

## Levels of Decision Making

Capital budgeting involves three levels of decision-making (Gordon, Miller & Mintzberg, 1975): operating, administrative & strategic.

Where is the decision taken	Operating decision	Administrative decisions	Strategic decisions
How structure is the decision	Routine: minor office equipment, Inventory recording	Semi-structured: balancing equipment, bond selling	Un-structured: diversification project, plant location
What is the level of resource commitment	Minor resource commitment	Moderate resource commitment	Major resource commitment
What is the time horizon	Short-term	Medium-term	Long-term

## **Generation & Screening of Project Ideas**

Project identification is often a triggering process rather than an analytical exercise. Therefore, it is difficult to develop methods or procedures to accomplish this task. Our objective is to identify investment opportunities, which are primarily feasible & promising, & which merit further examination & appraisal.

The possible sources of generating project ideas:

To stimulate the flow of project ideas the following are helpful:

- (a) Periodic SWOT (strength, weakness, opportunities & threats) analysis,
- (b) Clear articulation of objectives, &
- (c) Fostering (Development) a conducive (favorable) climate.

## Generation & Screening of Project Ideas contd...

- A regular monitoring of the business environment may help to identify the project opportunity. Business environment consists of six sectors: *economic, government, technological, socio-demographic, competition, & supplier sector.*
- Appraisal of corporate strength & weakness covers five broad areas:
  - (1) marketing & distribution,
  - (2) production & operation,
  - (3) research & development,
  - (4) corporate resources & personnel, &
  - (5) finance & accounting

## Scouting for project ideas:

- (a) analyze the performance of existing industries,
- (b) examine the input & output of various industries,
- (c) review imports & exports,
- (d) study plane outlays & governmental guidelines,
- (e) look at the suggestion of financial institutions & development agencies,
- (f) investigate local materials & resources,
- (g) analyze economic & social trends,
- (h) study new technology,
- (i) draw clues from consumption abroad,
- (j) explore the possibility of reviving of sick units,
- (k) identify unfulfilled psychological needs,
- (l) attend trade fairs, & finally
- (m) stimulate creativity for generating new product ideas

## Project Selection

- Project selection is the process of evaluating individual projects or groups of projects, & then choosing to implement some set of them so that the objectives of the parent organization will be achieved.
- Each project will have different costs, benefits, & risks. In the face of such differences, the selection of one project out of a set is a difficult task. To aid this process of project selection we use *decision-aiding models*. These models abstract the relevant issues about the problem from the plethora of detail in which the problem is embedded.
- *Models* may be quite simple to understand, or they may be extremely complex. In general introducing more reality into a model make it more difficult to manipulate.

## Nature of Project Selection Models

- There are two basic types of project selection models,
  - (1) Nonnumeric models (sacred cow, operating necessity etc) &
  - (2) Numeric models (PBP, ARR, NPV, IRR etc.).
- Nonnumeric models do not use number as inputs, on the contrary, numeric models use number as inputs.

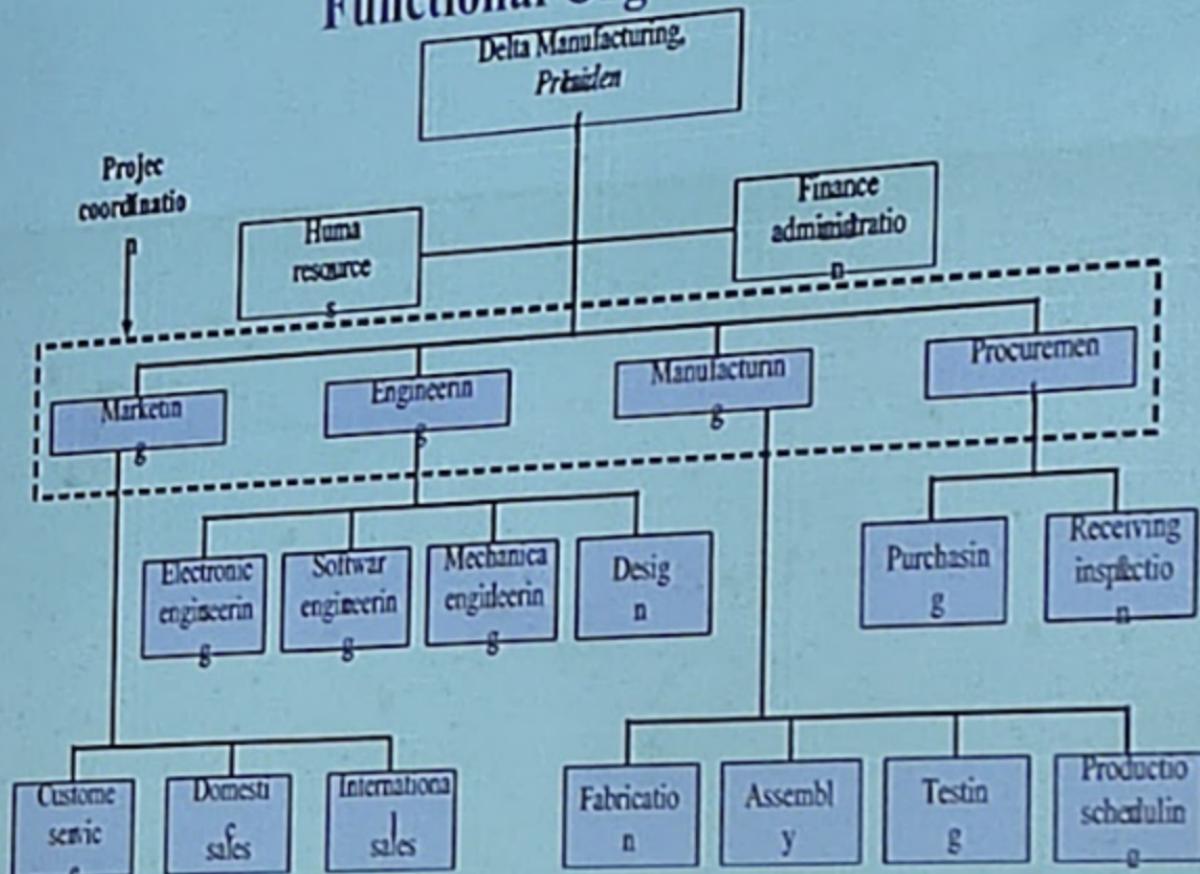
# Project Selection

contd...

