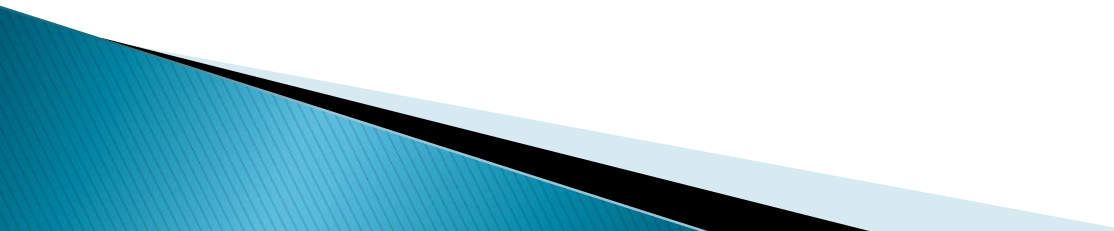


PROJECT MANAGEMENT

- ▶ What is PROJECT ?
 - ▶ How it is different from operations or program ?
 - ▶ What is project manager ?
 - ▶ What are roles of project manager ?
 - ▶ What are different types or organisational structures ?
 - ▶ How do different organizational structure change role and power of a project manager ?
- 

▶ According to webster's dictionary :

“Project is a planned piece of work that has a specific purpose and that generally required a long period of time”.

▶ According to oxford dictionary :

“A project is an individual or collaborative enterprise that is carefully planned to achieve a particular aim”.

“Project is a piece of research work undertaken by a school or college student”.

▶ According to PMI (project management institute) –


(PMBOK guide, Project management book of knowledge) :

“A project is a temporary endeavour undertaken to create a unique product, service or result. (most acceptable and undisputed definition)”.


IMPORTANT ASPECTS OF PROJECT

- ▶ Definite start date
 - ▶ Definite finish date
 - ▶ Specific goals and conditions
 - ▶ Defined responsibilities
 - ▶ Budget
 - ▶ Planning
 - ▶ Parties involved
- 

Characteristics/Features of Projects

- ▶ Change
 - ▶ Temporary
 - ▶ Unique
 - ▶ Life Cycle
 - ▶ Defined Objective/goal
 - ▶ Multi talented/skilled staff
 - ▶ Co-ordination
 - ▶ Made to order
 - ▶ Risk and Uncertainty
- 

Types of Projects

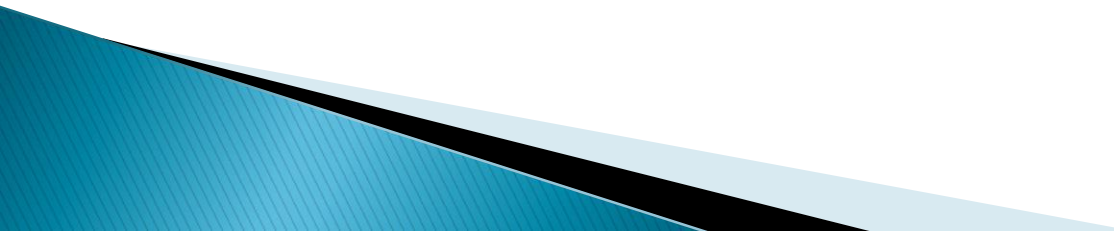
- ▶ Personal Project
 - ▶ Business/Organisational Project
 - ▶ National Projects
 - ▶ Global Projects
 - ▶ Based on Completion Time
 - ▶ Based on Value of Project
 - ▶ Based on Speed of Execution
 - ▶ Based on Ownership
- 

Projects	Operations
A project is a temporary endeavour undertaken to create a unique product, service or result.	Operations are the execution of activities that produce same output, or provide a repetitive service.
Have fixed budget	Have to earn profit in order to run business
Projects are one time effort executed to start a unique business objective and terminated when it is achieved.	Operations produce same result and it is ongoing process.
Project may contain a number of unknown and unpredictable elements.	Predictable and repeatable.
Projects continuous evaluate risk	Operations elements are usually designed to minimize or eliminate risks
Require wide variety of risks.	Requires limited risks
Use special purpose equipments for short duration	It uses equipments continuously.
It may have involvement of many outside agencies	It mainly requires outside agencies as supplier or buyers.

STAKE HOLDERS

- ▶ A person or a group of individuals or organization, who is positively or negatively impacted by the project and or anyone who can exert influence over the project's objectives and results.
- ▶ A project is successful when it achieve its goal and full fills the expectations of stake holder.
 - **Project manager**
 - **Sponsor**
 - **User/Customer**
 - **Sellers or Business Partners**
 - **Project Team**
 - **Departmental Managers**
 - **Board of Directors**
 - **Project Management office**

CATEGORIES OF STAKE HOLDERS

- ▶ Internal Stakeholders
 - ▶ External Stakeholders
 - ▶ Positive Stakeholders
 - ▶ Negative Stakeholders
- 


Project Constraints

PMBOK has classified the constraints into 6 major groups.

- ▶ Scope
- ▶ Quality
- ▶ Schedule
- ▶ Budget
- ▶ Resources
- ▶ Risk

There can be hundreds of constraints for the project, but PMBOK has classified in six groups.



- ▶ Why Project management ?
 - ▶ Project management team has to assess the situation, balance the demands, and maintain good communication with stakeholders in order to deliver a successful project.
 - ▶ **Two thoughts:**
 - ▶ One group of companies suggest that due to project management they require less development times, lower cost i.e. higher profit margins, better quality and reliability, sharper orientation towards goal, better interdepartmental coordination or higher work moral.
 - ▶ Where as on other side a few companies consider that project management causes more organisational complexity, higher cost of manpower. More management difficulties and low personal utilization.
- 

Project Management

It is a methodological approach to planning and guiding project processes from start to finish.

According to **PMBOK:**

“Project management is application of knowledge, skill, tools and techniques to project activities to meet project requirements”



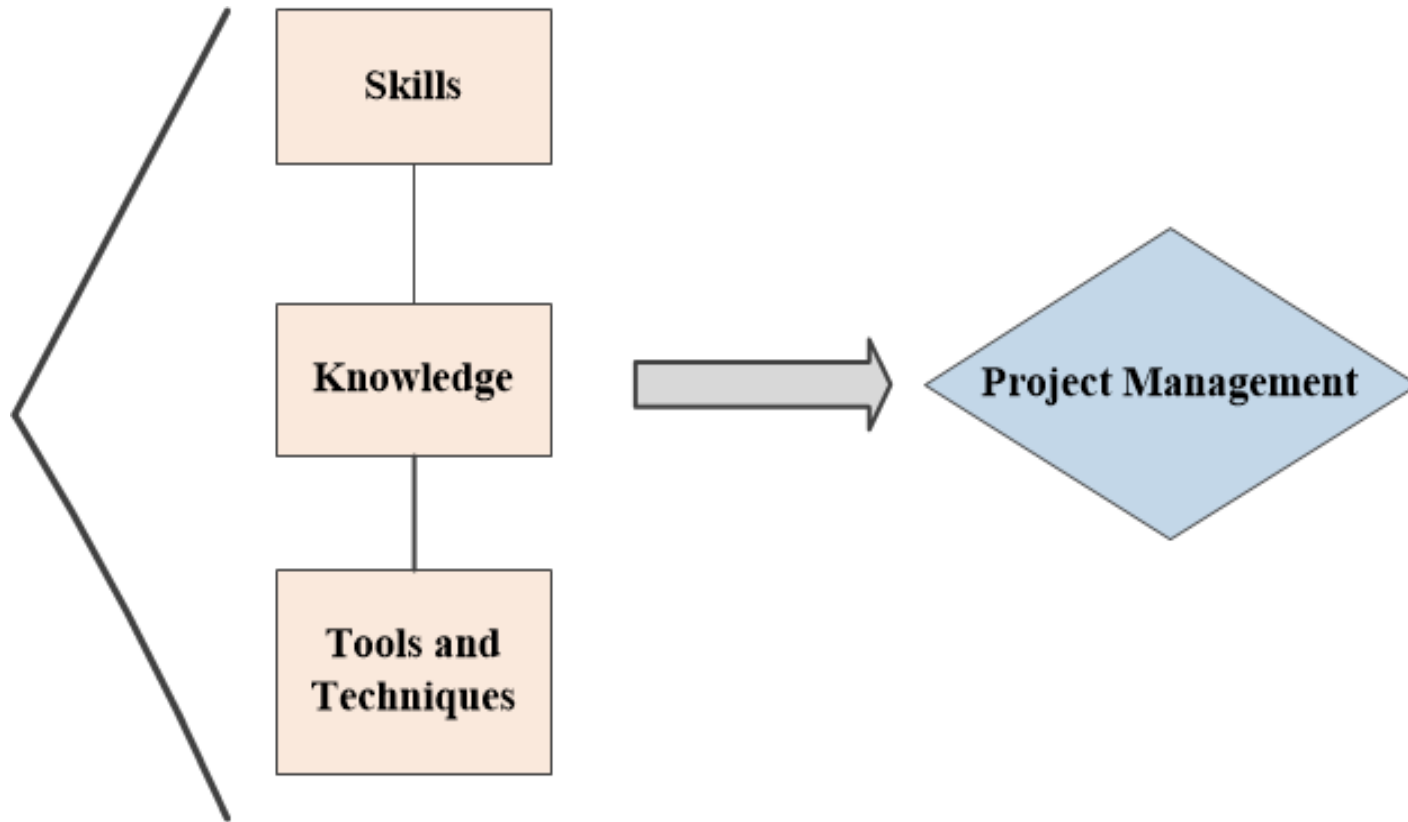
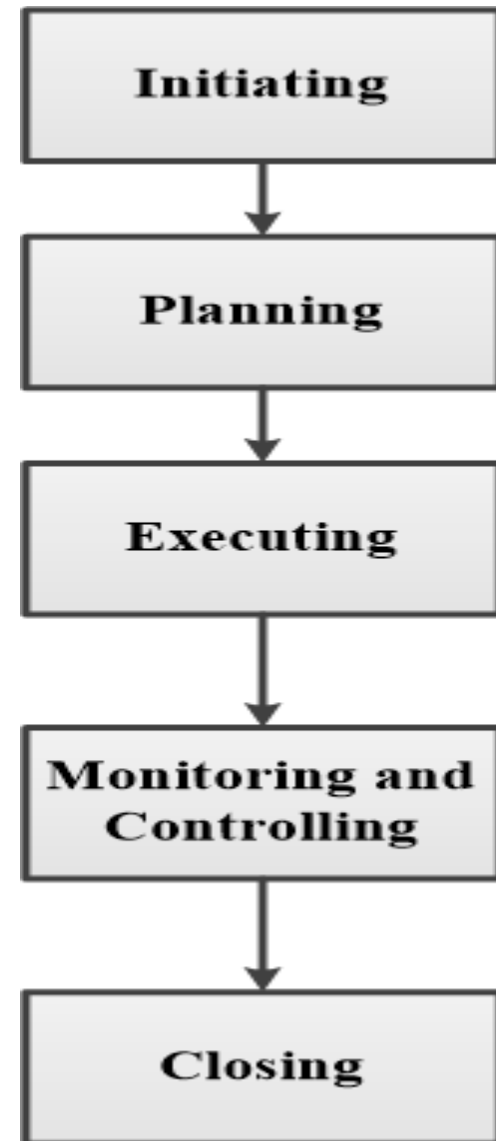


