EPC POWER PROJECT MANAGEMENT: FAILURE AND RISK MANAGEMENT

By

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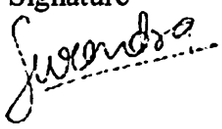
Signature



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Declaration by the Guide

This is to certify that the Mr Surendra Kumar, a student of MBA Power Management, SAPID 500064131 of UPES has successfully completed this dissertation report on "EPC POWER PROJECT MANAGEMENT: FAILURE AND RISK MANAGEMENT" under my supervision.

Further, I certify that the work is based on the investigation made, data collected and analysed by him and it has not been submitted in any other University or Institution for award of any degree. In my opinion it is fully adequate, in scope and utility, as a dissertation towards partial fulfilment for the award of degree of MBA/BBA/B.Sc.

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Executive Summary

EPC projects are completely schedule driven. Despite the vast array of project management literature and trainings available, project management methodologies fail to deliver consistent project success.

Dissertation mainly focuses on the daily challenges we encounter in managing power project like cost overrun, schedule delay and may be a failing project and also on the power project management success and failure factor, for this I used research methodology consists of – Interview Approach & Pilot Survey and case study approach.

For this I made an interview questionnaire of 20 questions and divided into three sections: *Personal details, Project management experience, and Project execution experience*, and do an online survey using social media like Whatsapp and LinkedIn, among the people I know and also urge people to participate.

Also in case study method I studied the past project outcomes and Interviewed to the involved team personnel regarding their experience on the particular project for better understanding of project scenario.

In survey there are 32 numbers of participants who are working in my own company and different companies at different levels of project management from team member to project directors, and give their opinions regarding factors that leads a project towards success or failure, this help in making project assessment plan.

Meanwhile, with survey I try to prepare a project assessment plan consist of risk analysis, which bring less surprise in the project and reduce the impact of uncertainty.

CHAPTER 1: INTRODUCTION

1.1 OVERVIEW

What is Project?

The BS ISO 10006:1997 defines a project as: "a unique process consisting of a set of coordinated and controlled. Activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including constraints of time, cost and resources"

And a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal. So a project team often includes people who don't usually work together – sometimes from different organizations and across multiple geographies.

What is Project management?

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the 42 logically grouped project management processes comprising the 5 Process Groups. These 5 Process Groups are:

- Initiating,
- Planning,
- Executing,
- Monitoring and Controlling, and
- Closing

Managing a project typically includes:

- Identifying requirements,
- Addressing the various needs, concerns, and expectations of the client as the project is planned and carried out,
- Balancing the competing project constraints including, but not limited to:
    - Scope, Quality, Schedule, Budget, Resources, and Risk.

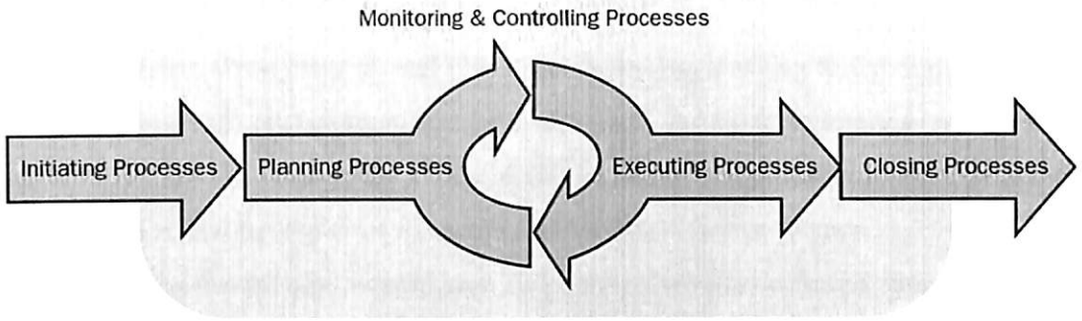


Figure 1-1. Project Management Overview

On working in EPC Power project. The project is a short-term attempt that seeks to create a product or service or facility. Projects are frequently carried out by the project team as a means of attaining the organizations crucial plan.

Project management forms the foundation of every construction project. Power projects are a multi-faceted and highly organized operation, consisting of many tasks focused solely and in conjunction with the singular purpose of constructing of a Power plant within constraint of Cost, time, and scope.

1.2 Background of EPC Project or EPC Power Project

Engineering, Procurement, and Construction or Engineering & Construction (EPC) is a particular form of contracting arrangement used in most industries where the EPC Contractor is made responsible for all the activities from design, procurement, construction, to commissioning and handover of the project to the End-User or Owner.

EPC Power Project is mainly construction of power plant also referred to as power station, generation plant or generation station, which is an industrial facility of generation of electric power. Sometime EPC project is also augmentation of existing power plant.

These power use fossil fuels such as coal, oil, and natural gas to generate electricity. Nowadays cleaner energy sources including renewable such as solar, wind, geothermal, wave and hydroelectric are also are being widely used for generating electricity.

The main objective of the subject is to find out the root causes which leads to project failure, delay or cost overrun, that put significant impact on organization. Due to some loopholes in project management in EPC power project, result in depletion in profit margin, in some project we assess that depletion of profit margin up to 10%.

The possible outcome of this research is to:

- To identify possible reason this leads project failure, delay or cost overrun.
- To prepare a project assessment plan consist of risk analysis, which bring less surprise in the project and reduce the impact of uncertainty.

With help of this survey response I came to know the possible reason the factors for successful project and reasons for unsuccessful projects.

1.3 Purpose for Study

Each year, enterprise organizations around the world face astronomical project failure rates, often wasting lots of Money per failed project.

There is no single method or organizational structure that can be used to manage projects to success. Different organizations handle the functional projects differently. Some have fragmented and decentralized groups with multiple titles indicating that they are projects, while others might have large aggregations of project management professionals in a centralized support organization.

Regardless of the physical arrangements of the functions, there is a common set of related organizational needs when properly delegated to the appropriate groups that can be used to save or manage projects.

If we enlisting the reasons for project failure we analyse that in most of the cases the project fail due to poor initial level planning and failed risk management due to lack of employee experience, poor communication, unrealistic scheduling and lack of top management involvement.

It is also evidential that sometime poor site survey or inexperienced surveyor lead company to unrealistic project which turned into failure, and also under experienced person deputed to control the project which result delay in project.

In few cases we also witness that client itself was the reason for project delay due to their management dilemma.

In government projects we faced such issues due to Government hierocracy of approval of any changed or putting any deviation, which wasted a lot of project time and result in cost overrun and manpower idleness.

In some cases material and equipment delay contribute in cost overrun and schedule delay.

Risk Analysis and Management is an important part project management which ensure that the least number of surprises occur while your project is underway. While we can never predict the future with certainty, we can apply a simple risk management process to predict the uncertainties in the projects and minimize the occurrence or impact of these uncertainties. This improves the chance of successful project completion and reduces the consequences of those risks.

1.4 Research Hypothesis

In EPC Power Project sometime uncertainty occurs, which result on cost overrun and schedule delay and may be a failing project. Which was a huge payoff, since a project brought out of failure can provide significant value to a firm.

The assumed common causes of project failure indicate that the failure factors can be grouped into three main categories. They are:

(1) ***People factors:*** this could be team management, unskilled team under experienced project manager or issue with top management.

(2) ***Project process factors:*** Material Delay, Customer hindrances, Execution plan, execution hindrances

(3) ***Project communications factors***: communication between team members, communication between customer and project team, communication between PMO and project team.

While we can never predict the future with certainty, but with the help of simple project assessment plan and risk management process to predict the uncertainties in the projects and minimize the occurrence or impact of these uncertainties.

CHAPTER 2: LITERATURE REVIEW

According to Gareis and Huemann (2000) the Project-oriented Company (POC) is an organisation which defines "Management by Projects" as an organizational strategy, applies temporary organisations for the performance of complex processes, manages a project portfolio of different project types, has specific permanent organizations' to provide integrative functions, applies a "New Management Paradigm", has an explicit project management culture, and perceives itself as being project-oriented. Thus POCs do have specific processes, such as assignments of projects and programmers, project management, programme management, quality management of projects and programmes, project portfolio co-ordination, networking between projects, personnel management in the POC and organisational design of the POC.

According to PMI (1994), project management involves applying knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations. It is the art of directing and coordinating human and material resources throughout the life of a project to achieve project objectives within specified constraints.

Lock (2003) explains that a large industrial project involves numerous differentiated activities that must focus on one final target. From the commencement of the works to the completion and delivery of the plant, the organizational structure must run smoothly on the basis of cooperation and interaction to meet the obligations undertaken towards the client. With this aim in view, it is essential for a company to possess great capability and experience in planning and optimizing the various project activities, as well as highly advanced management tools and methodologies to control time and cost constraints and to meet the challenging requirements of growing efficiency.

Project management is a specialized branch of management which has evolved in order to co-ordinate and control some of the complex activities of modern industry. The changing business environment of the twenty first century increases the range of activities coming under the periphery of project management techniques and the way projects are managed. Projects are open systems because they exist in an open environment and have to respond to the ever changing dynamics of situations requiring it to become much more adaptive than ever.

According to Seymour et al. (1992) project management is a central strategy in the changes that many organizations are undergoing as they adapt from a stable, machine like model to a more dynamic one in face of environmental turbulence and change. Project managers face difficult task of both fostering flexibility, adaptability and the acceptance of change as a permanent state, and providing support for team members to enable them to live with a process they may experience as stressful and disorientating.

Kerzner (2003) defines project management as the planning, organizing, directing, and controlling of company resources for a relatively short term objective that has been established to complete specific goals and objectives. Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the use of the processes such as: initiating, planning, executing, controlling, and closing. The term project management is sometimes used to describe an organizational approach to the management of ongoing operations also referred to as management by projects. In the same many aspects of ongoing operations are treated as projects so as to apply the project management practices easily to them.

