

# MODULE: 3

# BUSINESS PLANNING

# PROCESS

## Meaning of business plan

- ▣ *Written document* prepared by the entrepreneur that describes all the *relevant external and internal elements* involved in *starting a new venture*.
- ▣ Integration of functional plans like marketing, finance, manufacturing, HRD, etc
- ▣ Addresses short/term decision making
- ▣ Integration and coordination of effective business objectives and strategies.
- ▣ Road map that addresses 'where am I now, where am I going? And how will I reach there?'

## Scope of Business Plan depends on Interested parties like

- ▣ Entrepreneur
- ▣ Investor
- ▣ Suppliers
- ▣ Buyers
- ▣ Other stakeholders like employees, consumers, regulatory bodies



# Objective/importance of

- \*To give direction to the vision formulated by the entrepreneur
- \*To objectively evaluate the prospects of business
- \*To monitor the progress after implementing business plan
- \*To persuade others to join business
- \*To seek loans from financial institutions
- \*To visualize concept in terms of market availability, organizational, and financial feasibility
- \*To guide entrepreneur in actual implementation of plan
- \*To identify actual strength and weakness of plan



# Elements/Components of

- ▣ Introduction
- ▣ Executive summary
- ▣ Market/industry/environmental analysis
- ▣ Description of venture
- ▣ Production plan
- ▣ Operations plan
- ▣ Technical plan

# Elements/Components of

- ▣ Marketing plan
- ▣ Organisational plan
- ▣ Human resource plan
- ▣ Social plan
- ▣ Assessment of risk
- ▣ Financial plan
- ▣ Schedule/milestones
- ▣ Appendix/ annexures/ bibliography

# Requirements/guidelines for developing a Business Plan

- ▣ Keep it short and sweet
- ▣ Focus
- ▣ People and Roles
- ▣ Avoid jargon
- ▣ Information based on study
- ▣ Realistic and objective
- ▣ Proper mission statement
- ▣ LT & ST goals

## Advantages of BP

- ▣ Analysis of ideas on paper
- ▣ Help in convincing others
- ▣ Reduction in emotional bias
- ▣ Provides SWOT analysis
- ▣ Justifies one's ideas/plans
- ▣ Develops consistent strategy

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## Advantage of BP

- ▣ Achieve one's commitment
- ▣ Feasibility study
- ▣ Action plan
- ▣ Selling tool
- ▣ Fundraising
- ▣ Evaluating progress





## Disadvantages of BP

- ❑ Discouragement
- ❑ Cutting corners/short cuts
- ❑ Takes Time
- ❑ Tunnel vision
- ❑ Expense
- ❑ Inflexibility
- ❑ Obsolete
- ❑ Lack of accountability
- ❑ Poor implementation

# Why do business plans fail

- ❑ Improperly described plan
- ❑ Poorly defined strategies
- ❑ Lack of details on job responsibilities and op schedules
- ❑ Unprofessional goals and objectives
- ❑ Incomplete plan
- ❑ Not measurable
- ❑ Inadequate commitment
- ❑ Lack of experience
- ❑ No sense of threats and weaknesses
- ❑ No proper customer base



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# BUSINESS PLANNING PROCESS

## BUSINESS PLANNING PROCESS





## 1. IDEA GENERATION

It is the *first step* in the business plan process. This step *differentiates* an *entrepreneur* from usual business. An entrepreneur may come up with a *business idea* or may bring in *addition* to existing product in the market. *Sources* of new idea for entrepreneurs

- Consumers/ customers
- Existing companies
- Research and development
- Employees
- Dealers, retailers

## 2. Environmental scanning :

Environmental scanning which includes analyzing *external and internal environment* that affects business idea.

1. External environment comprises of

**Socio cultural appraisal :** *culture and traditions* existing in society. It is comprised of *values and beliefs* of people which determines the *acceptance of product* by customer in the market.

**Technological appraisal :** it assess *technological options* available to convert an idea into product. It also provides an *brief overview* of technological aspects.