- Within the limit of their capabilities, such model can be used to increase profit, improve the competitive position, or optimize the utilization of organizations' scarce resources. Thus, the efficiency of a project selection is highly related to the use of such models.
- According to W. E. Souder (1973), while selecting a model, the following criteria are most important.
  - Realism
  - Capability
  - Flexibility
  - Ease of use
  - Cost
  - Easy computerization

# Project management structures

# Functional Organizations



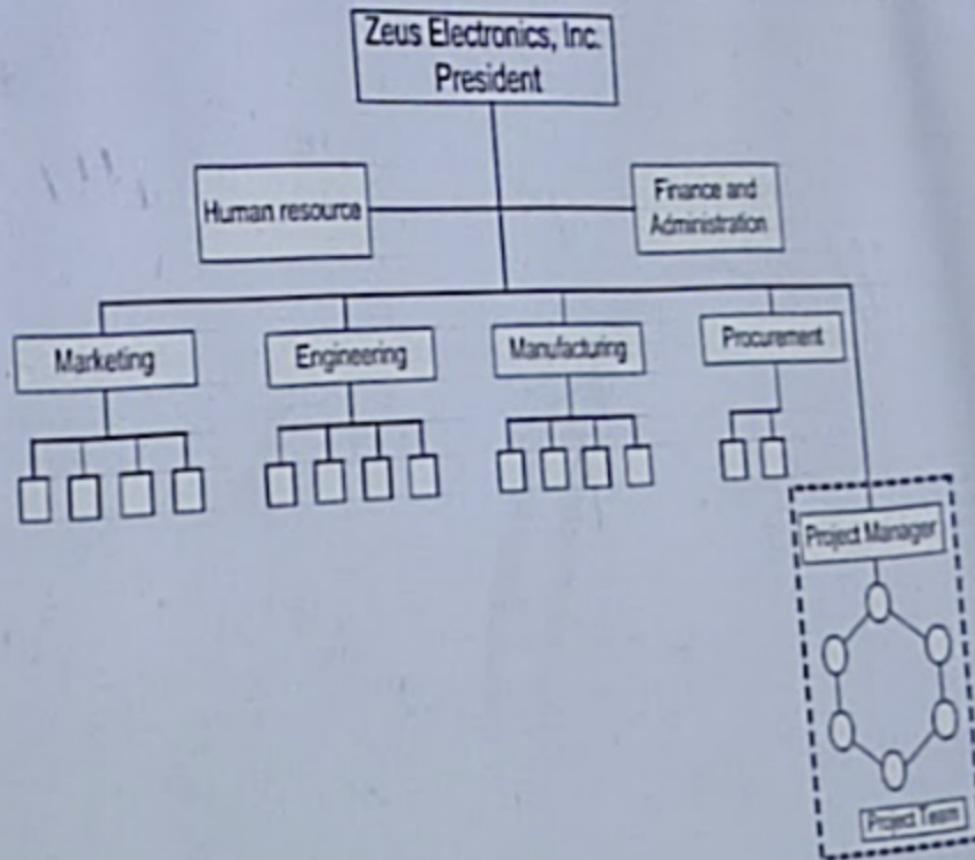
## Advantages of Functional Organization

1. Projects are completed within the basic functional structure of the parent organization. No radical alteration is required to implement the project.
2. Maximum flexibility in the use of staff. Personnel required for the project can be arranged from the broad base of personnel available within the functional departments.
3. If the scope of the project is narrow, crucial aspect of the project can be dealt with in-depth expertise from the functional departments.
4. New project inclusion does not change the normal track of the personnel of the functional organization.  
Therefore, the experts can enjoy growth in their career.

## Disadvantages of Functional Organization

1. Projects often lack focus (less priority for project activities).
2. There may be poor integration across functional units (cross-functional coordination & communication are slow & limited in such organizations).
3. Longer time to complete project through this functional arrangement (slow response).
4. Lack of motivation of people assigned to project. They may take it as an additional burden that is not directly linked to their professional advancement.