2.1 Review Area Broad

The ultimate purpose of implementing project management is to achieve consistency in project success. Yet, there is no agreed definition of project success, which only further complicates the achievement of such.

Many researchers have highlighted the causes and effects of poor EPC project management. Ogunde, Joshua have highlighted the most important criteria of projects, which include monetary stability, work progress, quality standard, health and safety, relationships with client/stakeholder, resources, management capabilities, contractual and claim disputes, and reputation.

Among the aforementioned factors, time and cost measurements are increasingly important due to its capability to establish a crucial benchmark for the purpose of assessment of the project performance and project efficiency. It is also mandatory to determine the reasons for incomplete tasks as planned. Often, the analyst role might have been assigned to a project scheduler or other staffs who have been educated in the principles of the EPC lean methodology, however, traditional measurements are no longer applicable.

Chou, Irawan conducted research about the professional's knowledge of project management. In this study a model was suggested, where the effects of various factors on the project's success where correlated against the areas of knowledge which were studied. These areas of knowledge included project scope, time, cost and quality of the project, procurement management, risk, human resources, and communication. Poor performance of construction projects, especially in terms of time overruns and delays, cost overruns, and quality defects has drawn the attention of many construction practitioners and researchers.

Based on a study of Thamhain (1999), only 50% of project managers are familiar with project management tools and techniques, whereas only 28% implement them effectively. In a study Al-Hajj & Sayers (2014) concluded similarly that around 42% of UAE practitioners do not utilize the WBS (Work Breakdown Structure) in their projects and around 48% do not feature an OBS (Organisation Breakdown Structure). Nevertheless, the investigated projects achieve a success rate (time, cost and quality) of around 66%. Such findings are surprising findings and one may conclude that project management tools and techniques are not directly influencing project success.

During June, 2007 an anonymous survey amongst a large group of professional project managers, working in a worldwide enterprise, using the survey questionnaire determine which project performance factors, are most closely related to project failures. Based on the survey, 43% of project managers surveyed responded that project Communications factors were a key factor in the failure of projects, while 42% responded that Process factors were key and only 32% responded that People were a key factor in the failure of projects they were involved with.

2.2 Review Area Narrow

This survey also tries to find out the factor that are important and have significant role but not being considered during project planning like risks & contingency plan, customer satisfaction,

As based on Dvir et al."s observation, there are no universal project success factors to all projects and different projects have different project success factors , resulting in that contemporary research lacks in sufficient hard evidence, for justifying the positive influence of project management on project success .

On the other hand, several studies conclude that properly and timely applied project management tools and techniques may lead to project success. It involves a sensitive decision-making process to choose the right tools or technique for the specific project life cycle phase, in order to produce the demanded deliverables. Moreover, wrongly used project management tools and techniques may trigger the contrary which could even lead to project failure. According to Globerson and Zwikael (2002), the project manager is fully accountable for the success of the project. The project manager is ultimately responsible for developing the project execution strategy, which shall align with the parent organisations primary strategy [40], highlighting the importance of properly trained project managers.

Projects are better designed to respond to expected uncertainties, whereas project tasks demand proper planning and may be more challenging to project teams, when compared to routine work. In addition, the *PMBOK® Guide* (2000) points out that its project management mythology is only "*...applicable to most projects most of the time*". This leads to the questions "what" shall be used "when?" Most surprisingly, these questions remain unanswered.

Project management methodologies are not designed to be generic but applicable to all projects at any given time, as they need to be adapted to individual project objectives, in order to achieve consistent project management success. Therefore, it appears that either PM methodologies are wrongly applied or project management does not directly influence the success of projects.

2.3 Summary

As there are too many factors revealed by different researcher that are worked together for success of any project, Table I shows a summary of literature on the criteria of success for management of projects.

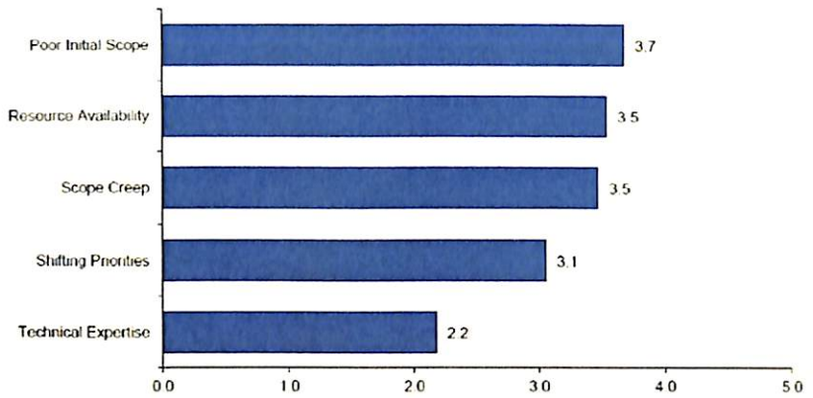
Fig.2 shows the Gartner survey outcome, factors which are probable responsible for project failure, cost overrun and delay.

Nevertheless, project management success is measured during the project life cycle via the classic performance measures. Milosevic and Srivannaboon (2006) [25] focus on the link between project management and the projects final product as the new dimension for achieving project success, whereas project success is not achieved by completing the project within its constraints, but only after achieving end-user satisfaction . Even so, this approach may intend to deliver individual business outcomes, rather than managing project activities successfully for achieving successful project completion.

Table 2-1. PROJECT SUCCESS FACTORS OF LITERATURE REVIEW

Source: compiled from Ashley *et al.* 1987 [18]; Nguyen *et al.* 2004 [19]; Rohaniyati 2009 [20]; Toor *et al.* 2008 [21].

Rank	Ashley *et al.* (1987)	Nguyen *et al.* (2004)	Rohaniyati (2009)	Toor *et al.* (2008)
1.	Organisational planning effort	Competent project manager	Project manager's capabilities and experience	Effective project planning and control
2.	Project manager goal commitment	Having adequate funding until project completion	Clarity of project scope and work definition	Sufficient resources
3.	Team motivation and goal orientation	Multidisciplinary/competent project team	Organisational Planning	Clear and detailed written contract
4.	Scope and work definition	The commitment to project	The use of a control systems	Clearly defined goals and priorities of all stakeholders
5.	Project manager capability and experience	Availability of resources	Project manager's goal commitment	Competent project manager
6.	Control system	Top management support	Project team motivation and goal orientation	Adequate communication among related parties
7.	Safety	Awarding bids to the right designer/contractor	Safety precaution and applied procedures	Competent team members



Source: Gartner IT Key Metrics Data (December 2014)

Figure 2-1. Gartner Survey Outcome

CHAPTER 3: RESEARCH DESIGN, METHODOLOGY AND PLAN

There are a number of approaches used into research method design. The purpose of design the methodology of the research approach through mixed types of research techniques. The research approach also supports the researcher on how to come across the research result findings. In this chapter, the general design of the research and the methods used for data collection are explained in detail in later part.. The purpose of this section is to indicate how the research was conducted throughout the study periods.

Research methodology is the path through which researchers need to conduct their research. It shows the path through which researchers formulate their problem and objective and present their result from the data obtained during the study period. This research design and methodology chapter also shows how the research outcome at the end will be obtained in line with meeting the objective of the study. This chapter hence discusses the research methods that were used during the research process. It includes the research methodology of the study from the research strategy to the result outcome.

The research design is intended to provide an appropriate framework for a study. A very significant decision in research design process is the choice to be made regarding research approach since it determines how relevant information for a study will be obtained; however, the research design process involves many interrelated decisions

3.1 Research Design and Data Sources

For better understanding of subject I used research methodology consists of – Interview Approach & Pilot Survey and case study approach.

So, I do an online survey between experienced project professionals- like Project team members, project managers, and organizational directors, within my organization as well as other public and private organizations those worked on national and international projects.

The Survey contains an interview questionnaire of 20 questions and divided into three sections:

1. ***Personal details***: consist of personal information like- name, age, qualification, current organization, designation and total experience.
2. ***Project management experience***: in this I asked Experience in different Project management (PM) roles like team member, project manager and so on, the sector their organization is working (public/private), geographical region their organization working are working, etc.
3. ***Project execution experience:*** involvement in project management level, no. of project manage at a time and based on their experience what are success and failure factor

And In Case Study of pervious project done my organization and interviewed the project team member with same set of questionnaire to gather the information regarding their experience on different projects.

This survey aimed for collecting hard facts. The literature review revealed interesting facts, supporting the conclusion that project management positively influences project success. A project may have individual sets of success criteria and factors. Thus, it is recommended initiating studies on a global scale, for identifying a possible generic set of project success parameters.

3.2: Survey Question

Quantitative data was collected in a survey via a web-based questionnaire, featuring 22 Questions sent to 32 selected project managers. Participants were selected based on their background, geographical location and their employment position.

This Questionnaire is created with the help of Google Doc.

QUESTIONNAIRE FOR PROJECT MANAGEMENT

This form consist some Questions related to Project Management.
Kindly Answer all Question as per your knowledge and Experience.
*** Required**

Personal Introduction

1. Name

_____

2. Your age in years

Mark only one oval.

- ◯ upto 25
- ◯ 25-29
- ◯ 30-39
- ◯ 40-50
- ◯ more than 50

3. Current Organisation

_____

4. Current Designation

_____

5. Total-experience in Years *

6. EDUCATION: Please indicate the highest level of education obtained *

Mark only one oval.

- ◯ Undergraduate
- ◯ Graduation Degree
- ◯ Master's Certification or Equivalent

PROJECT MANAGEMENT EXPERIENCE

7. Project management experience you have by recording the total number of years you have been engaged at each level. *

Please Choose "Not Applicable" to not relevant for proceed further.

Mark only one oval per row.

