

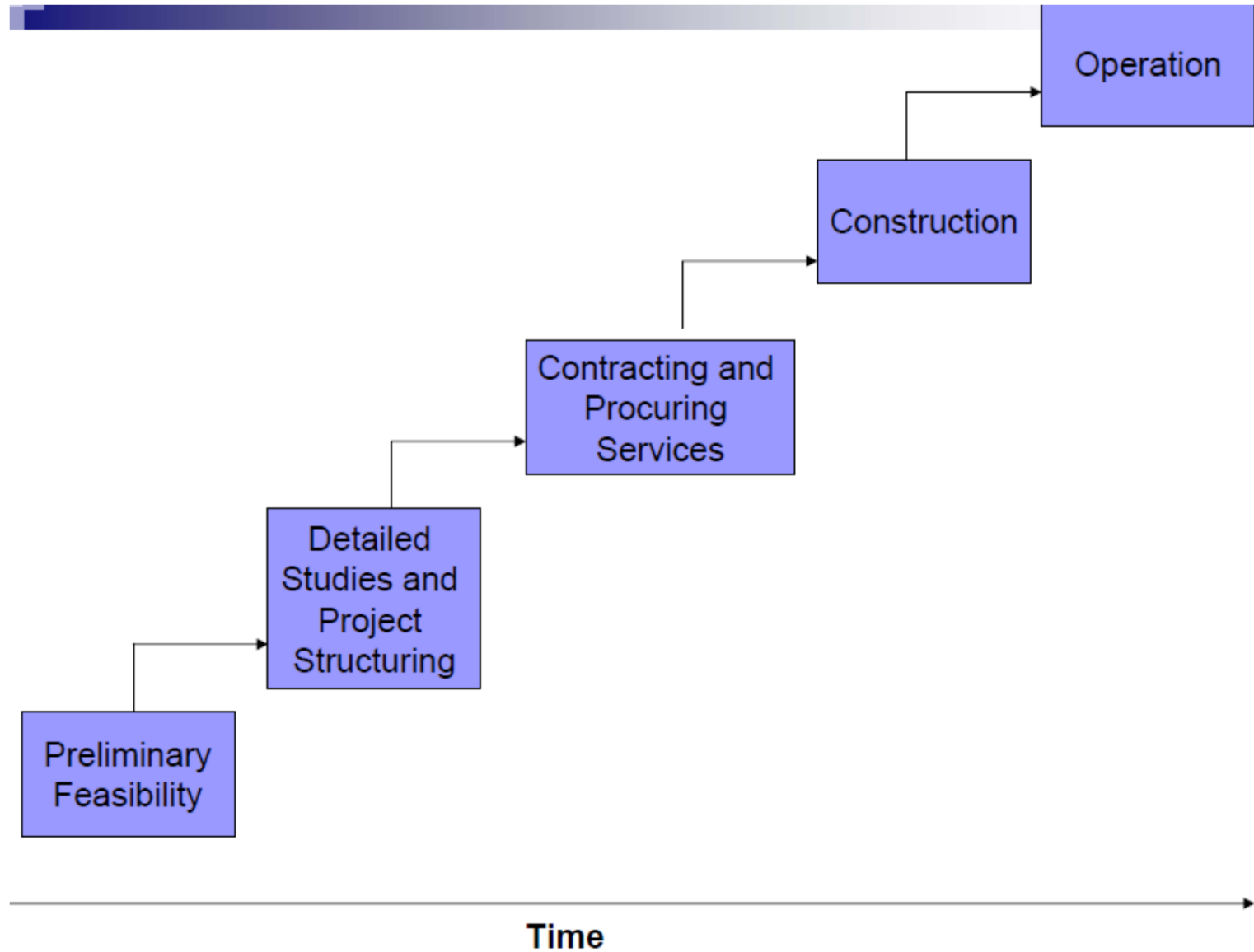
# **Phases of an Infrastructure Project**