# Dedicated Project Team



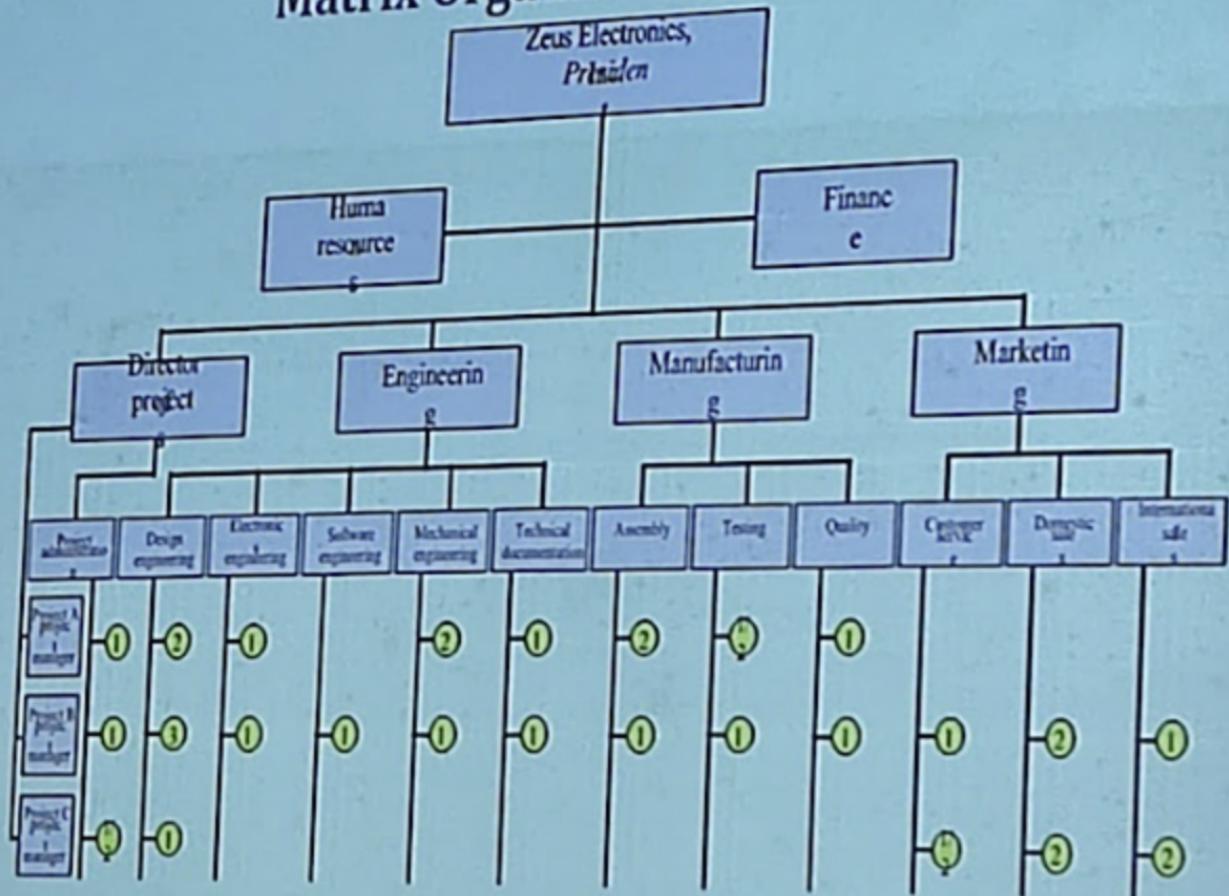
## Advantages of Dedicated Project Team

1. New project does not disrupt ongoing operation.
2. Concentrated project focus.
3. Projects are done quickly.
4. High level motivation & cohesiveness the team
5. High level cross-functional integration.

## Disadvantages of Dedicated Project Team

1. Expensive new appointments & full time resources.
2. Strong "we-they" divisiveness emerges.
3. After completion, it's difficult for the experts to adjust in their old positions.

# Matrix Organization Structure



## Advantages of Matrix Structure

1. Resources can be shared across projects & the organization.
2. Strong project focus because of the project manager.
3. Project has reasonable access to the entire reservoir of technology & expertise of functional divisions.
4. Moreover, they have the scope for returning to their own base after the completion of the project.

## Disadvantages of Matrix Structure

1. Tension between functional managers & project managers who bring critical expertise & perspective to the project.
2. When the resources or expertise are scarce, a conflict may occur between the functional & project managers related to the use of them.
3. Working in a matrix environment can be extremely stressful because of the two bosses- functional & project managers.
4. Conflict between the project managers & functional managers in making decisions may lead to dysfunctionality.

# Choosing an Organization Form

A useful procedure for selecting an organizational form for a project:

1. Identify the specific outcomes desired from the project.
2. Determination of the key tasks of the project & identify the functional divisions where those tasks will be assigned
3. Sequence the key tasks & group them into logical work packages.
4. Determination of project subsystems which will be assigned with the work packages & which subsystem will work closely.

# Choosing an Organization Form

Contd...

5. Identify the project characteristics, constraints, or problems that may have affect the selection of organization form.
6. Analyze the above information (1-5) relative to the pros & cons of each form of organization, & make the decision.

# Mechanisms for Sustaining Organizational Culture

Methods for maintaining organizational culture

- Formal statement of principles
- Top management behavior
- Reactions to organizational crisis
- Allocation of rewards and status
- Rituals, stories, and symbols



Recruitment of employees who fit the culture

Organizational culture

Removal of employees who deviate from the culture

# WHAT IS A FEASIBILITY STUDY

- A feasibility study is defined as an evaluation or analysis of the potential impact of a proposed project or program.
- A feasibility study is conducted to assist decision-makers in determining whether or not to implement a particular project or program.
- The study is based on extensive research on both the current practices & the proposed project/program & its impact on the current practice of the enterprise.
- The feasibility study will contain wide-ranging of data related to financial & operational impact & will include advantages & disadvantages of both the current situation & the proposed plan.
- The feasibility study is conducted during the deliberation phase of the business development cycle prior to commencement of a **formal Business Plan**. It is an analytical tool that includes recommendations & limitations, which are utilized to assist the decision-makers when determining if the Business Concept is viable (Drucker 1985; Hoagland & Williamson 2000; Thompson 2003c; Thompson 2003a).

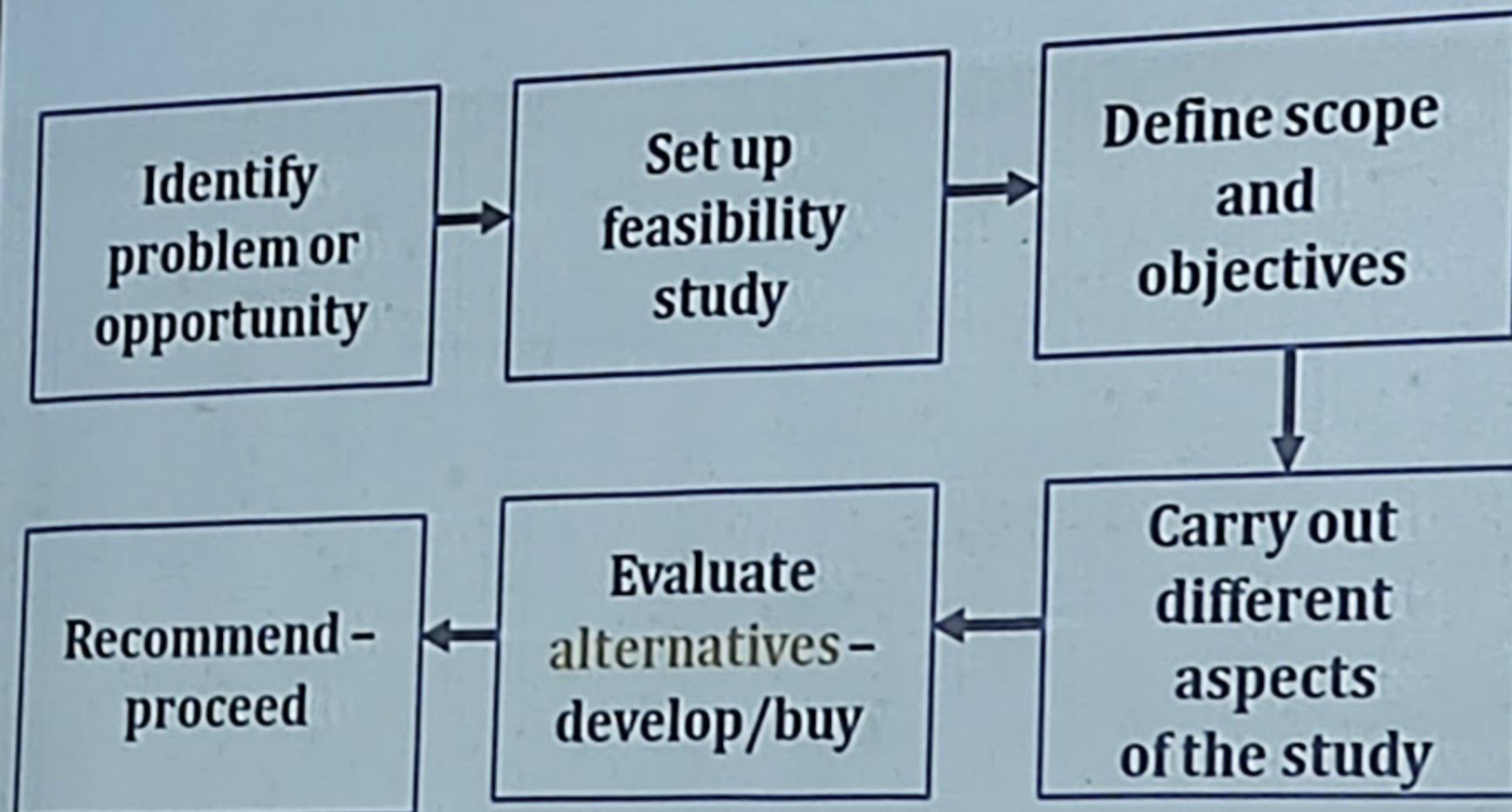
# THE IMPORTANCE OF A BUSINESS FEASIBILITY STUDY