	1-3	4-6	7-9	10-12	13-15	More than 16 Years	Not Applicable
Team Member	◯	◯	◯	◯	◯	◯	◯
Project Manager	◯	◯	◯	◯	◯	◯	◯
Program Manager/ Director	◯	◯	◯	◯	◯	◯	◯
Other Role in Project Management	◯	◯	◯	◯	◯	◯	◯

8. What is your current primary role?

Mark only one oval.

- ◯ Team Member
- ◯ Project Manager
- ◯ Program Manager/ Director
- ◯ other

9. Is the organization you work for in the public or private sector? *

Check all that apply.

- [ ] Public Sector
- [ ] Private Sector
- [ ] Both

10. Do the projects you usually work on involve more than one geographic region? Base your selection on one of the following categories. *

Check all that apply.

- [ ] One city/region
- [ ] National
- [ ] International

11. Which category best describes the project management activities/environment in which you work? *

Mark only one oval.

- ◯ Procurer
- ◯ Supplier
- ◯ Prime Contractor
- ◯ Internal Business
- ◯ Other

12. What is your organization's primary business activity? *

Mark only one oval.

- ◯ Engineering & Construction
- ◯ Business Services
- ◯ Information Technology and Telecommunications
- ◯ Computers/Software/DP
- ◯ Industrial Processes

13. Which of the categories listed below best describes the level of maturity of the project management systems in your operational area? *

Mark only one oval.

- ◯ Initial Level - ad hoc and chaotic; relies on the competence of individuals not the organization's
- ◯ Repeatable Level - project management system and plans are based on previous experience.
- ◯ Defined Level - common, organization wide understanding of project management activities, roles and responsibilities.
- ◯ Managed Level - stable and measured processes against organizational goals; variations are identified and addressed
- ◯ Optimising Level - the entire organization is focused on continuous improvement.

Project Execution Experience

Please answer below questions as per your past Experience.

14. How many projects do you typically work on, or manage, at one time? *

Mark only one oval.

- ◯ 1
- ◯ 1-2
- ◯ 2-4
- ◯ More than 4

15. Indicate the phase(s) of a project during which you are most often involved. *

Check all that apply.

- ☐ Initiation/Concept
- ☐ Planning/Development
- ☐ Execution/Implementation
- ☐ Finalisation/Commissioning/Handover

16. What is the typical duration of the primary project(s) that you work on? *

Mark only one oval.

- ◯ Up to 3 Months
- ◯ 3-6 Months
- ◯ 6 Months to 1 year
- ◯ 1-2 tears
- ◯ >2 years

17. What is the typical value (in INR) of the projects you work on or manage, in your primary project role? *

Mark only one oval.

- ◯ 0<50,000
- ◯ 50,001 - 250,000
- ◯ 250.001- 1,000,000
- ◯ 1,000,001- 5,000,000
- ◯ 5.000,001 - 10,000,000
- ◯ 10,000,001 - 25,000,000
- ◯ 25,000,001 - 50,000,000
- ◯ > 50,000,000

18. What is important for a successful project? *

please set priority, where 1= least important ....5= most important

Mark only one oval per row.

	1	2	3	4	5
Initial Project Estimate/Planning (Costing & Schedule)	◯	◯	◯	◯	◯
Defined Customer Requirement	◯	◯	◯	◯	◯
Skill & Resource Planning	◯	◯	◯	◯	◯
Effective communication Between Project Team and Customer	◯	◯	◯	◯	◯
Project briefing to Project team	◯	◯	◯	◯	◯
Project Risk management	◯	◯	◯	◯	◯
Team Management	◯	◯	◯	◯	◯
Execution Plan	◯	◯	◯	◯	◯
Contingency plan	◯	◯	◯	◯	◯

19. If anything apart from above needed for a successful project, Please mention here

20. Factors for Project Failure, Delayed, or cost overrun. *

please set priority, where 1= least important ....5= most Important

Mark only one oval per row.

	1	2	3	4	5
Initial Planning(Budget & Schedule)	◯	◯	◯	◯	◯
Project Team(PM, Execution team or PMO)	◯	◯	◯	◯	◯
Communication between PMO and Execution Team	◯	◯	◯	◯	◯
Execution Plan	◯	◯	◯	◯	◯
Material Planning	◯	◯	◯	◯	◯
Change in Customer Requirement	◯	◯	◯	◯	◯
Delay Customer Authorization	◯	◯	◯	◯	◯
Customer hindrances	◯	◯	◯	◯	◯
Contingency Plan	◯	◯	◯	◯	◯

21. If anything apart from above needed for Project Failure, Delayed, or cost overrun., Please mention here

22. Project Efficiency. *

please set priority, where 1= least important ....5= most Important

Check all that apply.

	1	2	3	4	5
Project Completed on time or earlier.	☐	☐	☐	☐	☐
Project completed within or below Budget.	☐	☐	☐	☐	☐
Meet Customer Satisfaction.	☐	☐	☐	☐	☐
Project outcome will contribute to future project.	☐	☐	☐	☐	☐
Project Create a benchmark for competitors	☐	☐	☐	☐	☐

3.3 Interview Procedure

With the above questionnaire, a share link is generated by Google Doc and I share the link individually to the people I know and professional via LinkedIn Message and request them to be a part of this survey, and provide their valuable opinion.

1. More than 6 year of experienced professional response has been taken into consideration for further study.
2. Survey participants had chosen on the basis of their have different role(s) in project management process like top management professional, project managers, core team members of project and other backend professional- purchase, logistic, finance etc.
3. Survey done between the people who are in the organization which is directly or indirectly involved in EPC power project like- Procurer, prime contractors, supplier/vendors and other parties(I&C contractors, product support)

For Case Study: I studied project done in last five years and interview individual project team member with the same set of questions used in online survey.

3.4 Data Analysis Procedure:

Online survey and case study interviewed response of individual is captured in digital form via Google Doc response section, and then responses exported in the form of Microsoft Excel for analysis.

With help of Microsoft excel the data has been interpreted into charts for analysis, tabular and graphical representation.

CHAPTER 4: FINDING AND ANALYSIS

4.1 Descriptive Statistics

Finding of the online survey implies on many factors of project management that leads to the study of factors of success and failure of a project (See Appendix for sample).

1. Figure4-1, Avg. Experience level of most participants to be concluded between 6-7 years. Although few 20+ Experience participants.

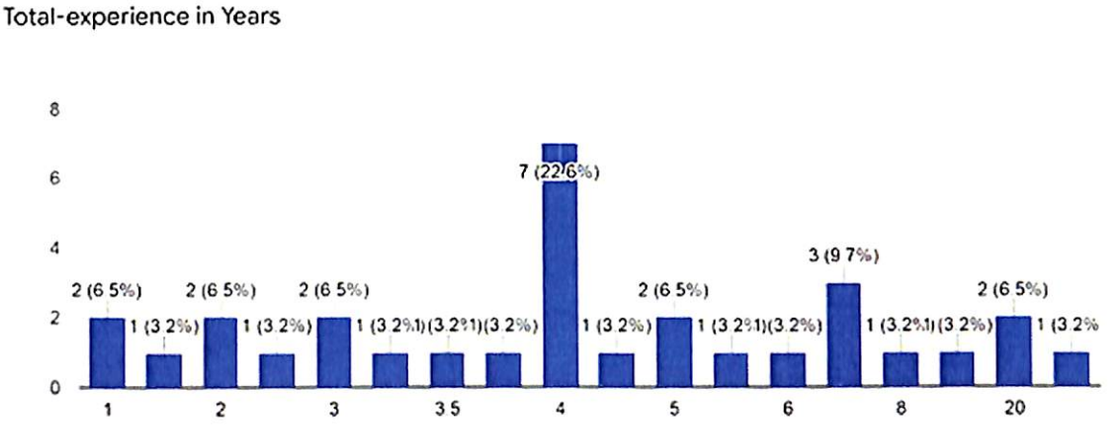


Figure 4-1. Response: Total Experience In Years

2. Figure 4-2 show among many responses only 6.5% are of top management , 32.3% are project manager, 38.7% are team member , 22.6% are fulfilling other roles of project management.

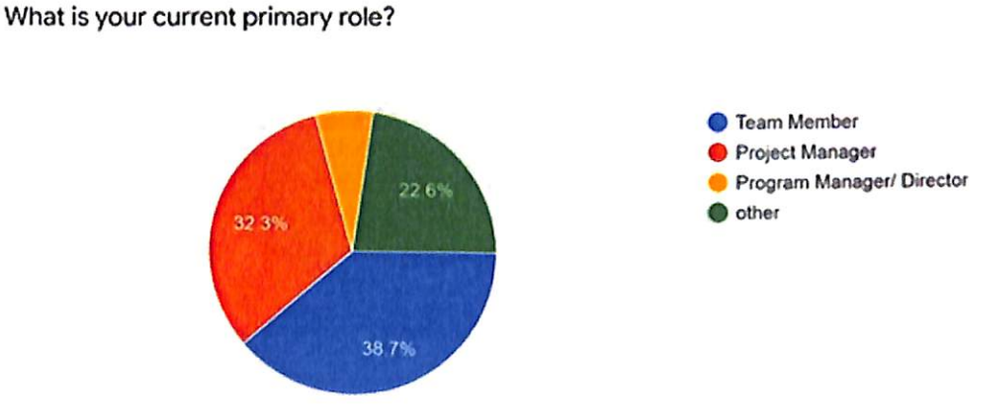


Figure 4-2. Response: Primary Role of Participants

3. Survey shows 64.5% participants involved in execution/implementation phase of project, 54.8% initial planning/development, 38.7% in initial/concept phase and rest are part of finalisation/commissioning/handover (Figure 4-3).

