Planning Knowledge Areas

In a 5-point likertscale the possible score ranges from 1-5 and 3 become the hypothetical average score. A calculated mean score less than 3, which is hypothetical average, can be considered as low mean score whereas greater than 3 can be considered as high mean score.

Therefore the analysis will be made based on this assumption. In this part the planning processes or knowledge areas are descriptively analyzed. The main problem areas from the knowledge areas are identified by comparing their mean and standard deviation. The lower the mean of the knowledge areas indicate that they are poorly performed. In order to assess the current planning practices of the commercial bank headquarter projects, analysis is made based on the project planning inputs that are widely applied by PMI. In the following tables the current planning practices of the commercial bank headquarter projects is analyzed.

4.5 Project Integration Management

As you see in the table below all of results are above average but project knowledge is lowest and Project tools & techniques like Expert judgment is the highest. The numbers in bracket are percentage of the frequency. Project knowledge is not available to all the team, especially when it comes to the cost of the project they keep it very confidential.

Table 4.3 Descriptive analysis of Project integration management

NO.	***Descriptions***	***Strongly disagree (1)***	***Disagree (2)***	***Moderately agree (3)***	***agree (4)***	***Strongly agree (5)***	***Mean***
1	*Project integration management*						
1.1	Project deliverables (typically tangible components completed to meet the project objectives) were directed & managed on the project	0	1(2.78)	7(19.4)	18(50)	10(27.78)	4.027
1.2	Project tools & techniques like Expert judgment (consultants, other subject matter experts& etc.)and meetings were conducted & managed during planning and execution	0	1(2.78)	6(16.67)	14(38.89)	15(41.67)	4.19
1.3	There was effective coordination of project activities in the project	0	0	6(16.67)	18(50)	12(33.3)	4.167
1.4	Work performance data, change requests, PMP update(Scope & Requirements management plan) and project documents updates (Requirements documentation)were directed & managed	0	0	10(27.78)	18(50)	8(22.2)	3.94
1.5	Project knowledge was managed	0	3(8.3)	7(19.4)	19(52.78)	7(19.4)	3.83

Some of the respondents mention that there are main internal challenges like Time, Cost and Quality & Lack of following procedures & policies while organizational culture is responded by the respondents as the main challenges of external. This shows that the project faces both internal and external challenges. They also mention language barrier is also the biggest challenge in project, since the contractor is a Chinese company most of the employees are unable to speak English. Some respondents rated it as a successful project, and mostly responded as a project that was fairly successful. This shows that the project lacks some inputs to be more successful.

4.5 Project Time Management

Table 4.4 Descriptive analysis of Project time management

No.	***Descriptions***	***Strongly disagree(1)***	***Disagree (2)***	***Moderately agree (3)***	***agree (4)***	***Strongly agree (5)***	***Mean***
`	*Project time management*						
2.1	Under Perform time management, appropriate tools like time management &control tools and other tools were used and implemented	0	3(8.3)	5(13.89)	21(58.3)	7(19.4)	3.89
2.2	Change requests were performed properly under time of the project schedule for document modification	0	1(2.78)	13(36.1)	17(47.2)	5(13.89)	3.72
2.3	PMP updates Project documents Updates were performed under Perform time and schedule of the project.	0	0	13(36.1)	19(52.78)	4(11.1)	3.75
2.4	Timing and Schedule of the Results achieved were monitored based on project plan.	0	3(8.3)	8(22.2)	16(44.4)	9(25)	3.86
2.5	Project time and schedule were evaluated on regular basis	0	2(5.56)	9(25)	16(44.4)	8(22.2)	3.75

The numbers in the bracket are percentage of the frequency. The mean in this section are lower than the pervious. As the project teams explained time and schedule is the bigger problem even if this project is consider to be the far better project in every aspect. They usually blame the government for their dalliance. This project is mostly redesigned by the team so create the employees not have no compiled time schedule. Change requests were performed properly under time of the project schedule for document modification is the lowest of all, as the employees explains the didn't consider the schedule when change the document even if the better project in the country.