- It is estimated that only one in fifty business ideas are actually commercially viable. Therefore, a Business Feasibility Study is an effective way to safeguard against wastage of further investment or resources (Gofton 1997; Bickerdyke et al. 2000).
- If a project is seen to be feasible from the results of the study, the next logical step is to proceed with the full **Business Plan**. The research & information uncovered in the feasibility study will support the business planning stage & reduce the research time. Hence, the cost of the **Business Plan** will also be reduced.
- A thorough viability analysis provides an abundance of information that is also necessary for the **Business Plan**. For example, a good market analysis is necessary in order to determine the business concept's feasibility. This information provides the basis for the market section of the **Business Plan** (Bangs 2000; Hoagland & Williamson 2000; Truitt 2002; Thompson 2003b).

# FEASIBILITY STUDY

- A feasibility study should contain clear supporting evidence for its recommendations.
- Recommendations will be reliant on a mix of numerical data with qualitative, experience-based documentation.
- A Business Feasibility Study is heavily dependent on the market research & analysis.
- A feasibility study provides the stakeholders with varying degrees of evidence that a Business Concept will in fact be viable (Hoagland & Williamson 2000; Thompson 2003c; Thompson 2003a; Wickham 2004).

# FEASIBILITY STUDY



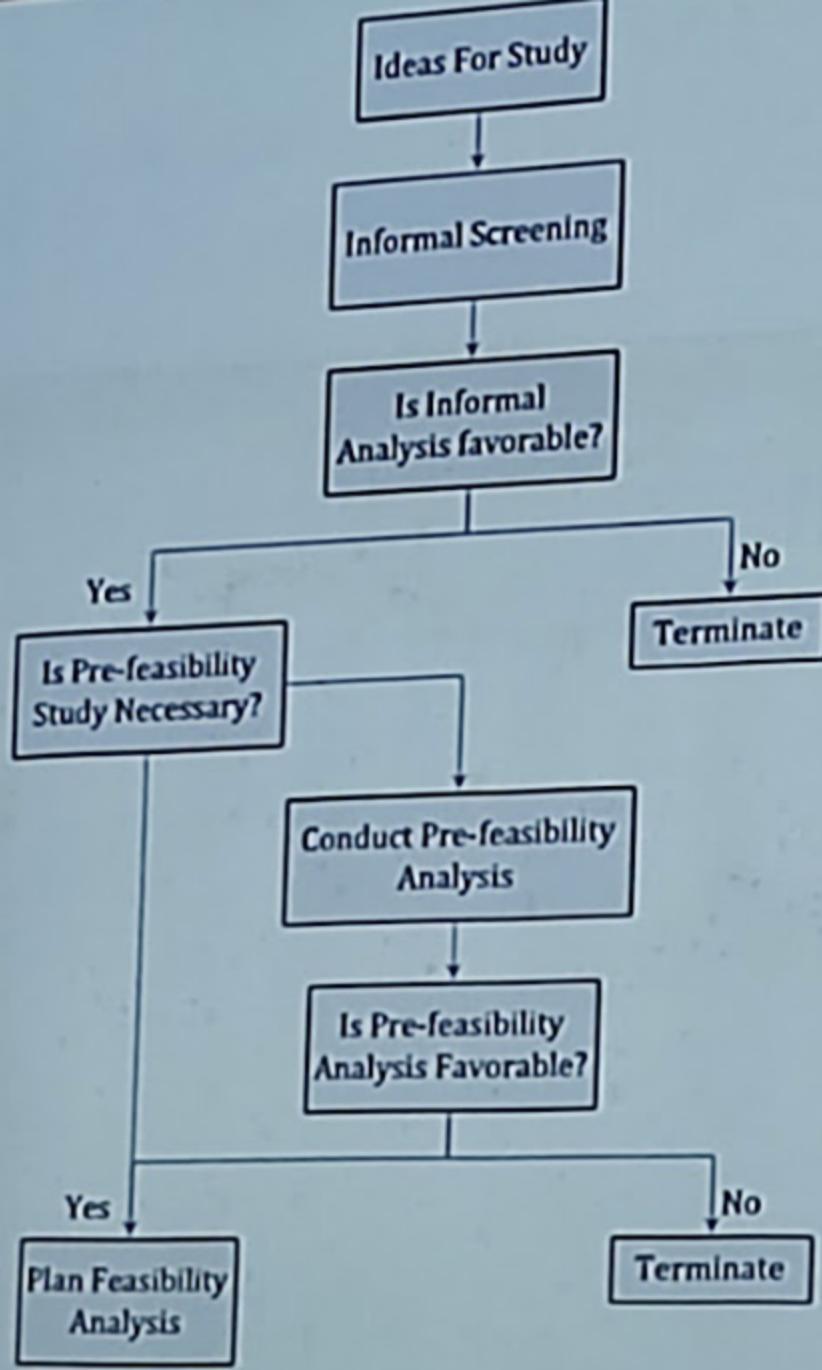
## BUSINESS FEASIBILITY STUDY AND DIMENSIONS OF BUSINESS VIABILITY

- The Business Feasibility Study findings will be assessed by potential investors & stakeholders regarding their credibility & depth of argument.
- The Business Feasibility Study places the findings of the Dimensions of Business Viability Model assessment into a formal business report. It also aligns the findings with functional processes of an enterprise which an audience can easily understand (Thompson 2003a).