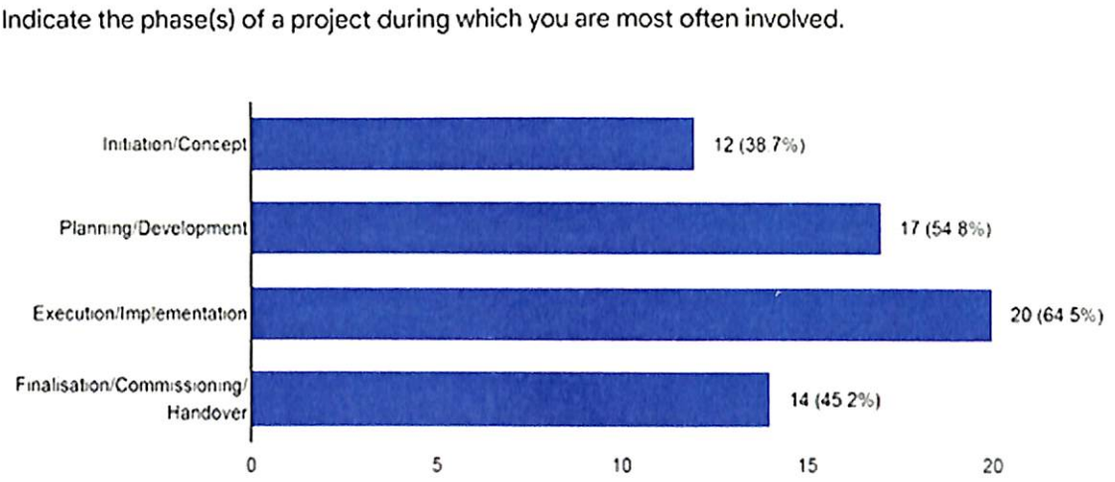


Figure 4-3. Response: Participants Involvement in Project Phase

4. Only 54% of total survey responses are taken in consideration as the same number is from Engineering & Construction background (Figure 4-4).

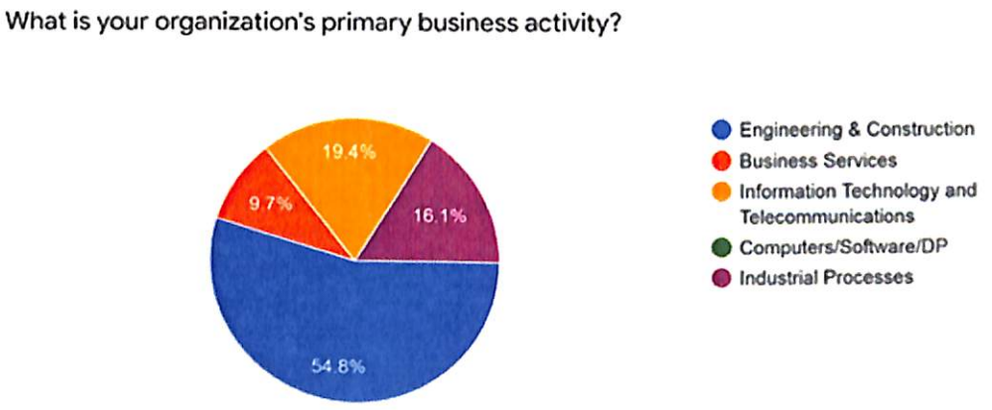


Figure 4-4. Response: Participants Organization's Activity

5. The below data show Figure 4-5, the level of project management maturity of participant's organization.
   - 3.2 % Initial Level - ad hoc and chaotic; relies on the competence of individuals not the organizations
   - 22.6% Repeatable Level - project management system and plans are based on previous experience.
   - 32.3% Defined Level - common, organization wide understanding of project management activities, roles and responsibilities.
   - 16.1% Managed Level - stable and measured processes against organizational goals; variations are identified and addressed
   - 25.8% Optimising Level - the entire organization is focused on continuous improvement.

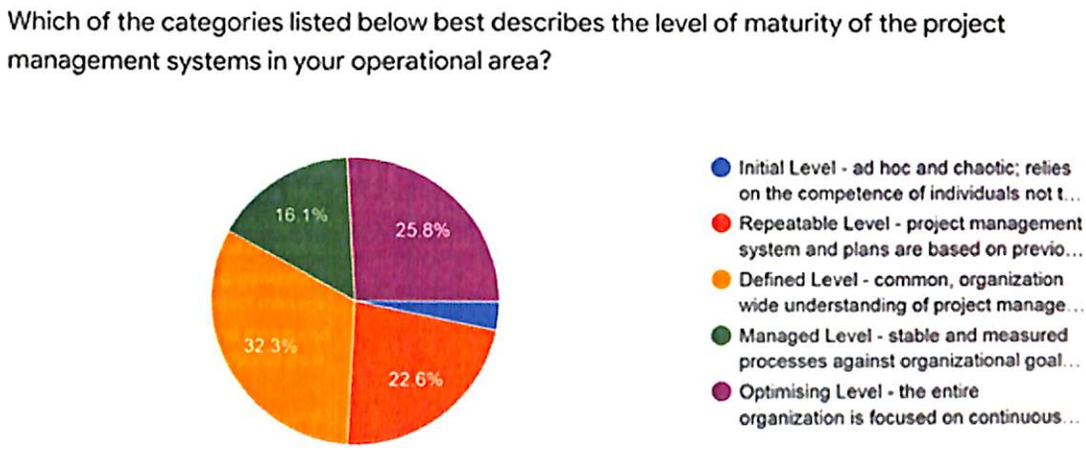


Figure 4-5. Response: Organization's Project Management System

6. This below Figure 4-6 ,shows the primary activity or involvement of organization in the sector.

   29% prime contractor, 25.8% other business involvement in project, 16.1% procure

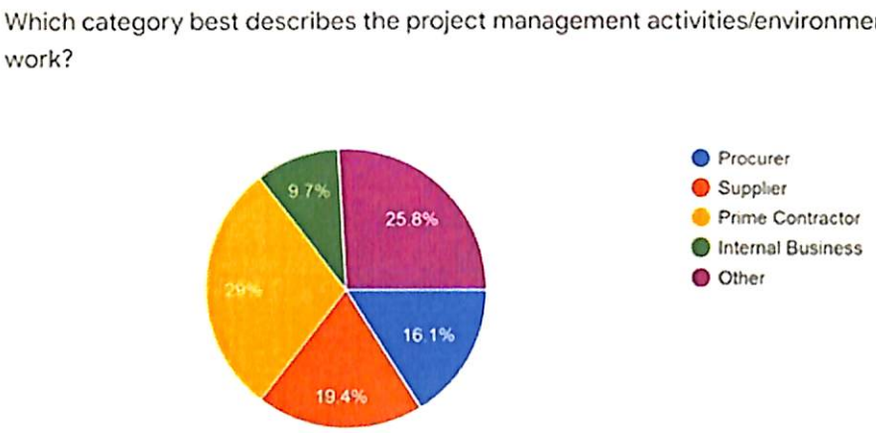


Figure 4-6. Response: Organization's Business activity

7. As per the survey outcome(Figure 4-7) for successful project factors shown as five point Likert scale in below chart, it based on the individual experience of participants past projects. This chart helps us in determining the important milestones to make project successful.

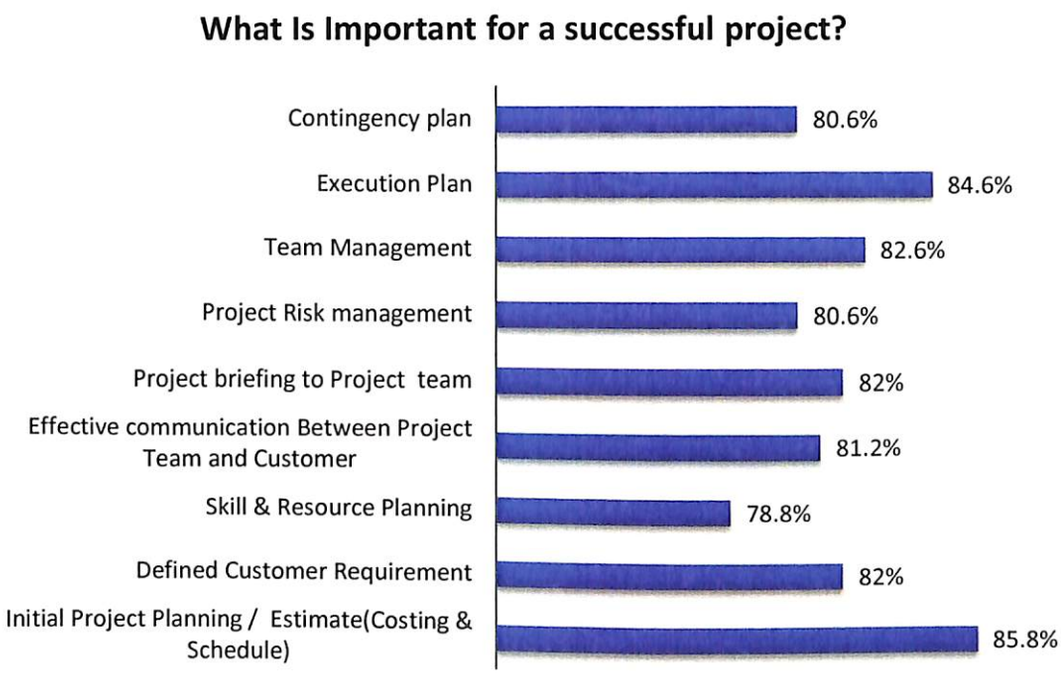


Figure 4-7. Response: Successful Project factor

Ranking of important phase has been arranged in Table 4-1, according to survey outcome.