Fig. Major Constituents of Project Management

- ▶ According to **PMBOK**, Project management is done through appropriate applications and integration of 47 logically grouped process.
- ▶ Five significant process are:
- ▶ Initiating
- ▶ Planning
- ▶ Executing
- ▶ Monitoring and Controlling
- ▶ Closing



Objectives of Project Management

- ▶ Scope
- ▶ Performance
- ▶ Time
- ▶ Cost

(or)

a) “SMART approach” (Schedule, Measurable, Attainable, Realistic, Time/scope)

b) 7-s of project management.

Strategy – High level requirement

Structures – organizational arrangement

System – Method for work to be designed, monitor

Staff – Selection, requirement

Skill – managerial or technical tools availability

Style/Culture – way of working

Share value – outcome of the project

Function of Project management

According to IS-code following are the functions of project management.

1. Define **work or scope** of the project.
2. Decide how the activities of project are to be **executed**.
3. Develop a suitable **organizational structure**.
4. Develop implementation **plan**, procedure, standards and metrics. Involve all the participants and ensure all the project components (or elements) are inter-related, integrated and co-ordinated.
5. Finalize **contracting plan** and policy, prepare contract document and decide contractor's responsibility.
6. Prepare time schedules, cost (or budget) and identify milestone.
7. Development **monitoring and control**, information and reporting system, and ensure their desired operation.
8. Establish healthy communication and coordination among projects.
9. Creating organizational asset in terms of documentation and templates of project management policies, procedure and standards.

Project Manager

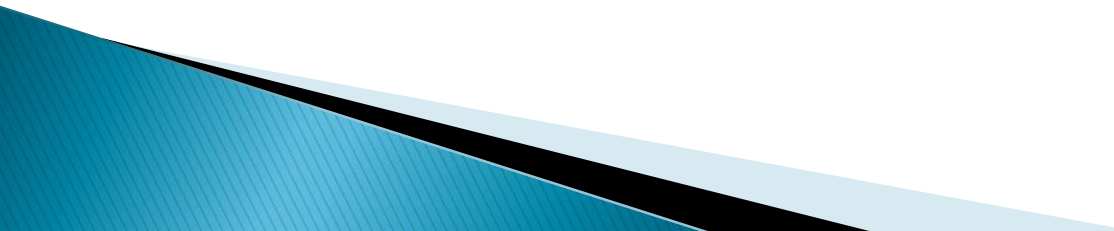
A project manager is an individual with authority, accountability and responsibility for managing a project to achieve specific purpose.

Responsibility of Project Manager

- To parent organization
- To Project and Client
- To Project Team

Characteristics of Good project manager

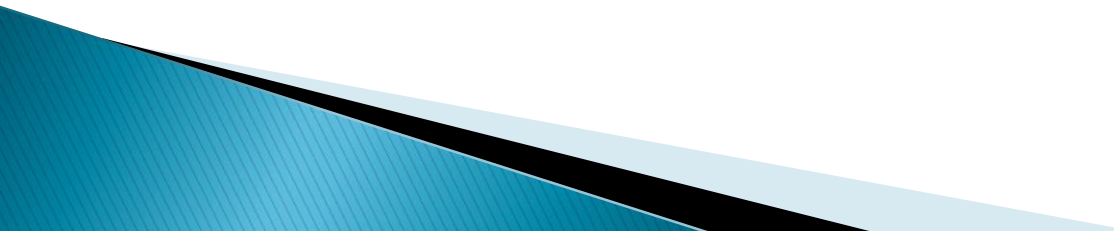
- ▶ Good technical skills
- ▶ Leadership skills
- ▶ Resource management

- ▶ Human resource management
 - ▶ Communication skill
 - ▶ Negotiation and Influencing skill
 - ▶ Conflict management skill
 - ▶ Marketing, contracting, customer relationship skill
 - ▶ Budgeting and Costing skill
 - ▶ Time management skill
 - ▶ Team building
 - ▶ Motivation skills
 - ▶ Decision making skills
 - ▶ Political and cultural awareness
 - ▶ Trust Building
- 

Role of Project manager

- ▶ Formulation of objectives and policies for the project and operationlize them properly.
- ▶ Ensure availability and best utilization of resources.
- ▶ Acquiring and motivating personnel (Managing HR).
- ▶ Making project goal trade off and maintaining a balance outlook.
- ▶ Preparation and approval of all operational plan, procedures and project plans.
- ▶ Delegation of duties and responsibility to project staff.
- ▶ Monitor and control- cost, progress, performance and quality.
- ▶ Ensure safety standards and legal requirements.
- ▶ Serve as prime point of contact for project.
- ▶ Ensure establishment and operation of communication, information and reporting system.
- ▶ Analysis of potential risk and their mitigation.

Project life Cycle

- ▶ **Project Management Life Cycle** is a series of essential activities for accomplishing project objectives or targets. It is a framework that includes the stages to transform an idea into reality.
 - ▶ Projects may have different dimensions and difficulty levels, but they can be mapped to the Project Management life cycle structure, whatever the project's size is.
- 