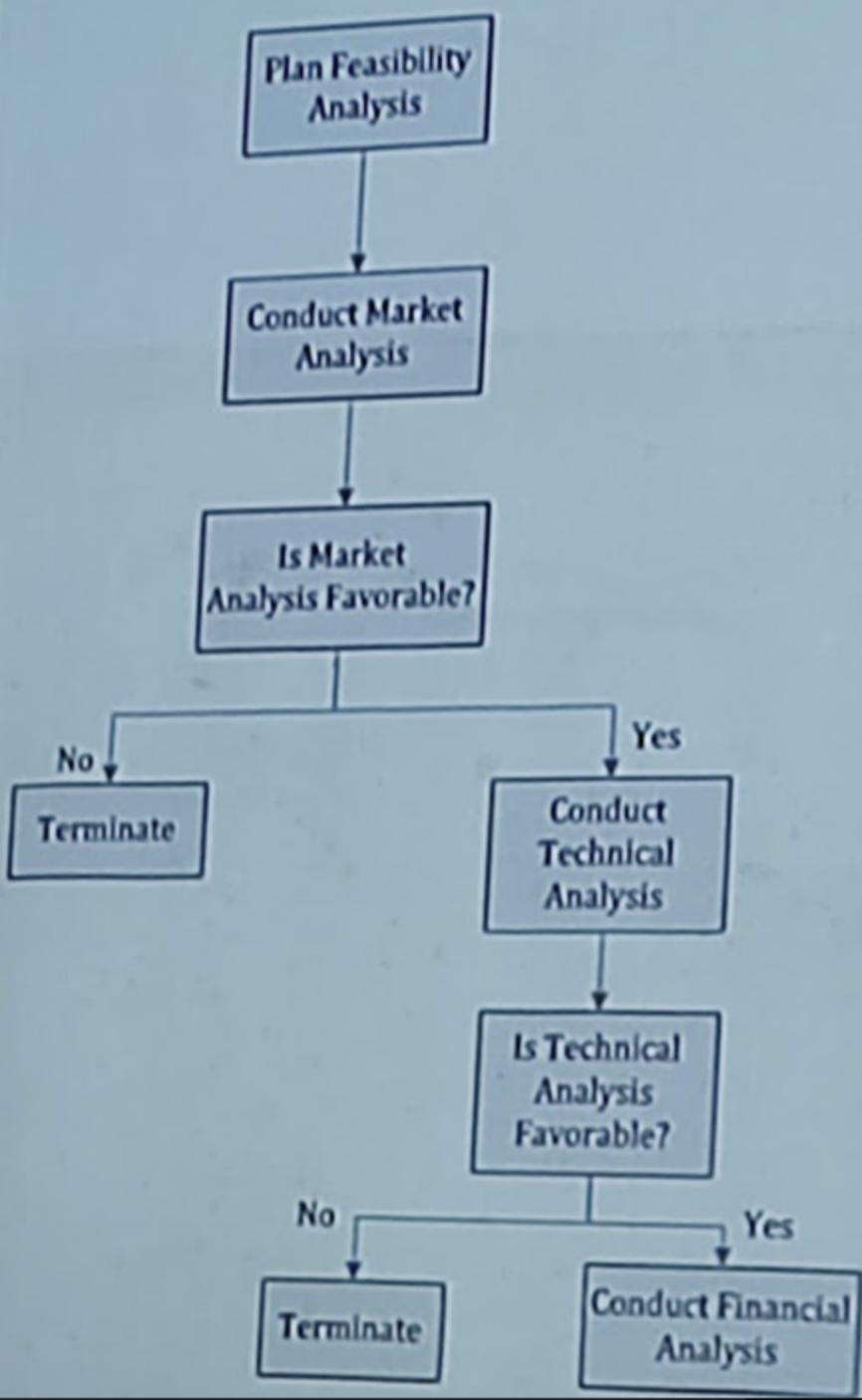
# BUSINESS FEASIBILITY STUDY AND DIMENSIONS OF BUSINESS VIABILITY<sup>Contd.</sup>

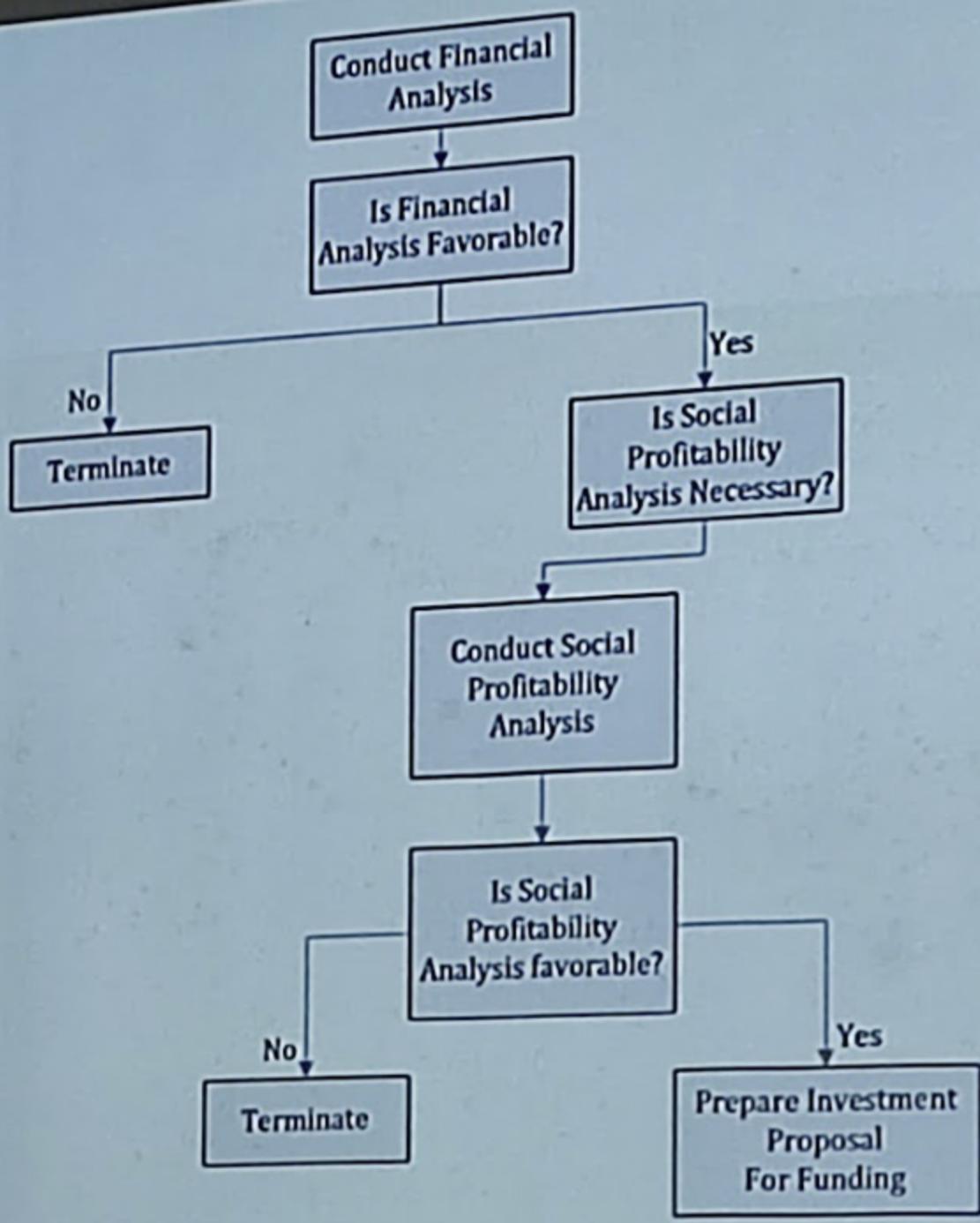
- For the purposes of understanding the structure of a Business feasibility Study the following represents the framework of the Dimensions of Business Viability (Thompson 2003c; Thompson 2003a):
  - Market Viability
  - Technical Viability
  - Business Model Viability
  - Management Model Viability
  - Economic & Financial Model Viability
  - Exit Strategy Viability
- Business & market analysis will contribute considerably to the Business Feasibility Study. Consideration should be given to using traditional business analysis techniques such as SWOT, Porters Five Forces & PEST. Although they may not provide information which is a perfect fit to the proposed business model, they will provide a strong starting point for future analysis.