Table 4-1. Success Factor (Ranking as per chart)	
1. Initial Project Planning	85.8 %
2. Execution Plan	84.6%
3. Team Management	82.6%
4. Project Briefing to Team	82%
5. Defined customer requirement	82%
6. Communication with customer	81.2%
7. Project risk management	80.6%
8. Contingency plan	80.6%
9. Skill & Resource Planning	78.8%

As per the data the most important phase of project to be concluded as the Initial phase i.e. initial planning/cost estimation/realisation of project scope and thereafter Execution planning, team management, Project briefing, defined customer requirement, communication with customer, Skill & resource planning, and also risk management & contingency plan hold an important role factor in project success.

8. Now, if we talk about the factors which are associated to the project failure, delay or cost overrun, I witness mix opinion of participants on this segment although they give their valuable feedback as per their experience on this, shown as five point Likert scale in below chart.

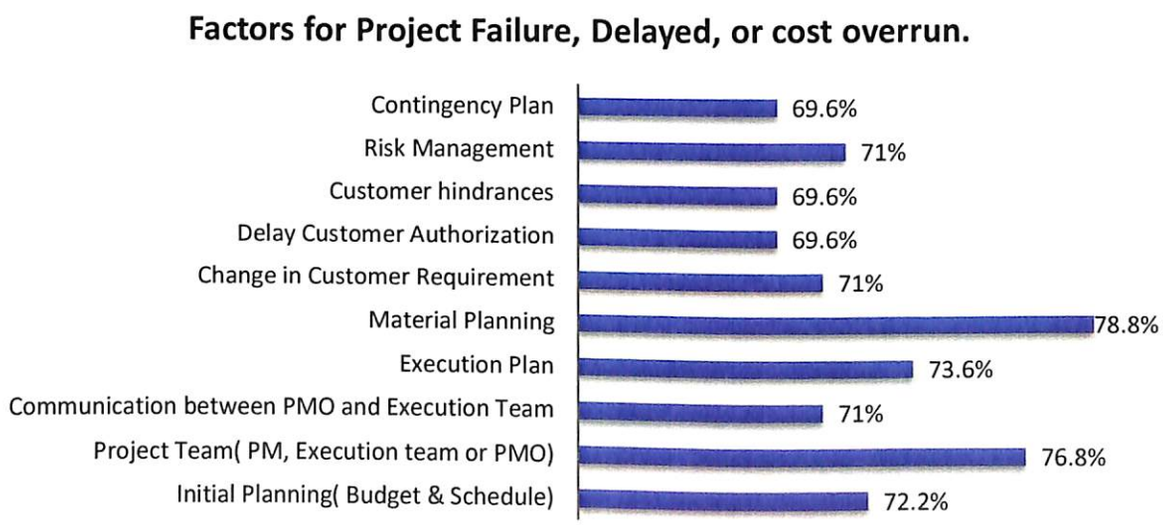


Figure 4-8. Response: Project Failure Factors

As per the chart (Figure 4-8) the ranking table has been made, and it highlighted the major aspect of project to be delay, cost overrun or failure likewise material planning, project team management, execution plan failure, unrealistic initial planning, miscommunication or change of customer requirement. And there is customer hindrance, risk management & contingency planning which is also responsible for such catastrophe.

Table 4-2. Failure Factor	
1. Material Planning	78.8%
2. Project Team management	76.8%
3. Execution Plan	73.6%
4. Initial planning	72.2%
5. Communication and change of customer requirement	71%
6. Risk Management	71%
7. Delay in customer authorization	69.6%
8. Customer hindrances	69.6%
9. Contingency plan	69.6%

Apart from above categories participants also mention some of other factor that they experienced while doing their projects as:

- Team members reshuffled or unavailable
- Costing and budget or changing after getting project
- Quality monitoring is also another reason for project failure.
- Client not clears about its requirements from starting of the project.
- Poorly defined project scope and failure to identify key assumptions.

9. The outcome of interview done on Case Study approach the reasons for project failure, delay or cost overrun are listed as:

- Bad project selection.
- Under skilled team.
- Negligence of risks and no contingency plan
- Top management issue with decision making
- Client /customer Site not clear for project

10. In view of participant the project efficiency is shown in shown as five point Likert scale in below chart.
    - 86% participant thinks meeting customer satisfaction and project outcome will contribute to future project is the grater goal of any project.
    - While 84% believe that completing the project within dead line is greater success
    - 80% participant thinks creating project benchmark is real success.
    - 74% wants to complete the project within allocated budget for project success.

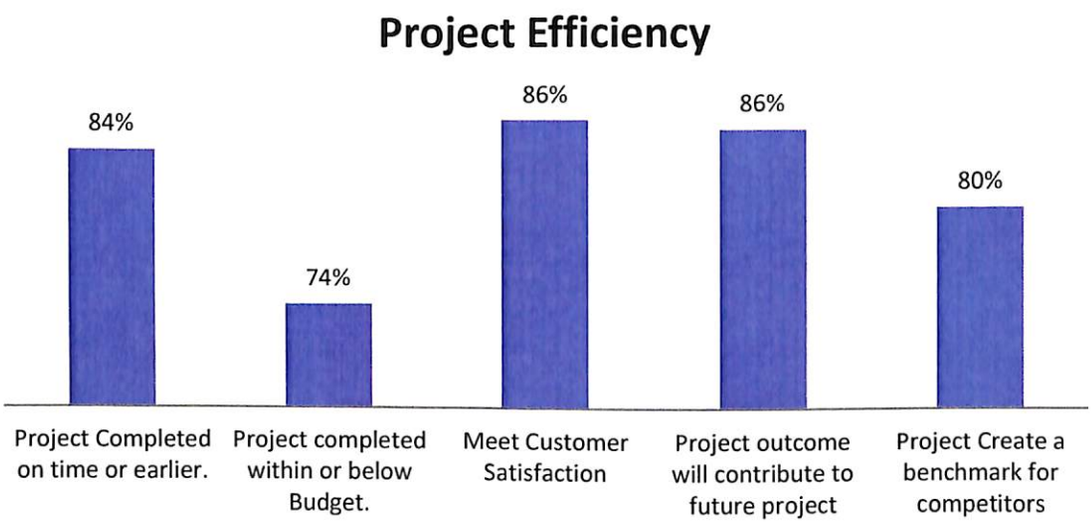


Figure 4-9. Response: Project Efficiency

CHAPTER 5: INTERPRETATION OF RESULT

5.1 Interpretation of Result

- The personnel who are part of Engineering & Construction industry, only their response is considered for this survey.
- The experience level of participants shows their maturity in the project management environment and their contribution toward the organization to achieve corporate goals.
- This data show the major participants are team member of project management and involve in different critical processes of project.
- Major portion of participants involved in execution/implementation which is the most important and critical part of any project.
- Most of the participants are either part of the organization which is a prime contractor or procurer of the project.

Table 5-1. Comparison of Success and Failure Factor

Success Factor	Failure Factor
1. Initial Project Planning	11. Material Planning
2. Execution Plan	12. Project Team management
3. Team Management	13. Execution Plan
4. Project Briefing to Team	14. Initial planning
5. Defined customer requirement	15. Communication and change of customer requirement
6. Communication with customer	16. Risk Management
7. Project risk management	17. Delay in customer authorization
8. Contingency plan	18. Customer hindrances
9. Skill & Resource Planning	19. Contingency plan

❖ Most successful project have good initial planning backed by proven execution plan, and team member have well set of skills for the project, also having well risk analysis and well prepared contingency plan, resource planning.

- ❖ For unsuccessful/failed project the reason lighted as poor material planning, poor project team, unaccomplished execution plan, unrealistic initial planning, miscommunication between core team and with client as well, and change management. Sometime it may be due to client/customer hindrances or delay authorization, in few cases participant also acknowledges that customer itself not aware about project requirement.

  There is also lack of risk management and contingency planning to overcome any uncertainty.

5.2 Comparison of Research Hypothesis and Survey Outcome

In research hypothesis as I categorizes the failure factor into three group i.e.

i) People Factor: team management, unskilled team under experienced project manager or issue with top management.

ii) Project process Factor : Material Delay, Customer hindrances, Execution plan, execution hindrances, Risk management & contingency plan

iii) Project Communication factor: communication between team members, communication between customer and project team, communication between PMO and project team.

And as per the online survey outcome and case study approach, the main success and failure factors comes to know are listed in Table 5-1, which indicates that Project Process Factor is the main reason for project failure, delay or cost overrun, also backed by project communication factor and then lastly people factor.

Same as for project success the main factor contributes is project process factor, people factor and project communication factor respectively.

From the analysis of success and failure factor, I come to know that project process factor plays an significant role in the project, as it define the complete planning from initial to final execution, and make execution team capable to encounters any sort of uncertainty by proper analysis of project risks for preparing contingency plan for the same of the whole project.

CHAPTER 6: CONCLUSION AND SCOPE OF FUTURE WORK

6.1 Conclusion

As we understand from previous chapter the important factors for successful project and failed project.

The main reasons for project failure, delay or cost overrun is Project Process Factor and Project communication factor later People factor.

Under the Project process factor the top three prime factors are as below:

i) Material planning:

It started with request of quotation (RFQ) of item listed in bill of material (BOM), subsequently vender selection as per pricing and provided with time to manufacture and delivery to the project site.

Reasons for fail Material planning could be:

- Unavailability of raw Material.
- Change of product specification.
- Due to manufacturing defect in final product.
- Logistic delay.

ii) Project team management & Communication:

It's an important part project human resource management. Manage Project Team is the process of tracking team member performance, providing feedback, resolving issues, and managing changes to optimize project performance.

Reasons for failure:

- Unskilled Team.
- Poor conflict management.
- No clearly defined responsibility and accountability.
- Lack of Leadership skill.

iii) Execution planning:

The project execution plan (PEP) is the governing document that establishes the means to execute, monitor, and control projects.