- ❑ **Economic appraisal** : it assess the status of society in terms of *economic development, per capita income, national income, consumption pattern in the business.*
- ❑ **Demographic appraisal** : it assesses the *population pattern* of given geographic area. Which includes *sex, age profile, distribution* etc.
- ❑ **Government appraisal** : it assesses the *various legislations, policies, incentives* formulated for a particular industry. Flexibility of these policies determine ease for entrepreneur in terms of opening venture in particular area.

## 2. Internal environment :

- **Raw material** : it refers to in terms of availability material required for the process of production material availability is at distance place and expensive then entrepreneur should give thought to the same.
- **Production/ operation** : it assess the availability various machineries, equipments, tools and technology that would be required for production.
- **Finance** : it studies total requirement of finance in terms of start up expenses, fixed expenses, running expenses etc.
- **Market** : refers to study on potential customers and target customers in market.
- **Human resource** : refers to demand and supply of required human resource in market and estimation of expenses to be incurred on human resource.



### 3. FEASIBILITY ANALYSIS

- **Marketing plan** : lays down the *strategies of marketing* which can lead to success of business plan. Strategies in terms of marketing mix which includes (*product, price, place, promotion*) which determines the potential of customers for product in the market.
- **Production plan/operational plan** : production plan is drafted for manufacturing sector where as operational plan is designed for business into service sector. It comprises *strategies on parameters such as location layout, availability of material, human resource etc.*
- **Organizational plan** : *defines type of ownership pattern* company, sole trading concern, family business, private public limited company etc.
- **Financial plan** : financial plan indicates the requirements of proposed business enterprise which includes fund requirement, cash flow statement, break even point, projected profit and loss statement, projected balance sheet, profit-loss statement.





#### **4. Project report preparation :**

Project report is a written document describes step by step strategies involved in starting and running business.

#### **5. Evaluation , control and review :**

As company operates in dynamic environment, company has to *monitor and review strategies and policies* to stay in line with competitors existing in market.

# MARKETING PLAN

## MARKETING PLAN

- ❖ **Marketing plan** refers to plan that describes condition and strategy related to how products/services will be distributed, priced and promoted in market.
- ❖ **INDUSTRY ANALYSIS** : prior to preparing marketing plan entrepreneur are required to conduct industry analysis section of the business plan. Industry analysis provides information about national and local market that affects marketing operation of company. Industry analysis involves collecting information about company which is available in form of secondary data from newspapers, article, websites, catalogs, promotional interview with distributors, customers etc.

## STEPS INVOLVED IN MARKETING RESEARCH

1. Define purpose and objective

2. Gathering data from secondary sources

3. Gathering data from primary sources

4. Analyzing and interpreting the data

## STEPS IN MARKETING RESEARCH

- 1. Defining the purpose or objective**  
entrepreneur should be clear about the nature of information required by the business, sources through which required data will be collected, whether required data will be primary or secondary source of information.
- 2. Gathering data from secondary source**  
Secondary source of information is available through magazines, newspapers, libraries etc. It usually refers to data available about competitors strategy and their position in the market.



3. **Gathering information from primary sources** : primary data required for market research is collected from people directly through methods such as observation, networking, interview, focus group, exhibition etc.
4. **Analyzing and interpreting results** : research should be evaluated and interpreted depending on the objective of research project. Summarizing results will provide preliminary insights about competitors' market position and their image in competitive environment.

## CHARACTERISTICS/ IMPORTANCE OF MARKETING PLAN

- ❖ it should provide strategy for accomplishing company mission and goal.
- ❖ It must provide for the use of existing resources and allocation of all equipment, financial resources, human resources in company.
- ❖ It should provide for continuity so that each marketing plan can successfully meet long-term goals and objectives of company.
- ❖ It should be simple and specific in nature so as to provide appropriate roadmap in terms of plan and market strategy for company.
- ❖ It should focus on criteria to be evaluated to determine marketing success of the company.