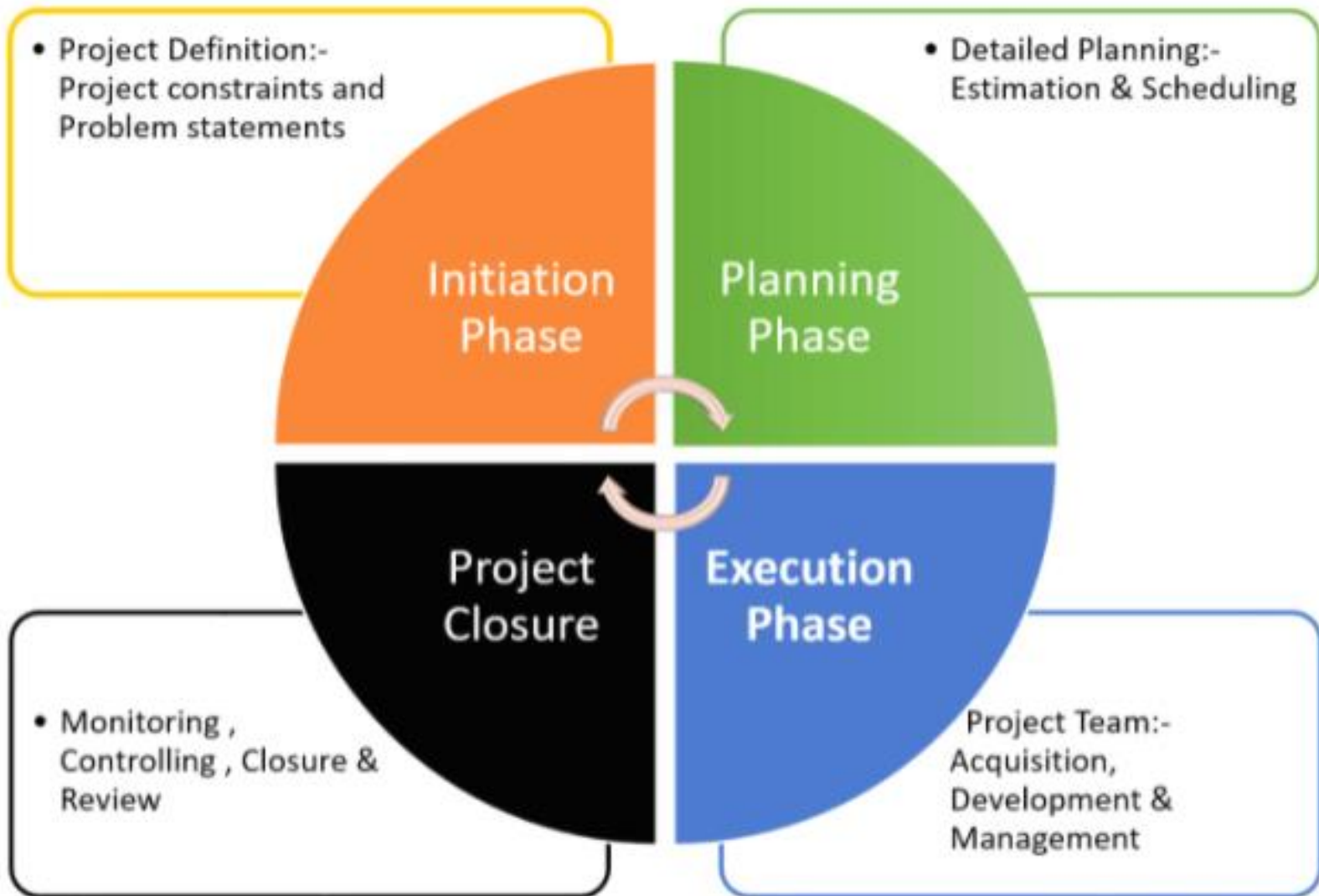
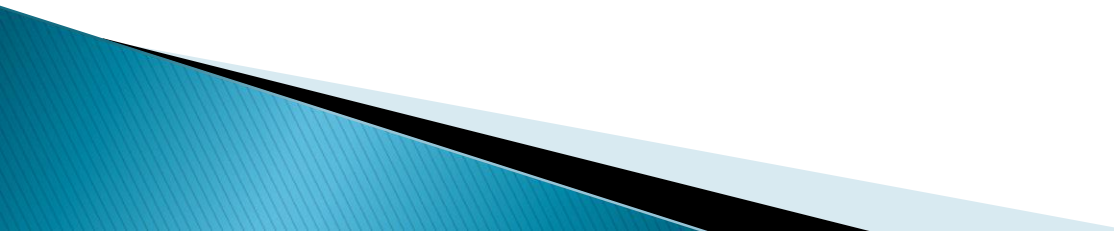


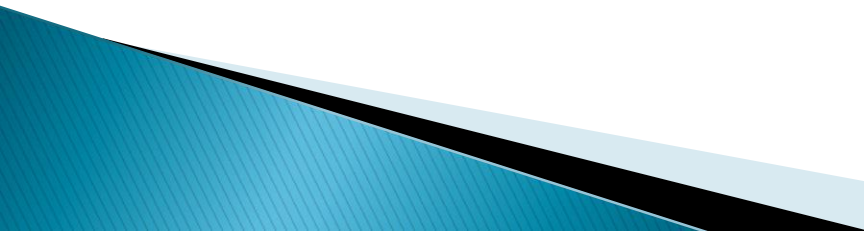
Fig. Phases of Project Management Life Cycle

Phases of Project life cycle

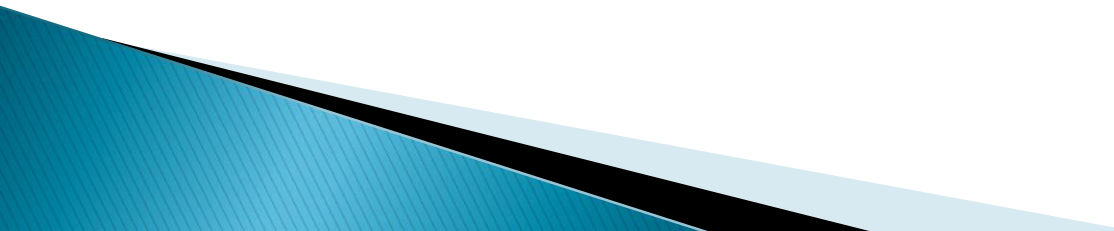
Initiation Phase

- ▶ Objective or need is identified.
 - ▶ Feasibility study
 - ▶ DPR (Detailed project report) approved
 - ▶ Project charter
 - ▶ Approval from project manager is sought.
- 

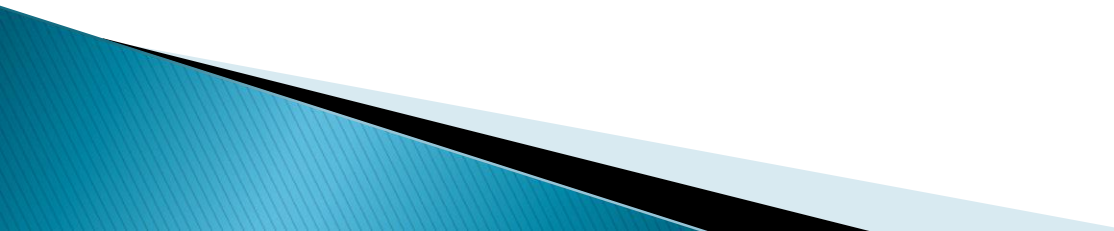
Planning Phase

- ▶ Planning Phase
 - ▶ Detailed project plan
 - ▶ Identification of the work i.e. scope
 - ▶ Resource requirement
 - ▶ Strategy
 - ▶ Prepare schedule and estimated cost
 - ▶ Risk or threat analysis
 - ▶ Quality plan (target, assurance and control)
 - ▶ Ready to be executed
- 

Execution Phase

- ▶ Plan is implemented
 - ▶ Work is performed
 - ▶ Continuous project monitoring
 - ▶ Necessary action, if any deviation
 - ▶ Reviewed for quality
 - ▶ Check whether ready for acceptance to customer ?
- 

Closing Phase

- ▶ Releasing final output to customer
 - ▶ Handing over project documents to sponsor or organization terminating supplier contracts
 - ▶ Communication the closure of project to entire stakeholders
 - ▶ Releasing project resources
 - ▶ Lesson learned
- 