Reasons for failure:

- Unrealistic initial planning
- Complex plan
- Unplanned Risk
- Scope creep planning

Project Communication is as the second most frequent cause of project failure and reasons for failed project communication are:

- No communication plan
- Lack of stakeholder engagement
- Communication gap between PM and Execution team

Failure is neither inevitable nor random. Much can be done to support execution and ensure a successful project conclusion. Consider these ways to prevent common failures a checklist to review, examine, and signoff on before commencement of every project.

As we know projects most commonly fail because there is a lack of attention and efforts being applied to seven project factors:

- Poor initial project Planning
- Lack of executive-level support
- Wrong team members
- Poor communication
- No risk management
- Inability to manage change

6.2 Recommendation

A project has a degree of uncertainty. So, here we are try to develop a project assessment process which is compiled of Project management process and risk management methodology.

1) The project assessment process consists of Project Management distinct phases
   - The assessment of failed project.
   - Managing Project Scope.
   - Develop Project work breakdown structure (WBS).
   - Prepare project processes (both enterprise related and project-specific)
   - Analyse project resources (human and other)
   - Prepare Initial project schedule

Project Scope Management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. Managing the project scope is primarily concerned with defining and controlling what is and is not included in the project

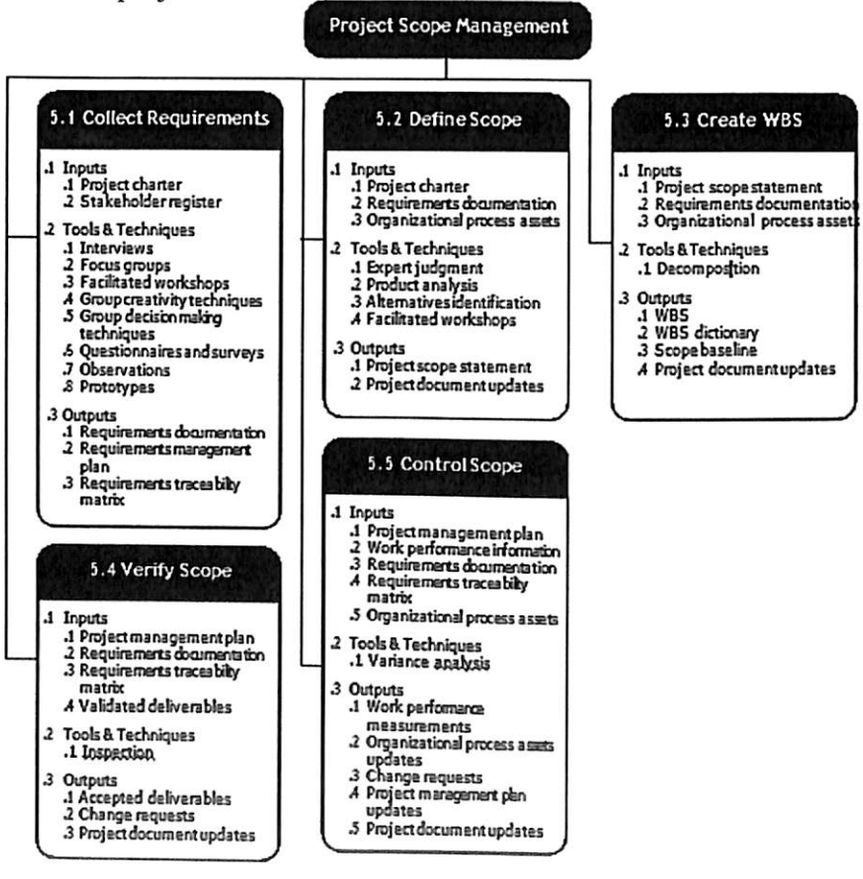


Figure 6-1. Project Scope Management Breakdown

WBS is the process of subdividing project deliverables and project work into smaller, more manageable components. The work breakdown structure (WBS) is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables, with each descending level of the WBS representing an increasingly detailed definition of the project work. The WBS organizes and defines the total scope of the project, and represents the work specified in the current approved project scope statement.

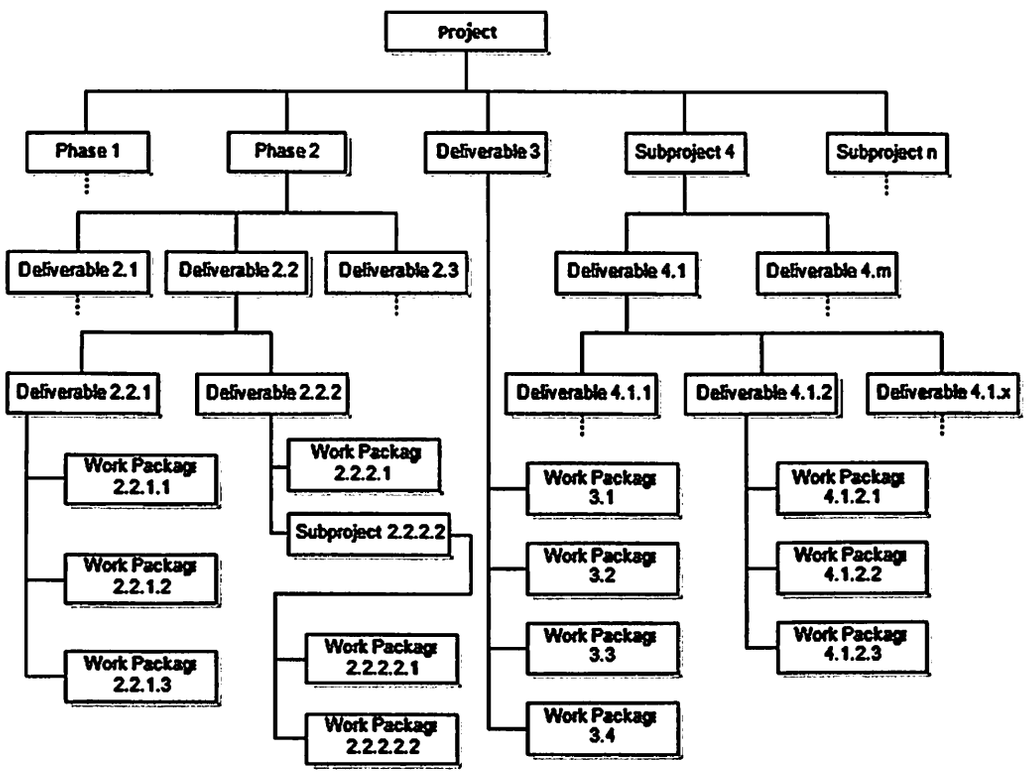


Figure 6-2. Sample Work Breakdown Structure

2) The project assessment process consists of Risk Management & Contingency plan distinct phases

- Find Project risks (those in the risk log and risks known but not recorded)
- Perform Qualitative & Quantitative Risk Analysis
- Prepare Risk Reduction Plan, and Monitor & Control risks response plans.

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

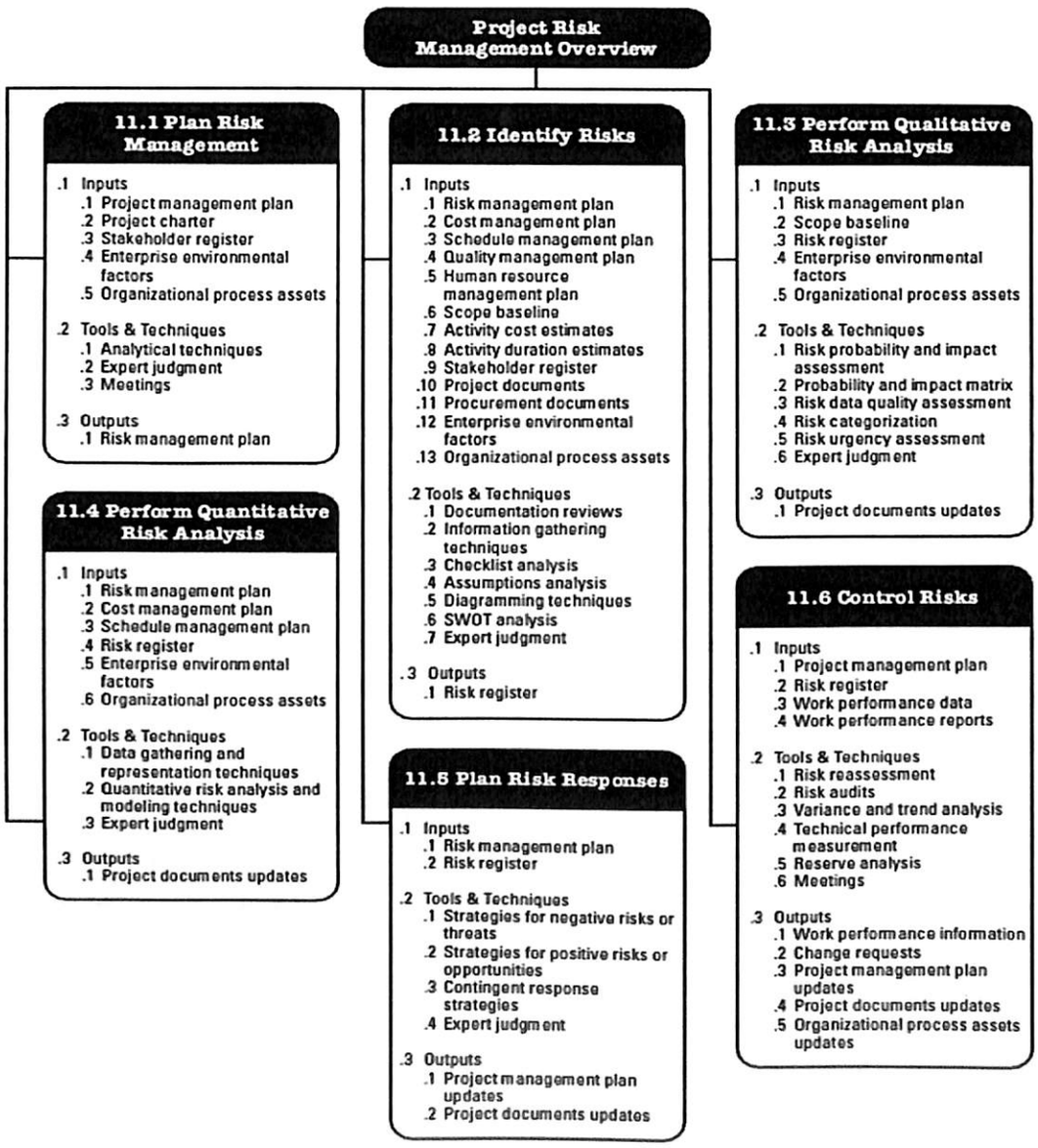


Figure 6-3. Risk Management Overview

For a successful risk management, there are five (5) steps to be executed in a proper manner (Figure 6-3).

