





Technical Analysis in Project Management

■ Rabin Bhandari



Purpose

- To ensure that the project is **technically feasible** in the sense that all the inputs required to set up the project are available.
 - To facilitate the most **optimal formulation** of the project in terms of technology, size, location and so on.
 - Choose best alternative
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Determinants of choice of technology/process

- Plant Capacity
 - Principal inputs
 - Investment outlay and production cost
 - Use by other units
 - Product Mix
 - Latest development
 - Ease of absorption
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Appropriateness of Technology

- Whether the technology utilizes the local raw materials?
- Whether the technology utilizes local manpower?
- Whether the goods and services produced cater to the basic needs?
- Whether the technology protects ecological balance?
- Whether the technology is harmonious with the social and cultural conditions?



Material Inputs and Utilities

- Technical analysis is concerned with defining materials and utilities required, specifying their properties and setting up their supply program.
- Classified into four categories:
 - a. Raw Materials
 - b. Processed industrial materials and components
 - c. Auxiliary materials and factory supplies
 - d. Utilities



Raw Materials



- Processed, semi-processed
- Classified into four types:
 - a. Agricultural products
 - b. Mineral products
 - c. Livestock and forest products
 - d. Marine products



Processed industrial materials and components

- What are their properties?
- What is the total requirement of the project?
- What quantity would be available from domestic sources?
- What quantity can be procured from foreign sources?
- How dependable are the supplies?
- What has been the past trend in prices?
- What is the likely future behavior of prices?
- Metals, Semi-processed materials, manufactured parts, components and assemblies



Auxiliary materials and factory supplies


- Chemicals, additives, packaging materials, paint, varnishes, oils, grease , cleaning materials etc.

➤ Utilities:

- Power, water, steam, fuel etc.
- What quantity required?
- What is the source of supply?
- Potential availability?
- Likely shortages or bottlenecks?
- Measures taken to augment supplies?



Technical Analysis

- Objectives and priorities (ex. Private sectors and public sectors)
 - Product Mix
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Plant Capacity/ production capacity

- Feasible normal capacity (FNC)
- Nominal maximum capacity(NMC)

Factors

- Technological requirement
- Input constraints
- Investment cost
- Market condition
- Resources of the firm
- Government policy




Location and site

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- Proximity to raw materials and markets
 - Availability of infrastructure
 - Labor situation
 - Governmental policies
 - Other factors: climatic conditions, general living conditions, proximity to ancillary units, ease in coping with pollution.
 - Site selection



Machineries and equipments

- Plant (process) equipments, mechanical equipments, electrical equipments, instruments, controls, internal transportation system, and others.
 - Spare parts and tools to be purchased with the original equipments, spare parts and tools required for operational wear and tear
 - Constraints in selecting machineries and equipments
 - Procurement of plant and machinery
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Structures and Civil Works



- Site preparation and development (grading and leveling of the site, demolition and removal of existing structure, relocation of existing pipelines, cables, roads, power lines etc, connection of public network like electric power, water, communications, transportations etc.)
- Building and Structures (factory or process building, ancillary buildings, administrative buildings, residential buildings)
- Outdoor works (supply and distribution of utilities, handling and treatment of emission, wastages, transportation, supervision etc)



Environmental aspects



- surface water quality
- air quality
- seismology/geology
- erosion
- land quality
- fisheries
- forests
- terrestrial wildlife
- noise
- archaeological/historical significance
- public health



Project charts and Layout

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- General functional layout
 - Material flow diagram
 - Production line diagram
 - Transport layout
 - Utility consumption layout
 - Communication layout
 - Organizational layout
 - Plant layout



Appreciate questions



THANK YOU