4.6 Project planning practice

Table 4.5 Descriptive analysis of Project planning practice

N0.	***Descriptions***	***Strongly disagree*(1)**	***Disagree (2)***	***Moderately agree (3)***	***agree (4)***	***Strongly agree (5)***	***Mean***
	Project planning practice						
3.1	Good and accurate plan is established for the project.	-	5(13.89)	6(16.67)	15(41.67)	10(27.78)	3.83
3.2	Project teams all know every detail of the plan of the project.	1(2.78)	4(11.1)	13(36.11)	13(36.1)	5(13.89)	3.1
3.3	Project teams use the plan for every activity they execute in project.	1(2.78)	3(8.3)	15(41.67)	12(33.3)	5(13.89)	3.47
3.4	The project is going on schedule of the plan established	1(2.78)	6(16.67)	18(50)	9(25)	2(5.56)	3.138
3.5	The working staff of the project have knowledge about time and Schedule plan	-	2(5.56)	14(38.89)	14(38.89)	6(16.67)	3.67
S	The working staff of the project always work based on the time and schedule of the plan	1(2.78)	5(13.89)	10(27.78)	17(47.22)	4(11.1)	3.58
3.6	The project managers give high concern to time and schedule plan and executing it better.	2(5.56)	2(5.56)	3(8.3)	19(52.78)	10(27.78)	3.92

As you have seen in the table above even if all of the means are above average it is the lowest of the above two section. The least of all in this section are project teams all know every detail of the plan. These clear shows all the teams in the project are not equally participate in the project.

The highest mean value in the above table 4.5 is the project managers give high concern to time and schedule plan and executing it better is a value of 3.92 which shows high strength in the project.

CHAPTER FIVE

SUMMARY OF FINDINGS OF THE STUDY, CONCLUSION AND RECOMMENDATION

5.1 Summary of Major findings of the study

According to the analysis, the below outlined findings were recognized;

And based on the answer given by the respondents for questions on general background of the project, the following summaries are made,

- As illustrated in the above section all the means are more than the hypothetical average, this show that the project has good implementation practice in terms of project integration, project time management and project management.
- Project integration table has higher mean compare to project time and project planning table which shows the project strength in this aspect.
- About the challenges of the project, it can be generalized that the challenges of the project are both internal and external. Internal challenges were lack of clarity in the scope of the project and time usage and the external challenges were organizational culture and government. When we say government it includes electric power and problem
- Project planning practice is the lowest compared to project integration management and project time management, The projects already delayed, it should have been completed by January, 2019 but it will take more time and they didn't really know when it will be completed. Redesigning the plan is a common activity in the project so they couldn't plan every detail.
- As most respondents replied specific plan is not available regarding time management this makes almost impossible to have a specific schedule

According to the respondents there is a lack of project management training access in the project or organization. The project managers don't consider project management as a separate and important field of study. The mean for Project teams all know every detail of the plan of the project is lowest which is 3.1, the respondents replied communication between the project teams needs improvement.

The respondents also illustrated there was an initially good and accurate plan is established for the project with a mean of 3.83, since going as planned is a challenge. The project

schedule of the plan established has the mean value for this is 3.138. the highest mean value is 3.92 which is the project managers give high concern to time and schedule plan and executing it better, even if the project managers gives concern to the time and schedule they fail to do so.

5.2 Conclusion

The main aim of the study was to assess the project implementing practice of Commercial bank of Ethiopia head quarter construction based on the findings of this study have led to the following conclusions. This project in general has a a very good implementing practice in terms of project integration, project time management and project planning. The project implementing practice of Commercial bank of Ethiopia head quarter construction lacks to give priority to project management and communication with project team on a regular basis. The project delayed due to lack of specific schedule. The researcher also concluded that the team members assigned to the project were not well trained & developed.

By taking into consideration the situations in the project we can conclude as follows;

- The Commercial Bank of Ethiopia head construction project has a good project implementation practice according to chapter 4 analysis part.
- Prepare good plan and schedule and then working according to it during the construction period is very important for the successful progress of the project.
- Vertical transportation system is very important for high rise building construction. In this project good planning of vertical transportation system which minimize the manpower output decrease due to increase in height.

- The project is equipment intensive which includes small machinery like plywood cutter to heavy machinery and almost all are electric power driven.

- The resident of Chinese staffs inside the site; this may facilitate the project execution.

5.3 RECOMMENDATION

The project pre-construction planning and scheduling is very good but at this stage there is delay. If this backlog not solved soon; it results overall delay of the project. Finally the following recommendations are forwarded that can contribute a lot for the successful execution of the project.

- For such a type of mega project which will be model (icon) to the city its early completion time is very important to the bank and the society. So to complete within the

  contract duration and to avoid congestion of manpower in the site; working by two shifts

  with the adjusting of the morning start time is very important that means early start of the first shift.
- As discussed before the project doesn't have detail schedule (construction, manpower, equipment and material). But for such complex project detail schedule is very important for the efficient completion of the project. So this project needs schedule revision in order to complete the project with in a better time to avoid over dalliance.
- To save time, energy and encourage local workers site cafeteria out sourced or managed by the main contractor may increase interest of workers to stay in the project. Site cafeteria motivates workers because local workers can get food inside the project with a minimum price.
- In the project during the study time there is no local subcontractors but for experience sharing and to shorten the project duration; it is good local contractors to participate in the project as a subcontractor like activities hollow concrete block work, plastering work, floor finishing work and others.