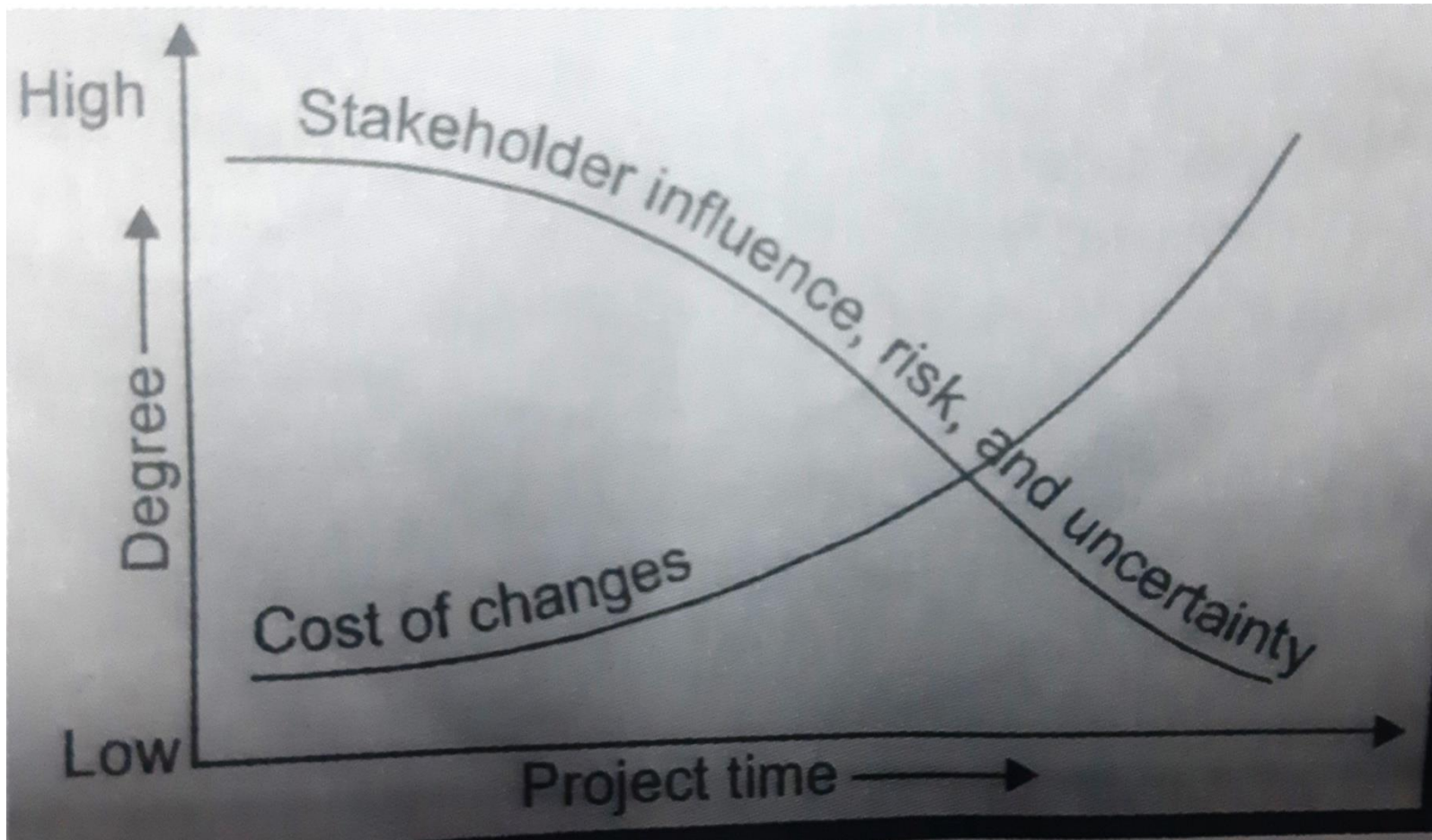


Fig. Project life cycle_1

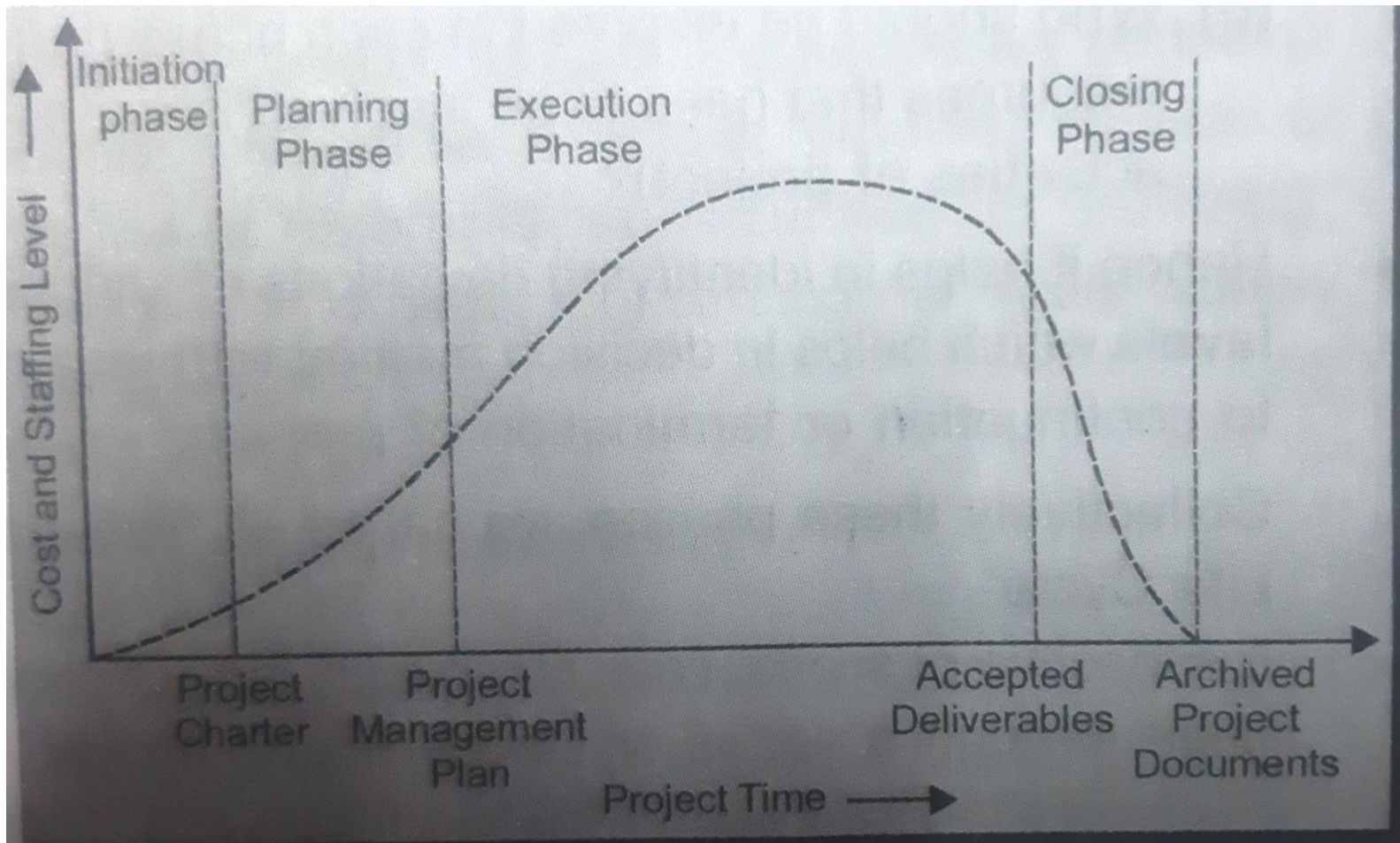


Fig. Project life cycle_2

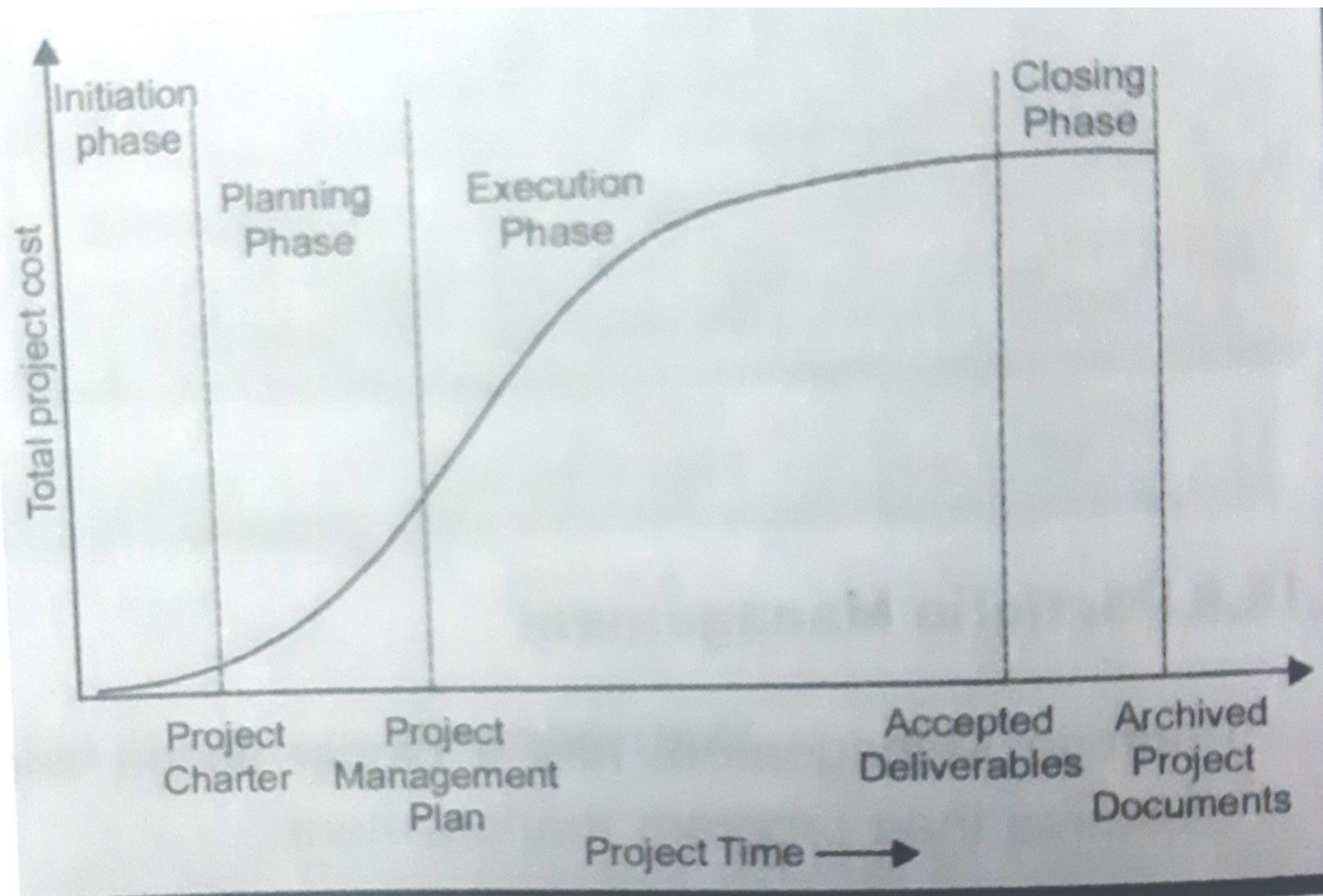


Fig. Project life cycle_3

Phase to phase relationship

- Sequential Relationship