## MARKETING PLAN- STEPS

DEFINING THE BUSINESS SITUATION



DEFINING THE TARGET MARKET ( OPPORTUNITIES AND THREATS )



CONSIDERING STRENGTHS AND WEAKNESS



ESTABLISHING GOALS AND OBJECTIVES



DEFINING MARKETING STRATEGY AND ACTION PROGRAM

PRODUCT

PRICING

DISTRIBUTION

PROMOTION



BUDGETING MARKET STRATEGY



IMPLEMENTATION OF MARKET PLAN



MONITORING PROGRESS OF MARKETING ACTIONS

## STEPS IN PREPARING MARKETING PLAN

1. **Defining business situation** refers to understanding past and present business achievements of the venture. It gives basic insight about success in persisting in market, response of customers to the venture in market, and helps in predicting customer acceptance of company products in the market.
2. **Defining target market** : target market refers to a group of potential customers towards which the venture aims its market plan. Knowledge of the market will provide a basis for determining an appropriate market action strategy to meet the needs of customers. Target market also includes market segmentation which involves the process of dividing the market into definable and measurable groups for the purpose of targeting market strategy.



3. **Considering strength and weakness** : strength of business refers to core areas which company is specialized in which may be abundant experience of company in similar area of business and weakness may be in terms of production capability, or layout which poses limited space for equipment and operation.
4. **Establishing goals and objectives** : marketing goals of the company should be clear and specific in nature as it has to clearly inform about nature of product, target customers, promotion, advertising support etc.





## 5. Defining marketing strategy and action program

refers to specific activities outlined to meet the v business plan objectives and goals.

- a. Product and service : indicates description of p or service to be marketed in the new venture.
- b. Pricing : refers to price to be charged for prod market before which company is required to co various aspects such as cost, margin , competition
- c. Distribution : refers to means through which p will be made available to customer in market involves decision relating to nature of p distribution channel, middlemen etc.
- d. Promotion : refers to various channels through entrepreneur will advertise company prod customers in market.

7. **Budgeting marketing strategy :** After developing marketing plan entrepreneur is required to estimate total expenses to be incurred in the process of implementing marketing plan. Expenses of marketing plan should be in line with planned expense of entrepreneur.

8. **Implementation of marketing plan :** marketing plan should be implemented in the company. All employees should be informed to the workforce involved in marketing activity, it acts as guiding element to direct on strategies which will make marketing process effective.
9. **Monitoring progress of marketing activity :** marketing of plan involves tracking sales and results of marketing effort. Sales data for each product, data gathered by market survey are some few methods of monitoring progress of marketing plan.



# Elements of Marketing Plan

- ▣ Executive summary
- ▣ Business overview
- ▣ Target market
- ▣ Goals
- ▣ Pricing, positioning and branding
- ▣ Market strategies
- ▣ Implementation tactics
- ▣ Budget
- ▣ Evaluation of results

# Importance of MP

MP leads other plans because:

- ▣ Overall direction
- ▣ Marketing goals
- ▣ Business environment
- ▣ Target and tactics



# PRODUCTION PLAN

## PRODUCTION PLAN

- ❖ Production plan is the process of converting input into output through a *conversion process*.
- ❖ The inputs are in the form of land, labour, material, machinery, capital and information.
- ❖ Transformation takes place through machinery in manufacturing unit and through employee skills in service sector.

# Importance of production p

- ▣ Better service to customers
- ▣ Fewer rush orders
- ▣ Better inventory control
- ▣ Effective use of equipment
- ▣ Reduced idle time
- ▣ Better morale
- ▣ Lower capital requirement

# Dimension of production p

Plant  
location

Plant  
layout

Inventor  
y  
manage  
ment

Monitori  
ng stock  
turn and  
coverage

Quality  
manage  
ment  
system

Total  
quality  
manage  
ment



## DIMENSION TO BE COVERED FOR PRODUCTION OR OPERATION PLAN

- ❖ **Plant location** : refers to geographic location where the infrastructure of company will be built and the operations of the company will take place. Following aspects should be taken care of while choosing plant location :
  - a. Vicinity to raw materials
  - b. Availability of raw materials
  - c. Availability of labour
  - d. Proximity to market
  - e. Climate condition
  - f. Cost of location
  - g. Tax, subsidies and loans