# Identification & Pre-selection



# Analysis





# Evaluation

# Typical Issues in Feasibility Study

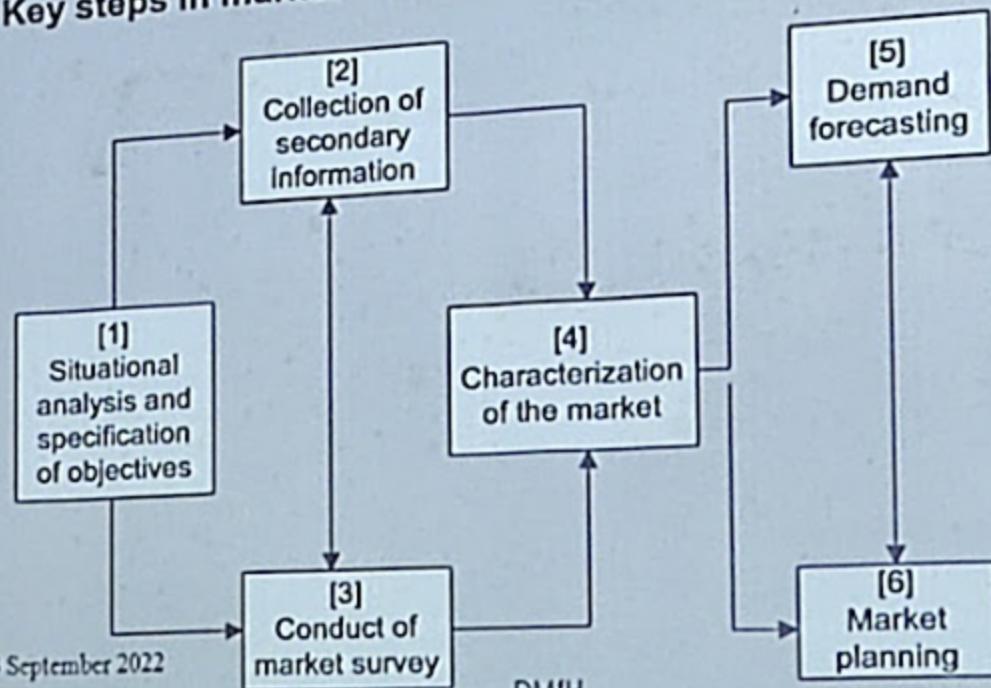
- Market Feasibility
- Technical Feasibility
- Resource Feasibility
- Cultural Feasibility
- Operational feasibility'
- Legal Feasibility
- Schedule Feasibility
- Economic Feasibility

# Market Feasibility

- A market assessment may be conducted first to identify market opportunities. If no opportunities exist, there may be no reason to proceed further.
  - Industry description.
  - Industry competitiveness.
  - Market potential
  - Access to market outlets.
  - Sales projection

**Market & demand analysis** is the first step of project analysis & is concerned with two broad issues: (i) What is the likely aggregate demand for the product or service? (ii) What share of market will the proposed project enjoy? **Market demand analysis must be carried out in a systematic manner**

**Key steps in market- demand analysis and their inter-relationship**



## **(A) Situational analysis & specification of objectives**

- To get a "feel" for the relationship between the product & its market, the project analyst must learn about the preferences & purchasing power of the customers, action & strategies of competitors, & practices of the intermediaries in the industry.
- To generate enough data for market-demand analysis it is essential to spell out the project objectives clearly & comprehensively. It will help the situational analysis to be more precise & less complicated.