- Overlapping Relationship

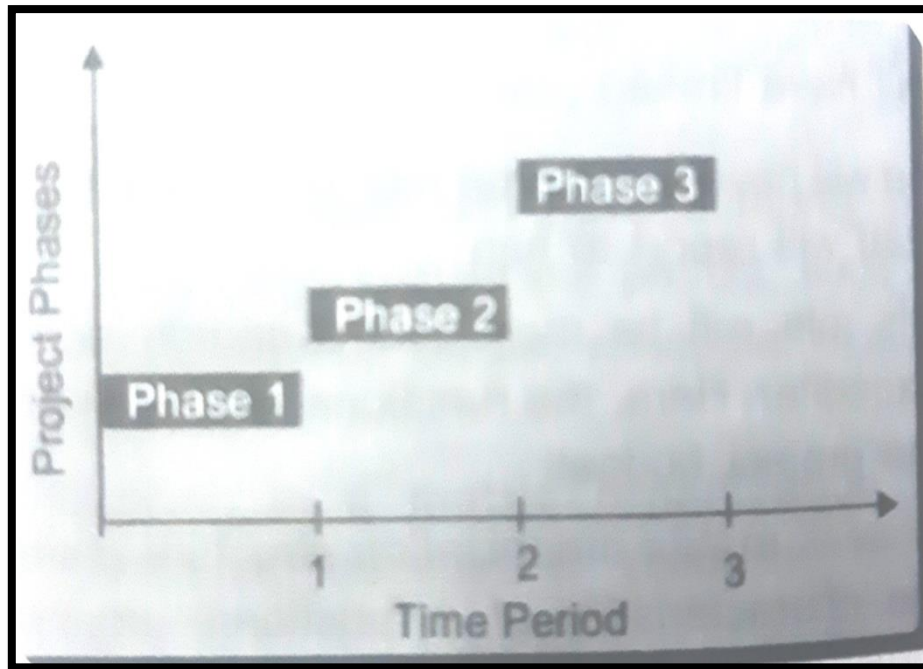


Fig. Sequential Relationship

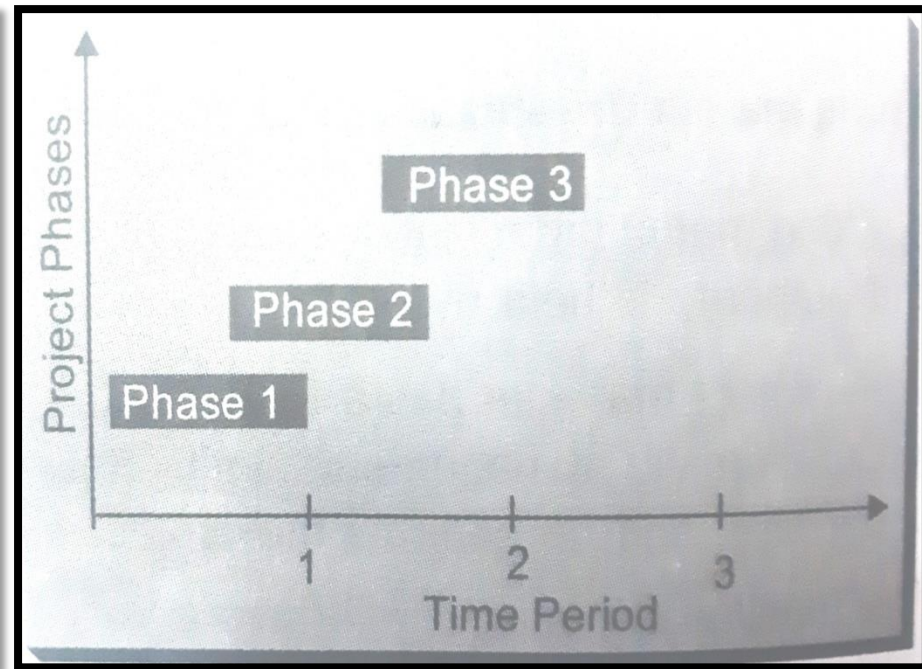
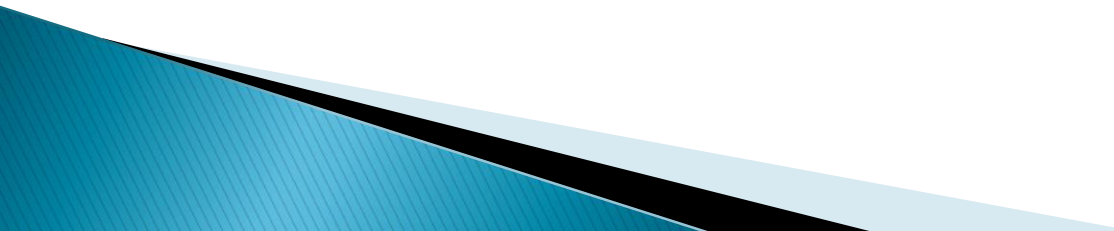
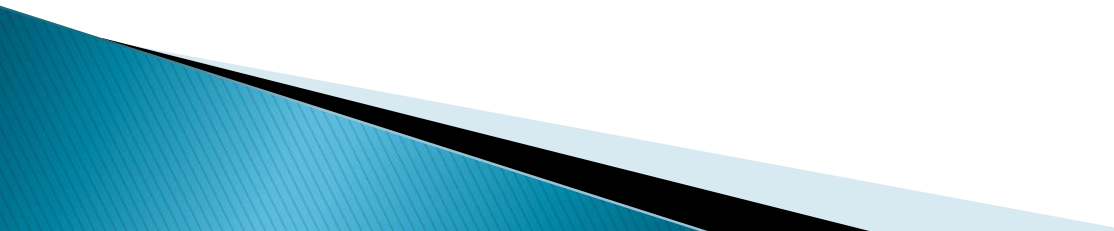
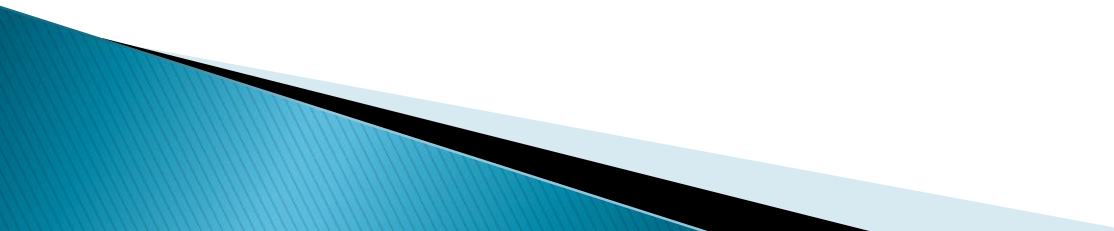