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# Introduction

- Infrastructure Planning Process can be conceived as a multistage
- The infrastructure Planning Process must take into account the local context
  - ▶ Local needs should be satisfied
  - ▶ The project should comply with the existing institutional and legal frameworks
  - ▶ The project should align with political objectives and ideology
  - ▶ The project should be technically and economically feasible

# Infrastructure Projects



# Description of Stages

- The preliminary feasibility stage of the project establishes the need for the project. Existing information as well as field visits are conducted to substantiate the need for a project. This phase also determines/identifies the kinds of detailed studies that need to be undertaken
- The Detailed Studies and Project Structuring stage is often the most time-consuming.
  - ▶ Technical Studies (e.g. Geotechnical studies, Land Surveys) need to be undertaken to help design the infrastructure.
  - ▶ Economic and Market studies (e.g. Willingness to Pay studies) must also be undertaken.

# Description of Stages

- Other studies, which are to be undertaken
  - ▶ *Environmental Compatibility and Environmental Impact Assessment*
  - ▶ *Socio Economic Cost Benefit Analysis*
  - ▶ *Financial Analysis*
- At the Conclusion Part of this stage, a *Detailed Project Report* (DPR) is prepared with detailed Technical Specifications
- Financial Engineering and Structuring must be done during this stage
  - ▶ Lenders, Terms of Loan (*Tenors and Rates of Interest*), Mix of debt and/or equity, and user-charges can all be modeled to determine the financial viability of the project
- For Private participation in infrastructure, the private sector may be tasked with many of these studies

# Description of Stages

- Infrastructure projects are often financed through a mixture of *Grants, Debt (loans), Equity (investments) and User-Charges*
- Debt lines of credit are often raised through the regular banking system.
- Debt is often provided by multilateral agencies such as the *World Bank, the Asian Development Bank, the Japanese Bank for International Cooperation* etc
- Equity is often provided through a variety of sources including large organizations in the infrastructure space, Foreign Institutional Investors, Private Equity houses etc
- Grants for infrastructure projects are often provided through programs such as the *Jawaharlal Nehru National Urban renewal mission*