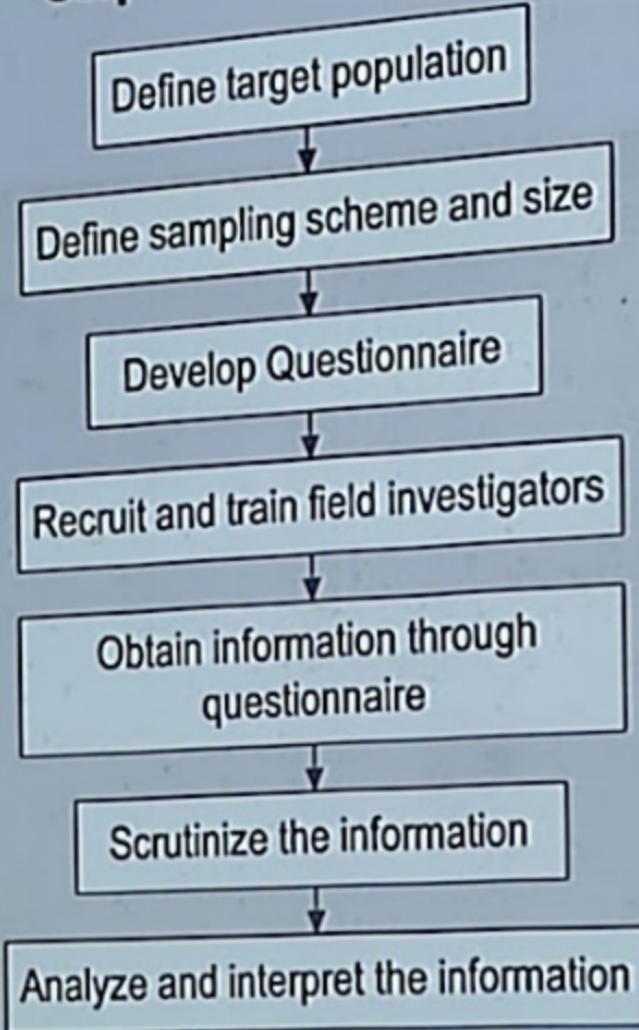
## (B) Collection of Secondary data

- Secondary information is information that has been gathered in some other context & is already available. Secondary information provides that base & the starting point for market & demand analysis. It indicates what is known & provides leads & cues (hints) for gathering primary data required for further analysis.  
Planning Commission Report, Statistical Yearbook, Economic Survey, etc. are the sources of secondary information.
- While collecting secondary information, its **reliability**, **accuracy**, & **relevance** must be carefully examined

## (C) Conduct of market survey

Secondary information often does not provide a comprehensive basis for market-demand analysis. It needs to be supplemented with primary information gathered through market survey. Market survey may be a **census survey** or **sample survey**. In a census the entire population is covered by the survey, on the other hand in a sample survey, a part of the population is considered as the representative of the population. Census survey is expensive as it covers the entire population & in many cases, it is impossible to conduct. In practice, market survey, is typically a sample survey.

## Steps in sample survey



## **(D) Characterization of market**

Based on the information gathered the relevant market of the product or service may be described in terms of the following:

### **(1) Effective demand in the past & present**

Apparent consumption: Production + Imports – Export – Changes in stock level (effective demand)

### **(2) Breakdown of demand:** Market segment defined as, (i) nature of product, (ii) consumer groups, (iii) geographical division

### **(3) Price:** (i) manufacturers' price quoted as FOB/CIF, (ii) landed price for imported goods, (iii) average wholesale price, (iv) average retail price

**(4) Method of distribution & sales promotion:** Types of product (raw material, consumer goods, & industrial goods) tend to have different channels of distribution & different method of sales promotion (discount, advertising, gift schemes)

**(5) Consumers:** Consumer may be characterized into two dimensions, (i) demographic & sociological dimension (age, sex, income, profession etc.), (ii) Attitudinal dimension (preferences, intention, habits, response)

**(6) Supply & competition:** Whether the existing supply sources are foreign or domestic. It is one of the vital issues to be analyzed carefully from the perspective of competition...

**(7) Government policy:** Production targets in national plan, import/export trade control, financial regulations, subsidies, & penalties.

**(E) Demand forecasting:** At this phase, an attempt is to be made to estimate the future demand for the concerned product/service. A wide range of market demand forecasting methods is available for market-demand analysis. These methods can be summarized into three broad groups:

- **Qualitative methods:** Jury of executive opinion method, Delphi method
- **Time series projection methods:** Trend projection method, Exponential smoothing method, Moving average method.

- **Causal method:** Chain ratio method, Consumption level method, End use method, Leading indicator method, Econometric method

#### **(F) Market planning:**

To enable the product /service to reach a desirable level of market penetration, a suitable marketing plan, covering pricing, distribution promotion & service needs to be developed.

# Project Management: Financial Analysis



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# Project Management: Financial Analysis

# Introduction

Financial analysis seeks to ascertain:

- Whether the proposed project will be financially viable to meet the burden of servicing debt.
- Whether the proposed project will satisfy the return expectations who provide the capital.

# Cost of Project

- Land & site development
- Buildings & civil works
- Plant & machinery
- Technical know how & engineering fees
- Expenses on foreign technicians
- Miscellaneous fixed assets
- Preliminary & capital issue expenses
- Pre-operative expenses
- Margin money for working capital
- Initial cash losses

# Land & Site development

- Basic cost of land including conveyance & other allied charges
- Premium payable on leasehold & conveyance charges
- Cost of leveling & development
- Cost of laying approach roads & internal roads
- Cost of gates
- Cost of tube wells

# Building & Civil works

- Buildings for the main plant & equipment
- Buildings for auxiliary services like steam supply, workshops, laboratory, water supply etc.
- Godowns, warehouses & open yard facilities
- Non-factory buildings
- Quarters for essential staff
- Garages
- Sewers, drainage etc.
- Other civil engineering works

# Plant & Machinery

- Cost of imported machinery
- Cost of indigenous machinery
- Cost of parts & spares
- Foundation & installation charges

# Technical know-how & Engineering Fees

- Preparation of the project report
- Choice of Technology
- Selection of the plant & machinery
- Detailed engineering

# Miscellaneous Fixed Assets

- Furniture
- Office Machinery & equipment
- Tools
- Vehicles
- Railway siding
- Diesel generating sets
- Transformers
- Boilers
- Piping systems
- Laboratory equipment etc.

# Preliminary Expenses

- Identifying the project
- Conducting the market survey
- Preparing the feasibility report
- Drafting the memorandum
- Articles of Association
- Incorporating the company

# **Capital Issue Expenses**

- Underwriting commission
- Brokerage
- Fees to managers & registrars
- Printing & postage expenses
- Advertising & publicity expenses
- Listing Fees
- Stamp duty etc.

# Pre-operative Expenses

- Establishment expenses
- Rent, rates & taxes
- Traveling expenses
- Interest & commitment charges on borrowings
- Insurance charges
- Mortgage expenses
- Start up expenses etc.

## **Margin money for working capital**

The principal support for working capital is provided by-

1. Commercial Banks
2. Trade Creditors
3. Long term sources of finance

# Initial Cash Losses

Initial losses in the project cost generally

affects –

1. Liquidity position
2. Impairs the operations.

# Means of Finance

- Share Capital
- Term Loans
- Debenture capital
- Deferred credit
- Incentive sources
- Miscellaneous sources

## **Estimates of Sales & Production**

The starting point for profitability projections is the sometimes supplier of plant & machinery may propose deferred credit facility under which payment for such purchase can be made over a period of time, borne in mind.