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APPENDICIES

Questionnaires

ST.MARY'S UNIVERSITY

SchoolofGraduateStudies

AN ASSESSMENT OF THE PROJECT IMPLENTATION PRACTICES:

A case on commercial bank of Ethiopia head quarter construction

Survey questionnaire

Dear Respondent!

I refer totheabovesubjectmatterandherebyconfirmthat I am a post graduate student forMA in **Project Management**inthe abovenamedestitution, carrying out a thesis paper to finish my master's degree. All responses given in this regard will be handled instrict confidence. Yourunderstandingandco-operation arebeingsolicitedforprovidingallnecessary informationneededtoaccomplishtheobjective ofthisstudy.

Section A: Demographic characteristics and general background of the respondents

1. WhatisyourGender?

Male □□Female □□

2. Position: _____

3. Age in years:

20 – 30 31 – 40 □□

41 – 50 □□Greater than 50 □□

4. Indicate your Level of Education

Degree □ Post Graduate □□Doctorate

Diploma □ high school certificate □ other □

Section B: General issues about the project

1. Is there separate project management department in the contractor construction company?

Yes [ ] No [ ]

2. Major Challenges of the Project:-

Internal

Lack of clarity in the scope of the project [ ]

Time usage and schedule [ ]

Resources [ ]

Policies and procedures [ ]

If there is other challenge specify _____

_____

External

Organizational culture [ ]

Government [ ]

Environment [ ]

If there is other challenge specify_____

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

Yes [ ] No [ ]

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

Monthly [ ] Quarterly [] Semi-annually [ ] Yearly [ ] Once [ ] None [ ]

5. What is the status of your project in terms of time and schedule?

Very successful [] Successful[ ] fairly Successful [ ] Not Successful [ ]

Section C: Project planning practices on Commercial bank of Ethiopia projectrelated to the ten Knowledge Areas of Project Management

6. What is your level of perception with the following statements "Project planning practices on commercial bank of Ethiopia project"?

CircleUsingascaleof1to5 where1=strongly disagree, 2=disagree,3=moderately agree, 4=agree,and5=strongly agree.

s.n	***Descriptions***	***Strongly disagree***(1)	***Disagree (2)***	***Moderately agree (3)***	***agree (4)***	***Strongly agree (5)***
1	***Project integration management***					
1.1	Project deliverables (typically tangible components completed to meet the project objectives)were directed & managed on the project	**1**	**2**	**3**	**4**	**5**
1.2	Project tools & techniques like Expert judgment (consultants, other subject matter experts& etc.)and meetings were conducted& managed during planning and execution	**1**	**2**	**3**	**4**	**5**
1.3	There was effective coordination of project activities in the project	**1**	**2**	**3**	**4**	**5**
1.4	Work performance data, change requests, PMP update(Scope & Requirements management plan) and project documents updates(Requirements documentation)were directed & managed	**1**	**2**	**3**	**4**	**5**
1.5	Project knowledge was managed	**1**	**2**	**3**	**4**	**5**
2.	***Project time management***					
2.1	Under Perform time management, appropriate tools like time management &control tools and other tools were used and implemented	**1**	**2**	**3**	**4**	**5**
2.2	Change requests were performed properly under time of the project schedule for document modification	**1**	**2**	**3**	**4**	**5**
2.3	PMP updates Project documents Updates were performed under Perform time and schedule of the project.	**1**	**2**	**3**	**4**	**5**

2.4	Timing and Schedule of the Results achieved were monitored based on project plan.	**1**	**2**	**3**	**4**	**5**
2.5	Project time and schedule were evaluated on regular basis	**1**	**2**	**3**	**4**	**5**
3	***Project planning practice***					
3.1	Good and accurate plan is established for the project.	**1**	**2**	**3**	**4**	**5**
3.2	Project teams all know every detail of the plan of the project.	**1**	**2**	**3**	**4**	**5**
3.3	Project teams use the plan for every activity they execute in project.	**1**	**2**	**3**	**4**	**5**
3.4	The project is going on schedule of the plan established	**1**	**2**	**3**	**4**	**5**
3.5	The working staff of the project have knowledge about time and Schedule plan	**1**	**2**	**3**	**4**	**5**
3.5	The working staff of the project always work based on the time and schedule of the plan	**1**	**2**	**3**	**4**	**5**
3.6	The project managers gives high concern to time and schedule plan and executing it better.	**1**	**2**	**3**	**4**	**5**