# Description of Stages

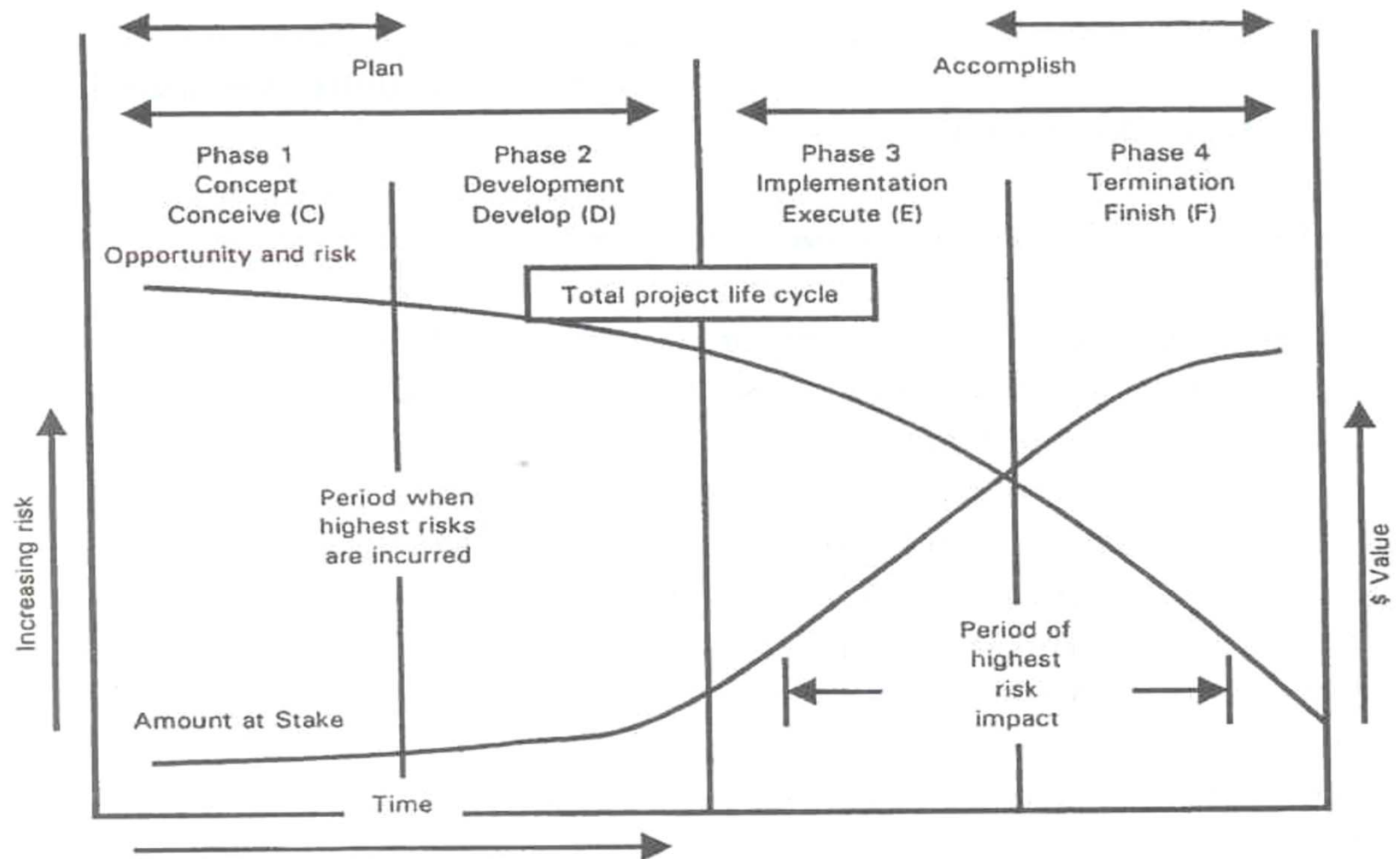
- Once the DPR is prepared, the project can be contracted out.
  - ▶ *Expressions of Interest are sought*
  - ▶ *Requests for Proposals are sought*
  - ▶ *Pre-bid conferences are held to clarify terms of the project*
  - ▶ *Proposals are evaluated and a successful bidder is selected*
- The successful bidder then proceeds with the construction of the project. Material, manpower and productivity, risks etc. must be managed in this phase.
- Once the project has been built and commissioned, operations can commence and the infrastructure services can be availed by the citizens

# Description of Stages

- An Operations and Maintenance Contract can be given to a separate party. Maintenance Parameters can be fixed well in advance
  - *Technical Maintenance and quality issues, Revenue generation issues and Administrative risks must be considered in this phase*
- In the case of Private Provision of Infrastructure, a winning bidder is selected based on their ability to build and operate the infrastructure
- Each of these stages varies in duration as described in the figure on the next slide.
- The greater the time spent on project preparation and structuring, the more likely it is that the project can be implemented smoothly and in a cost-effective manner.
- Hasty project preparation often leads to re-work of documents, leads to false or missing information, and leads to project delays.



# Project Lifecycle & Risk Level



Source: Project Management Institute.

# The nature of the Project Process

- Infrastructure project development is seldom a linear or a deterministic process.
- At all stages, the developing agency must work in partnership with several stakeholders.
  - ▶ *For successful projects, this partnership is vital*
- The figure on the next slide indicates some of the “fuzzy” aspects of infrastructure planning.

# Steps in the Planning Phase

1. Upon identifying a need and performing economic analysis, the sponsoring agency might feel the need to build a coalition and seek external expertise to successfully complete a project. A process of coalition building might then be put into place
2. Government and Political buy-in must be secured at all levels, and the project can be modified in order to ensure this
3. “Emerging Fears” from residents of the local communities, including environmental and social groups can then be confronted and alleviated both by transparent consultations and further modifications to the project
4. Project Financing can be obtained and the project can proceed to completion