1. It is advisable not to assume a high capacity utilization level in the first year operation. In spite of simple technology company may face raw material support as an incentive to certain types of promoters or for setting up industrial units in certain locations, in the form of seed capital assistance, capital subsidy, tax-exemption etc.

50-80 percent in the 2<sup>nd</sup> year.

80-90 percent from 3<sup>rd</sup> year onwards.

# Cost of Production

- Material cost
- Utilities cost
- Labor cost
- Factory overhead cost

# Factory Overheads

- The expenses on repairs & maintenance, rent, taxes, insurance on factory assets, & so on are collectively referred to as factory overheads. Repairs & maintenance expense depends on the state of the machinery- this expense tends to be lower in the initial years & higher in the later years. Rent, taxes, insurance etc. may be calculated at the existing rates. A provision should be made for meeting miscellaneous factory expenses.

## **Working Capital requirement & its financing**

1. The working capital requirement consists of the following:
  - (a) Raw Material
  - (b) Stocks of goods in process
  - (c) Stocks of finished goods
  - (d) Debtors
  - (e) Operating Expenses

## **Working Capital requirement & its financing (contd.. )**

2. The principal sources of working capital finance are :
- Working capital advances provided by commercial banks
  - Trade Credit
  - Accruals & provisions
  - Long term sources of financing
3. To obtaining working capital advances from commercial banks, there are certain limits.
- They are in two forms:
- The aggregate permissible bank finance is specified as per the norms of lending.
  - Against each current asset a certain amount of margin money has to be provided.

# Margin Requirement

While there is no fixed formula for determining the margin amount, the ranges within which margin requirements for various current assets lie are as follows:

<u>Current Assets</u>	<u>Margin</u>
Raw Materials	10%-25%
Work-in-process	20%-40%
Finished goods	30%-50%
Debtors	30%-50%

# Profitability projections

● The estimates of working results may be prepared along the following lines:

- A. Cost of Production
- B. Total administrative expenses
- C. Total sales expenses
- D. Royalty & know-how payable
- E. Total cost of production (A+B+C+D)

## Profitability projections (contd...)

- F. Expected Sales
- G. Gross profit before interest (F-E)
- H. Total financial expenses
- I. Depreciation
- J. Operating Profit (G-H-I)

## Profitability projections (contd....)

- K. Other Income
- L. Preliminary expenses written off
- M. Profit/loss before taxation (J+K-L)
- N. Provision for taxation
- O. Profit after tax (M-N less , dividend on  
Preferred capital & Equity capital)
- P. Retained profit
- Q. Net cash accrual (P+I+L)

## Break Even Analysis

- Break-even analysis refers how much should be produced & sold at a minimum to ensure that the project does not lose money.
- The minimum quantity at which loss is avoided is called break even point. The break even point may be defined in accounting terms or financial terms.

# Financial Break even analysis

- The focus of financial break even analysis is an NPV & not accounting profit. Financial break even point identifies the level of sales where the project will have a zero NPV.

## Financial Break even analysis: Example

1. Variable Cost: 60% of sales
2. Contribution Margin: 40% of sales
3. Fixed cost: Tk. 3 million (Dep. 2 million included)
4. Pretax profit =  $(0.40 \times \text{sales}) - \text{Tk } 3 \text{ million}$
5. Tax (25%) =  $0.25 \{ (0.40 \times \text{sales}) - \text{Tk } 3 \text{ mil} \}$
6. Profit after tax =  $0.75 \{ (0.40 \times \text{sales}) - \text{Tk.3 million} \}$
7. Cash flow=  $\text{Tk } 2 \text{ million} + 0.75 \{ (0.40 \times \text{sale}) - \text{Tk.3 million} \}$   
=  $\text{Tk } 2 \text{ million} + 0.30 \times \text{sales} - 2.25 \text{ million}$   
=  $0.30 \text{ sales} - 0.25 \text{ million.}$

## Financial Break even analysis: Example

Since he cash flow cost for last 10 years, its present value at a discount rate of 12% is:

$$PV(\text{cash flows}) =$$

$$\begin{aligned} &= (.30 \text{ sales} - 0.25 \text{ million}) \times PVIF(10 \text{ years } 12\%) \\ &= (.30 \text{ sales} - .25 \text{ million}) \times 5.650 \\ &= 1.695 \text{ sales} - 1.4125 \end{aligned}$$

The project breaks even in NPV terms whose the present value of there cash flows equals the initial investment of the 20 million. Hence, the financial break even occurs when.

$$PV(\text{Cash flows}) = \text{Investment}$$

$$\therefore 1.695 \text{ sales} - 1.4125 \text{ million} = 20 \text{ million}$$

$$\text{Sales} = 12.63 \text{ million}$$

# Cash Flow Statement

## Source of Funds : Total (A)

1. Share Issue
2. Profit before taxation with interest added back
3. Depreciation provision for the year
4. Development rebate reserve
5. Increase in secured medium & long term borrowings for the project
6. Other medium/long term loans
7. Increase in unsecured loans & deposits
8. Increase in bank borrowings for working capital
9. Increase in liabilities for deferred payment to machinery suppliers
10. Sale of fixed assets
11. Sale of investments
12. Other income

# Cash Flow Statement (contd....)

## Disposition of Funds : Total (B)

1. Capital expenditure for the project
2. Other normal capital expenditure
3. Increase in working capital
4. Decrease in secured medium & long term borrowings
5. Decrease in unsecured loans & deposits
6. Decrease in bank borrowings for working capital
7. Increase in liabilities for deferred payment to machinery suppliers
8. Increase in investments in other companies
9. Interest on term loans
10. Interest on bank borrowings for working capital
11. Taxation
12. Dividends (Equity, Preference)
13. Other Expenditure

# Cash Flow Statement (contd....)

- Opening balance of cash in hand & at Bank
- Net surplus/deficit (A-B)
- Closing balance of cash in hand & at bank

# Projected Balance Sheet

- The balance sheet, showing the balance in various asset & liability accounts, reflects the financial condition of the firm at a given point of time.

# Format of Balance Sheet

## Liabilities

Share Capital

Reserves & Surplus

Secured loans

Unsecured loans

advances & provisions

## Assets

Fixed Assets

Investments

Current assets,

loans & Current liabilities

Miscellaneous expenditures  
& losses

## Format of Balance Sheet (contd...)

- 3 The liabilities side of the balance sheet shows the sources of finance employed by the business.
- 3 The assets side of the balance sheet shows how funds have been used in the business.

For preparing the projected balance sheet at the end of year n+1; we need information about the following:

- 3 The balance sheet at the end of year n.