Figure 6-4. Stages of Risk Management

- Plan Risk Management: Defining methodology to be applied for managing the risk
- Identification of Risk(s): listing out the possible uncertain events those could affect the project outcome.
- Perform Risk Analysis: analysing the probability of occurrence of the risk and possible impact (Qualitative & Quantitative) on the project outcome.
- Plan Risk Response(s): developing strategies for the possible and probable risk to either enhance the positive effect or reduce the negative consequence.
- Control Risk(s): performing all the above steps/ identifying new risks/ evaluation risk process effectiveness throughout the project.

The Risk Management Process

- Risk Identification: Analyse the project to identify sources of risk.
- Risk Assessment: Assess risks in terms of Severity of impact, Likelihood of occurring, Controllability.
- Risk Response Development: Develop a strategy to reduce possible damage, Develop contingency plans.
- Risk Response Control: Implement risk strategy, Monitor and adjust plan for new risks, Change management

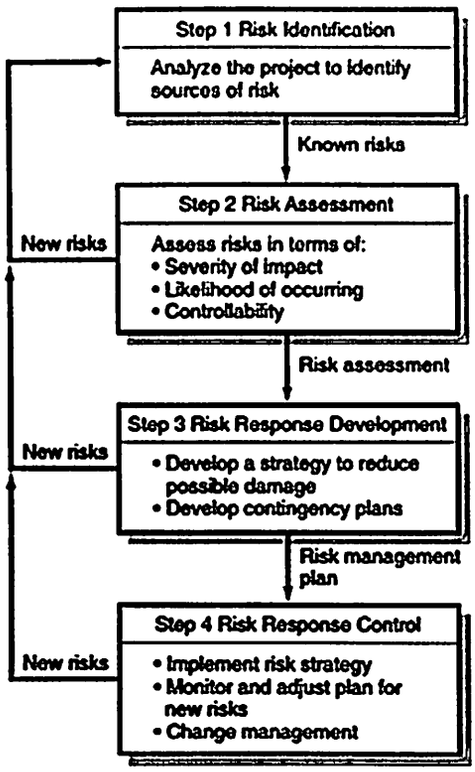


Figure 6-5. Risk Management Process

Elements of risk control

1) Mitigate Risks: Take whatever actions are possible in advance to reduce the effect of Risk. It is better to spend money on mitigation than to include contingency in the plan.

2) Plan for Emergencies: For all those Risks which are deemed to be significant, have an emergency plan in place before it happens.

3) Measure and Control: Track the effects of the risks identified and manage them to a successful conclusion.

Risk Management and Contingency Plan

A contingency plan is executed when the risk presents itself. The purpose of the plan is to lessen the damage of the risk when it occurs. Without the plan in place, the full impact of the risk could greatly affect the project. The contingency plan is the last line of defence against the risk. For a project manager, it is better to have the contingency ready for implementation than to have to develop one as the risk is taking its toll. The contingency is another instrument in the arsenal of tools that a project manager carries to support project success.

The following are the key steps in contingency planning:

Note where there are resources that can be used in an emergency. Also, note where in your contingency plan these resources might be applied.

- Identify dates that if missed will negatively impact your plan, for example getting approval from a group or committee that only meets every now and then.
- Know your contingency plan. Check for any weak links and strengthen them. Identify any slack that you can find in it.
- See if you can find points in your plan where alternative routes can be taken, and think through each one's scenario to add flexibility to your plan.
- Use your experience to help you see patterns in your project's ebb and flow of activity to sharpen your plan.

Always have Contingency reserve in term of cost or time, which is needed to reduce the risk of not achieving project objectives to acceptable level.

This certainly is not the end of the journey for us on the effective Project management. It is a constant learning process to be able to constantly improve our practices to increase our process efficiency.

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APPENDIX:
INTERVIEWER SCRIPT

QUESTIONNAIRE FOR PROJECT MANAGEMENT

This form consist some Questions related to Project Management.
Kindly Answer all Question as per your knowledge and Experience.

Personal Introduction

Name

Sumit singh

Your age in years

25-29

Current Organisation

Tata projects ltd

Current Designation

Planning engineer

Total-experience in Years *

3.6

EDUCATION: Please indicate the highest level of education obtained *

- ○ Undergraduate
- ◉ Graduation Degree
- ○ Master's Certification or Equivalent

PROJECT MANAGEMENT EXPERIENCE

Project management experience you have by recording the total number of years you have been engaged at each level. *

Please Choose "Not Applicable" to not relevant for proceed further.

	1-3	4-6	7-9	10-12	13-15	More than 16 Years	Not Applicable
Team Member	○	○	◉	○	○	○	○
Project Manager	◉	○	○	○	○	○	○
Program Manager/ Director	◉	○	○	○	○	○	○
Other Role in Project Management	◉	○	○	○	○	○	○

What is your current primary role?

Team Member ▾

Is the organization you work for in the public or private sector? *

- [ ] Public Sector
- [x] Private Sector
- [ ] Both

Do the projects you usually work on involve more than one geographic region? Base your selection on one of the following categories. *

- [ ] One city/region
- [x] National
- [ ] International

Which category best describes the project management activities/environment in which you work? *

Procurer

What is your organization's primary business activity? *

Engineering & Construction

Which of the categories listed below best describes the level of maturity of the project management systems in your operational area? *

Initial Level - ad hoc and chaotic; relies on the competence of individuals not the organization's

Project Execution Experience

Please answer below questions as per your past Experience.

How many projects do you typically work on, or manage, at one time? *

- ○ 1
- ○ 1-2
- ◉ 2-4
- ○ More than 4

Indicate the phase(s) of a project during which you are most often involved. *

- ☑ Initiation/Concept
- ☑ Planning/Development
- ☑ Execution/Implementation
- ☑ Finalisation/Commissioning/Handover

What is the typical duration of the primary project(s) that you work on? *

3-6 Months ▾

What is the typical value (in INR) of the projects you work on or manage, in your primary project role? *

> 50,000,000 ▾

What Is Important for a successful project? *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Project Estimate/Planning (Costing & Schedule)	○	○	○	◉	○
Defined Customer Requirement	○	○	○	○	◉
Skill & Resource Planning	○	○	○	◉	○
Effective communication Between Project Team and Customer	○	○	○	○	◉
Project briefing to Project team	○	○	○	○	◉
Project Risk management	○	○	○	◉	○
Team Management	○	○	○	○	◉
Execution Plan	○	○	○	○	◉
Contingency plan	○	○	○	○	◉

If anything apart from above needed for a successful project, Please mention here

Nothing

Factors for Project Failure, Delayed, or cost overrun. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Planning(Budget & Schedule)	○	○	○	○	◉
Project Team(PM, Execution team or PMO)	○	○	○	○	◉
Communication between PMO and Execution Team	○	○	○	○	◉
Execution Plan	○	○	○	○	◉
Material Planning	○	○	○	○	◉
Change in Customer Requirement	○	○	○	○	◉
Delay Customer Authorization	○	○	○	○	◉
Customer hindrances	○	○	○	○	◉
Contingency Plan	○	○	○	○	◉

If anything apart from above needed for Project Failure, Delayed, or cost overrun., Please mention here

No

Project Efficiency. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Project Completed on time or earlier.	☐	☐	☐	☐	☑
Project completed within or below Budget.	☐	☐	☐	☐	☑
Meet Customer Satisfaction.	☐	☐	☐	☐	☑
Project outcome will contribute to future project.	☐	☐	☐	☐	☑
Project Create a benchmark for competitors	☐	☐	☐	☐	☑

Thanks

QUESTIONNAIRE FOR PROJECT MANAGEMENT

This form consist some Questions related to Project Management.
Kindly Answer all Question as per your knowledge and Experience.

Personal Introduction

Name

Ankit Bhatt

Your age in years

25-29

Current Organisation

Jakson Limited

Current Designation

Asst. Manager

Total-experience in Years *

7

EDUCATION: Please indicate the highest level of education obtained *

- ○ Undergraduate
- ◉ Graduation Degree
- ○ Master's Certification or Equivalent

PROJECT MANAGEMENT EXPERIENCE

Project management experience you have by recording the total number of years you have been engaged at each level. *

Please Choose "Not Applicable" to not relevant for proceed further.

	1-3	4-6	7-9	10-12	13-15	More than 16 Years	Not Applicable
Team Member	○	○	○	○	◉	○	○
Project Manager	◉	○	○	○	○	○	○
Program Manager/ Director	○	○	○	○	○	○	◉
Other Role in Project Management	○	○	○	○	○	○	◉

What is your current primary role?

other ▾

Is the organization you work for in the public or private sector? *

- [ ] Public Sector
- [x] Private Sector
- [ ] Both

Do the projects you usually work on involve more than one geographic region? Base your selection on one of the following categories. *

- [ ] One city/region
- [x] National
- [x] International

Which category best describes the project management activities/environment in which you work? *

Prime Contractor

What is your organization's primary business activity? *

Engineering & Construction

Which of the categories listed below best describes the level of maturity of the project management systems in your operational area? *

Managed Level - stable and measured processes against organizational goals; variations are identified and addressed

Project Execution Experience

Please answer below questions as per your past Experience.