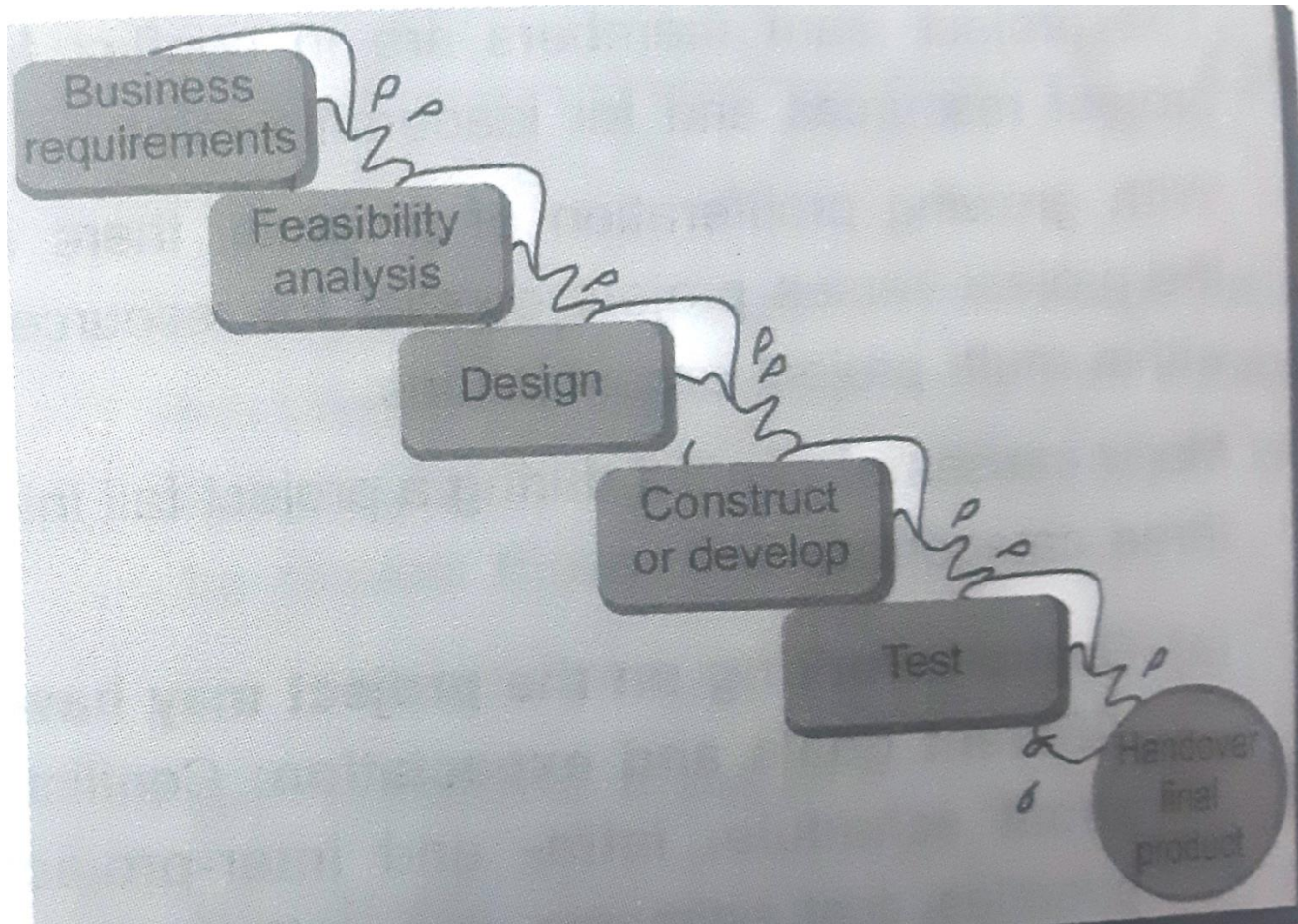
Fig. Overlapping Relationship

Types of Project life Cycle

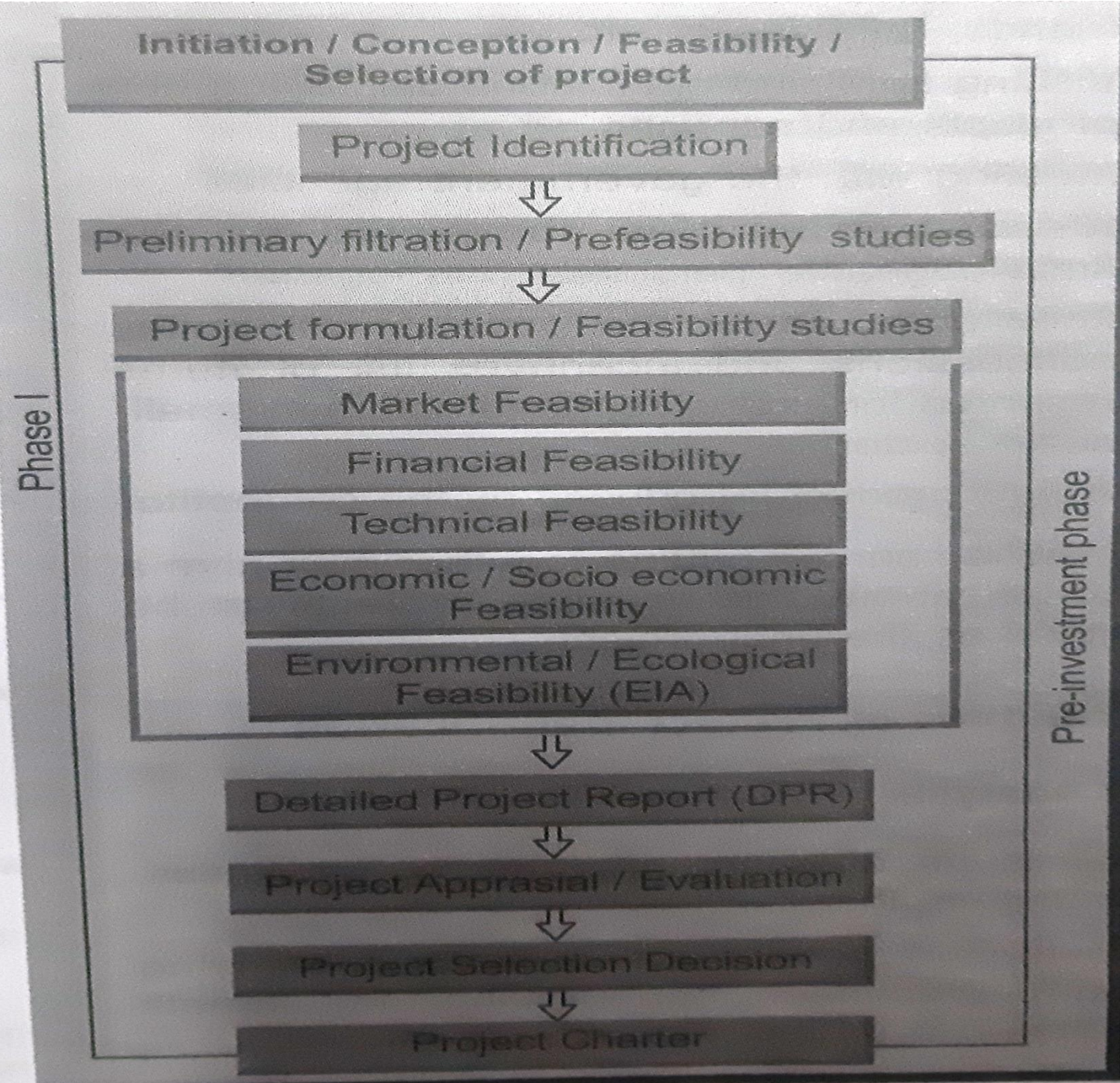
- ▶ According to PMBOK, there are three types of Project life cycle:
 - ❖ **Predictive Life cycle**
 - ▶ Also known as plan driven, and water fall life cycle.
 - ▶ Requirements are defined early and not expected to change.
 - ▶ Work in each phase is different from subsequent or from previous phases, hence each phase acts as sub project.
 - ▶ Skill set required for each phase is different.
- 

- ❖ **Iterative and incremental life cycle**
 - ❖ **Phases are also known as iterations as they are intentionally repeated for one or more project activities as the project team's understanding of the product increases.**
 - ❖ **In this cycle, scope is not defined ahead of time at a detailed level, but only for the first iteration or phase of the project. Once a phase is completed, the detailed scope for the next phase is worked out, and so on.**
 - ❖ **End result is delivered at the end of each phase or iteration.**
 - ❖ **This life cycle is used for the projects where change in the scope is need to be managed.**
- 

- ▶ **Adaptive life cycle**
 - ▶ Also known as change driven or agile life cycle.
 - ▶ It is also iterative and incremental.
 - ▶ In this, project is split up into phases (or iterations) which can be either sequential or overlapping.
 - ▶ In this life cycle during an iteration, scope is divided into a set of requirements and work to be done to meet the requirements (also called as project backlog) is prioritized.
 - ▶ At the end of each iteration, work for the product is reviewed by the customer, and feedback from the customer is used to define the detailed scope for next iteration.
 - ▶ This life cycle is used for projects where rapid changes are expected and it is not possible to define scope in the start.
 - ▶ But in this life cycle iterations are very rapid (generally of duration 2 to 4 weeks) and are fixed in time and cost.
 - ▶ Adaptive life cycle is generally used in IT industry.
- 

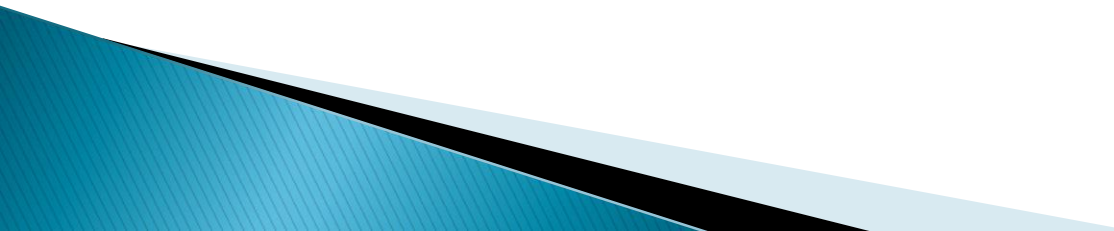


Project Initiation




Project Identification

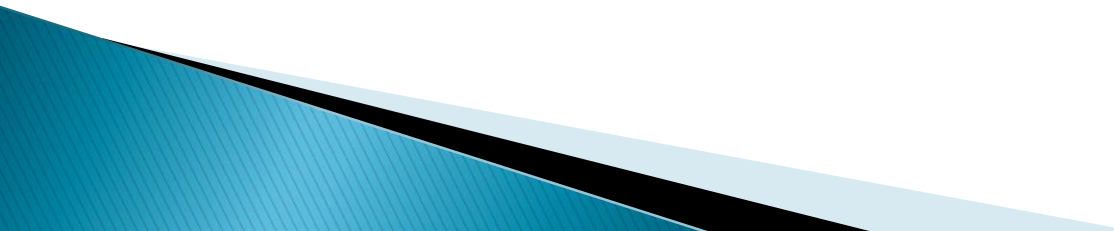
- ▶ Techniques of PI:

- a) SWOT analysis (Strength, weakness, Opportunities, Threat)
 - b) Brain Storming
- 

Pre-feasibility Studies

- ▶ Also called as prima facie analysis or screening of ideas or preliminary filtration.
 - ▶ Very crucial step as 99.2% projects are dropped during this step.
 - ▶ To mention this in a positive way, a big percentage of projects which cross the hurdle of prima facie study reaches its destination of implementation.
 - ▶ **Following details are looked for during project identification stage:**
 - ▶ Performance of existing industries
 - ▶ Price trend
 - ▶ Price difference between international and domestic prices
 - ▶ Government policies
 - ▶ Location aspects
 - ▶ Financial Position
- 

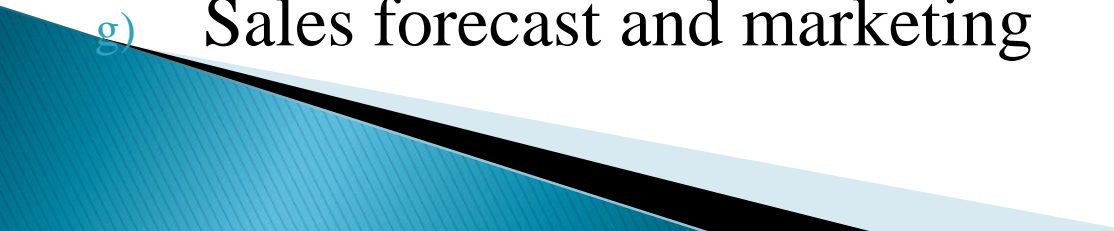
Project feasibility or Formulation studies

- ▶ Projects which have crossed the hurdle of project screening are studied in detail to have a look at the viability of a idea with an emphasis on identifying potential problems and attempting to answer one main question:
 - ▶ Will the idea work and should we proceed with it ?
 - ▶ Basically it is an study undertaken before the real work of a project starts (i.e. planning) to ascertain the likelihood of the project's success.
 - ▶ Various in-depth analysis done in this stage includes:
- 

- ▶ Market Feasibility
- ▶ Financial feasibility
- ▶ Technical feasibility
- ▶ Economic/Socio economic feasibility
- ▶ Environmental feasibility i.e. Environmental impact assessment

At the end of all these feasibility data are collected together in a document called Detailed project report (DPR)

Market Feasibility

- ▶ United Nations industrial development organization (UNIDO) has published in the “manual for the preparation of industrial feasibility studies” to help in the standardization of industrial feasibility study.
 - a) Project background and history
 - b) Demand and market study
 - c) Demand projection and forecasting technique
 - d) Export projections
 - e) Market penetration
 - f) Sensitivity analysis
 - g) Sales forecast and marketing
- 

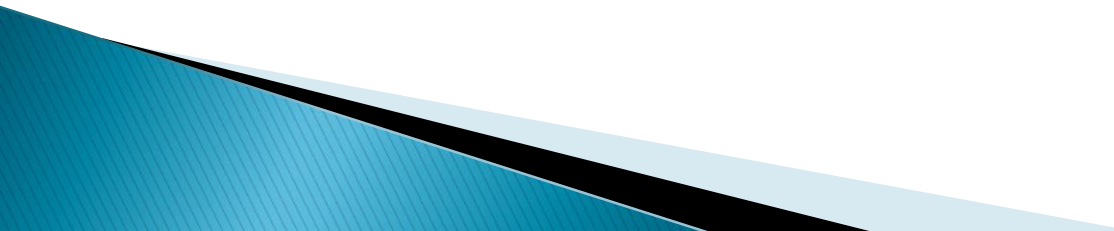
Financial feasibility

- ▶ It is an assessment of financial aspects of projects.
- ▶ During this we try to analyse start up capital required for project, what kind of capital sources are available for use, what kind of capital sources will be used, and kind of return expected from the project.
- ▶ A careful analysis during financial feasibility is important because a wrong decision in regard to investment of huge sum of money may prove fatal for the organization.
- ▶ Steps in financial feasibility are:
 - ▶ Estimation of cost project
 - ▶ Estimation of project cash flow
 - ▶ Estimation of estimated rate of return
 - ▶ Application of decision rule

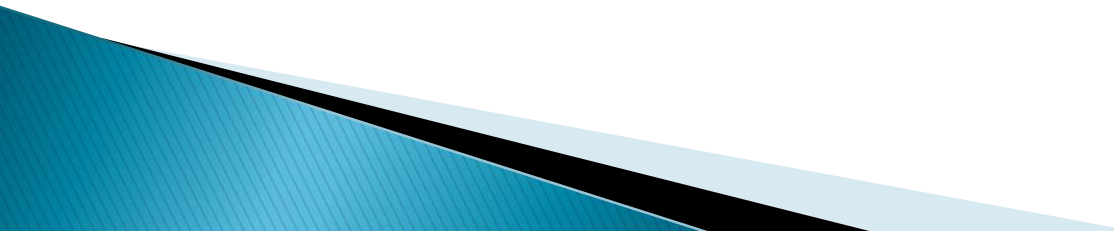
Technical feasibility

- ▶ It includes the selection of an appropriate technology, source for the selected technology (developed or transferred), capacity planning, location selection, raw material identification etc.
- ▶ While doing technical analysis following factors are to be considered.
 - ▶ 1. Location and site
 - ▶ 2. Capacity planning and cost capacity relationship
 - ▶ 3. Technology
 - ▶ 4. Design, Layout and plant and machinery
 - ▶ 5. Inputs

Socio-Economic feasibility

- ▶ Socio economic feasibility studies are conducted to determine the degree to which the design or location of project is economically or socially justified.
 - ▶ Every business has the primary purpose of obtaining profit from their goal.
 - ▶ But they cannot go away with the fact that they operate in a social environment.
 - ▶ In this we consider:
 - ▶ Social Cost
 - ▶ Benefits of the projects
- 

Environmental/Ecological feasibility

- ▶ It is an study of comparative process that looks at all potential solution, then evaluates them against specific criteria considering both human and environmental health factors, to ultimately find the best choice.
 - ▶ Environmental feasibility is conducted when the execution of project is planned considering the conditions an the environmental effects on site, the regulation, restriction and opportunities for a determined project and site.
- 

Environmental Impact Assessment

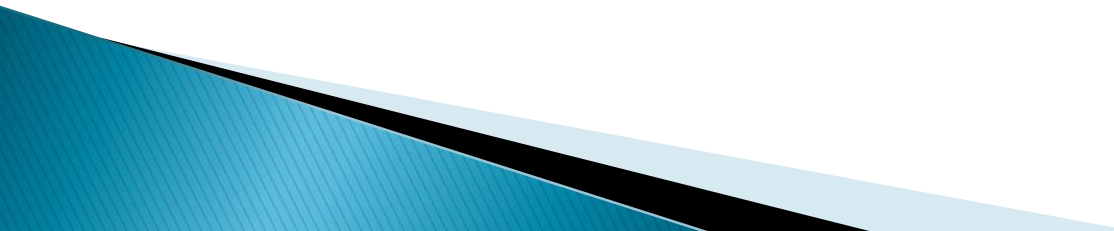
- ▶ EIA is management tool or process used for evaluating the likely impacts of a proposed project or development taking into account socio-economic, cultural and human-health impacts both beneficial and adverse.
- ▶ **Main impacts of EIA**
 - ▶ A) Appraisal of prevailing environmental conditions.
 - ▶ B) Appraisal of production methods- both existing and propose
 - ▶ C) Methodologies related to environmental impact assessment
 - ▶ D) Possible impact of projects on environment both existing and proposed.
 - ▶ E) Development of the technique of conservation of environment by modifying and improving the existing production technology.