How many projects do you typically work on, or manage, at one time? *

- ○ 1
- ○ 1-2
- ◉ 2-4
- ○ More than 4

Indicate the phase(s) of a project during which you are most often involved. *

- ☑ Initiation/Concept
- ☑ Planning/Development
- ☑ Execution/Implementation
- ☑ Finalisation/Commissioning/Handover

What is the typical duration of the primary project(s) that you work on? *

6 Months to 1 year ▾

What is the typical value (in INR) of the projects you work on or manage, in your primary project role? *

> 50,000,000 ▾

What Is Important for a successful project? *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Project Estimate/Planning (Costing & Schedule)	○	○	◉	○	○
Defined Customer Requirement	○	◉	○	○	○
Skill & Resource Planning	○	○	◉	○	○
Effective communication Between Project Team and Customer	○	○	◉	○	○
Project briefing to Project team	○	○	◉	○	○
Project Risk management	○	◉	○	○	○
Team Management	○	◉	○	○	○
Execution Plan	○	○	◉	○	○
Contingency plan	○	◉	○	○	○

If anything apart from above needed for a successful project, Please mention here

Factors for Project Failure, Delayed, or cost overrun. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Planning(Budget & Schedule)	○	○	◉	○	○
Project Team(PM, Execution team or PMO)	○	○	◉	○	○
Communication between PMO and Execution Team	○	◉	○	○	○
Execution Plan	○	○	◉	○	○
Material Planning	○	◉	○	○	○
Change in Customer Requirement	◉	○	○	○	○
Delay Customer Authorization	○	◉	○	○	○
Customer hindrances	○	◉	○	○	○
Contingency Plan	○	○	◉	○	○

If anything apart from above needed for Project Failure, Delayed, or cost overrun., Please mention here

Project Efficiency. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Project Completed on time or earlier.	☐	☐	☐	☐	☑
Project completed within or below Budget.	☐	☐	☐	☑	☐
Meet Customer Satisfaction.	☐	☐	☐	☐	☑
Project outcome will contribute to future project.	☐	☐	☐	☐	☑
Project Create a benchmark for competitors	☐	☐	☐	☐	☑

Thanks

QUESTIONNAIRE FOR PROJECT MANAGEMENT

This form consist some Questions related to Project Management.
Kindly Answer all Question as per your knowledge and Experience.

Personal Introduction

Name

Your age in years

Choose

Current Organisation

Current Designation

Total-experience in Years *

20

EDUCATION: Please indicate the highest level of education obtained *

- ○ Undergraduate
- ◉ Graduation Degree
- ○ Master's Certification or Equivalent

PROJECT MANAGEMENT EXPERIENCE

Project management experience you have by recording the total number of years you have been engaged at each level. *

Please Choose "Not Applicable" to not relevant for proceed further.

	1-3	4-6	7-9	10-12	13-15	More than 16 Years	Not Applicable
Team Member	○	◉	○	○	○	○	○
Project Manager	○	◉	○	○	○	○	○
Program Manager/ Director	○	◉	○	○	○	○	○
Other Role in Project Management	◉	○	○	○	○	○	○

What is your current primary role?

Program Manager/ Director ▾

Is the organization you work for in the public or private sector? *

- [ ] Public Sector
- [x] Private Sector
- [ ] Both

Do the projects you usually work on involve more than one geographic region? Base your selection on one of the following categories. *

- [ ] One city/region
- [x] National
- [ ] International

Which category best describes the project management activities/environment in which you work? *

Other

What is your organization's primary business activity? *

Engineering & Construction

Which of the categories listed below best describes the level of maturity of the project management systems in your operational area? *

Repeatable Level - project management system and plans are based on previous experience.

Project Execution Experience

Please answer below questions as per your past Experience.

How many projects do you typically work on, or manage, at one time? *

- ○ 1
- ○ 1-2
- ○ 2-4
- ◉ More than 4

Indicate the phase(s) of a project during which you are most often involved. *

- ☐ Initiation/Concept
- ☐ Planning/Development
- ☑ Execution/Implementation
- ☐ Finalisation/Commissioning/Handover

What is the typical duration of the primary project(s) that you work on? *

3-6 Months ▾

What is the typical value (in INR) of the projects you work on or manage, in your primary project role? *

5.000,001 - 10,000,000 ▾

What Is Important for a successful project? *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Project Estimate/Planning (Costing & Schedule)	○	○	○	○	◉
Defined Customer Requirement	○	○	○	○	◉
Skill & Resource Planning	○	○	○	◉	○
Effective communication Between Project Team and Customer	○	○	○	◉	○
Project briefing to Project team	○	○	○	○	◉
Project Risk management	○	○	○	◉	○
Team Management	○	○	○	○	◉
Execution Plan	○	○	○	○	◉
Contingency plan	○	○	◉	○	○

If anything apart from above needed for a successful project, Please mention here

Factors for Project Failure, Delayed, or cost overrun. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Planning(Budget & Schedule)	○	○	○	○	◉
Project Team(PM, Execution team or PMO)	○	○	○	◉	○
Communication between PMO and Execution Team	○	○	◉	○	○
Execution Plan	○	○	○	◉	○
Material Planning	○	○	○	○	◉
Change in Customer Requirement	○	○	○	○	◉
Delay Customer Authorization	○	○	○	◉	○
Customer hindrances	○	○	◉	○	○
Contingency Plan	○	○	◉	○	○

If anything apart from above needed for Project Failure, Delayed, or cost overrun., Please mention here

Project Efficiency. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Project Completed on time or earlier.	☐	☐	☐	☐	☑
Project completed within or below Budget.	☐	☑	☐	☐	☐
Meet Customer Satisfaction.	☐	☑	☐	☐	☐
Project outcome will contribute to future project.	☐	☐	☑	☐	☐
Project Create a benchmark for competitors	☐	☑	☐	☐	☐

Thanks

QUESTIONNAIRE FOR PROJECT MANAGEMENT

This form consist some Questions related to Project Management.
Kindly Answer all Question as per your knowledge and Experience.

Personal Introduction

Name

Subhash Choudhary

Your age in years

40-50

Current Organisation

BKB Transport Pvt Ltd.

Current Designation

Project Head

Total-experience in Years *

20

EDUCATION: Please indicate the highest level of education obtained *

- ○ Undergraduate
- ○ Graduation Degree
- ◉ Master's Certification or Equivalent

PROJECT MANAGEMENT EXPERIENCE

Project management experience you have by recording the total number of years you have been engaged at each level. *

Please Choose "Not Applicable" to not relevant for proceed further.

	1-3	4-6	7-9	10-12	13-15	More than 16 Years	Not Applicable
Team Member	◉	○	○	○	○	○	○
Project Manager	○	○	○	◉	○	○	○
Program Manager/ Director	○	○	○	◉	○	○	○
Other Role in Project Management	○	○	○	◉	○	○	○

What is your current primary role?

Project Manager ▾

Is the organization you work for in the public or private sector? *

- [ ] Public Sector
- [ ] Private Sector
- [x] Both

Do the projects you usually work on involve more than one geographic region? Base your selection on one of the following categories. *

- [ ] One city/region
- [x] National
- [ ] International

Which category best describes the project management activities/environment in which you work? *

Supplier

What is your organization's primary business activity? *

Industrial Processes

Which of the categories listed below best describes the level of maturity of the project management systems in your operational area? *

Optimising Level - the entire organization is focused on continuous improvement.

Project Execution Experience

Please answer below questions as per your past Experience.

How many projects do you typically work on, or manage, at one time? *

- ○ 1
- ○ 1-2
- ◉ 2-4
- ○ More than 4

Indicate the phase(s) of a project during which you are most often involved. *

- ☑ Initiation/Concept
- ☑ Planning/Development
- ☑ Execution/Implementation
- ☑ Finalisation/Commissioning/Handover

What is the typical duration of the primary project(s) that you work on? *

>2 years ▾

What is the typical value (in INR) of the projects you work on or manage, in your primary project role? *

> 50,000,000 ▾

What Is Important for a successful project? *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Project Estimate/Planning (Costing & Schedule)	○	○	○	○	◉
Defined Customer Requirement	○	○	○	○	◉
Skill & Resource Planning	○	○	○	○	◉
Effective communication Between Project Team and Customer	○	○	○	○	◉
Project briefing to Project team	○	○	○	○	◉
Project Risk management	○	○	○	○	◉
Team Management	○	○	○	○	◉
Execution Plan	○	○	○	○	◉
Contingency plan	○	○	○	○	◉

If anything apart from above needed for a successful project, Please mention here

Factors for Project Failure, Delayed, or cost overrun. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Initial Planning(Budget & Schedule)	○	○	○	○	◉
Project Team(PM, Execution team or PMO)	○	○	○	○	◉
Communication between PMO and Execution Team	○	○	○	○	◉
Execution Plan	○	○	○	◉	○
Material Planning	○	○	○	○	◉
Change in Customer Requirement	○	○	○	○	◉
Delay Customer Authorization	○	○	○	○	◉
Customer hindrances	○	○	○	○	◉
Contingency Plan	○	○	○	○	◉

If anything apart from above needed for Project Failure, Delayed, or cost overrun., Please mention here

Project Efficiency. *

please set priority, where 1= least important ....5= most Important

	1	2	3	4	5
Project Completed on time or earlier.	☐	☐	☐	☑	☐
Project completed within or below Budget.	☐	☐	☐	☑	☐
Meet Customer Satisfaction.	☐	☐	☐	☑	☐
Project outcome will contribute to future project.	☐	☐	☐	☑	☐
Project Create a benchmark for competitors	☐	☐	☐	☑	☐

Thanks