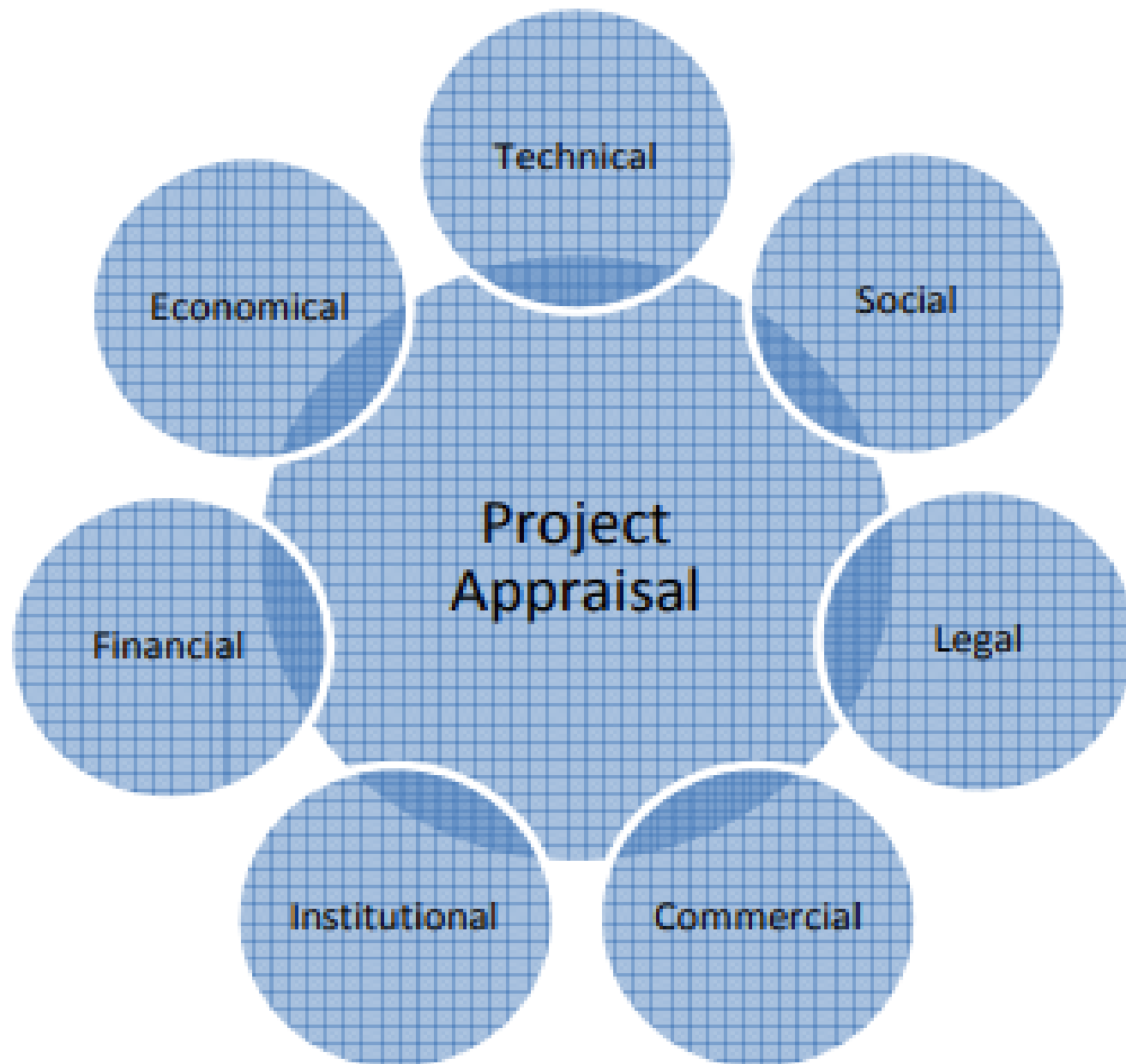
Project Appraisal/Evaluation

- ▶ Project appraisal is the evaluation of the overall ability of the feasible project to succeed.
- ▶ After preparation of the DPR , project appraisal is done for overall assessment of the relevancy, feasibility and sustainability of a project prior to making the decision whether to undertake it or not i.e. to determine viability of project.
- ▶ Aim of the project appraisal is to consider and compare the possible feasible project an select the best one that meets the objectives.
- ▶ All feasibility studies serve the groundwork for appraisal.
- ▶ All the aspects covered in feasibility studies are re-examined during project appraisal.

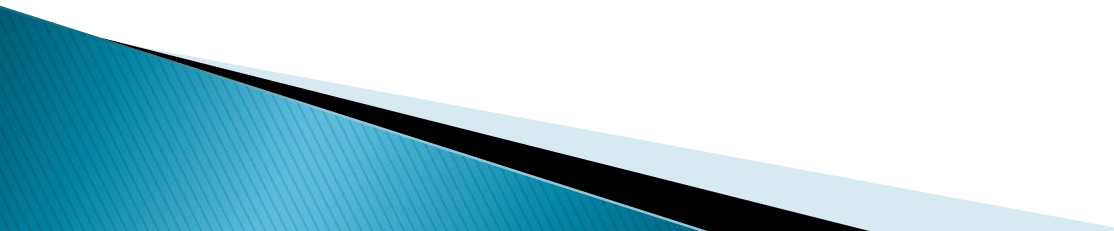
- ▶ Various kind of Project appraisals are as mentioned below:
- ▶ Technical appraisal
- ▶ Financial appraisal
- ▶ Market appraisal
- ▶ Social/Economic appraisal
- ▶ Environmental appraisal


Project appraisal is a process of detailed examination of several aspects of a given project before resources are committed.





Technical appraisal

- ▶ Technical feasibility analysis is the systematic gathering and analysis of the data pertaining to the technical inputs required and formation of conclusion there from.
 - ▶ The availability of the raw materials, equipment, hard/software, power, sanitary and sewerage services, transportation facility, skilled man power, engineering facilities, maintenance, local people etc., depending on the type of project are coming under technical analysis.
- 

- ▶ – Physical scale
 - ▶ - Technology used & Type of equipments & Suitability conditions
 - ▶ - How realistic is the implementation schedule
 - ▶ - Labour intensive method or others
 - ▶ - Cost estimates of Engineering Data
 - ▶ - Escalation are taken care of or not
 - ▶ - Procurement arrangement
 - ▶ - Cost of operation & Maintenance
 - ▶ - Necessary raw material & Inputs
 - ▶ - Potential impact of project on human & physical Environment
- 

Financial Appraisal

- ▶ To determine whether the financial costs and returns are properly estimated and whether the project is financially viable. Following minimum details are determined in the financial appraisal;
- ▶ 1. Total Cost
- ▶ 2. O & M Expenditure
- ▶ 3. Opportunity costs
- ▶ 4. Other costs
- ▶ 5. Returns on Investment over project life
- ▶ 6. NPV
- ▶ 7. CBR
- ▶ 8. IRR

Environmental Appraisal

- ▶ To see any detrimental environmental impacts and how to minimise the impacts. Environmental appraisal concerns with the impact of environment on the project. The factors include the water, air, land, sound, geographical location etc.
- ▶ It is an study of comparative process that looks at all potential solution, then evaluates them against specific criteria considering both human and environmental health factors, to ultimately find the best choice.
- ▶ Environmental feasibility is conducted when the execution of project is planned considering the conditions an the environmental effects on site, the regulation, restriction and opportunities for a determined project and site.

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Main steps for conducting EIA:

- ▶ Identification of project
 - ▶ Screening
 - ▶ Scoping and considering the alternatives
 - ▶ Impact prediction
 - ▶ Mitigation
 - ▶ Reporting to decision making body
 - ▶ Public hearing
 - ▶ Review (EIA report)
 - ▶ Decision making
 - ▶ Post project monitoring and environmental clearance.
- 