- ❖ **Plant layout** : is *pattern in which space is* arranged in order to utilize the machine, equipment, and manpower. Effective design of plant layout *reduces unnecessary movement of* employees and helps in *effective utilization of* time and resources in company. Variables considered while planning plant layout :
- Proper utilisation of space
  - Proper light & ventilation in all areas of premises
  - Ensure smooth flow of operation
  - Supervision can be carried out in smooth manner
  - There are provision for emergency exit
  - There is flexibility to introduce changes in future

- ❖ **Inventory management** : inventory management refers to maintaining inventory in form of raw materials, packing materials, WIP, adequate inventory order to meet business requirements.
- ❖ **Monitoring stock turn and coverage** : monitoring individual stock items to identify *fast and slow movers* depending on the industry.
- ❖ **Quality management system** : quality management refers to maintaining quality *in* *of product* produced in company. As customers these days are getting conscious about quality by day maintaining quality standards in production will help in building company image and build customer loyalty to company/products.



- ❖ **Total quality management** : management focuses on quality improvement through *prevention of problems and errors*. It requires *continuous monitoring* and control of production performance and quality etc.
- ❖ **Budgeting production plan** : depending on COGS per quantity, projected cost of production at any stage can be estimated. The amount of production and budget depends upon the capacity of production unit.





# Factors for production pl

- ▣ Market forecast
- ▣ Inventory control
- ▣ Availability of resources
- ▣ Standard operating procedures
- ▣ Risk factors

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# ORGANISATION PLAN





## ORGANIZATIONAL PLAN

- ❖ Organizational plan involves deciding the form of ownership that entrepreneur intends to take. Nature of planning, organizing, leading and controlling will be determined by nature of business or form of ownership.
- ❑ Process by which an organisation creates procedures and actions to achieve stated objectives
- ❑ List of work plan, structures, responsibilities, relationships, responsibilities, accountability etc

# Aspects of org plan

Focus/important areas:

Forms of ownership

Designing org structure

Job design

Manpower planning

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## Importance of org plan

- ▣ Gives Focus to work and resources
- ▣ Identifies real needs of clients
- ▣ Reveals what should no longer to be delivered
- ▣ Legitimises work of organisation
- ▣ Provides roadmap to organisation's growth (guidance)



## STEPS IN ORGANIZATIONAL PLAN

- ❖ **Developing management team** : refers to set of employees employed in the company who are in charge of managing the activities on the operating part of organization.
- ❖ **Legal form of organization** : refers to composition and existence of business. Business may be proprietorship, partnership or corporation form of business. Three forms of business are :
  - a. Corporation is legal entity that is run by stockholders having limited liability. It is regulated by the statute and treated as separate legal entity for liability and tax purposes.
  - b. Proprietorship : is form of business with single owner who has unlimited liability, controls all decisions, and receives the profit.
  - c. Partnership : two or more individuals having unlimited liability who have pooled resources to own a business.

- **Ownership** : it refers to pattern of investment and control of owners in company, which in turn determines the conditions relating to sharing of profit and loss in business.
- **Liability of owners** : of business covers two types. Either members of business will have limited liability or unlimited liability depending on legal form of business agreed by partners.
- **Costs of starting business**: refers to expenses incurred in starting the business and proportionate contribution from every member of business. Sources through which required financial resources for business will be raised.
- **Continuity of business** : refers to question of who will take over business operations in future and what will be members role in coming future.



- ▣ **Transferability of interest** : entrepreneur with two options in relation to transferability of interest. Owner may transfer his interest after assessing the credibility of member in business or may retain interest with his own wish.
- ▣ **Capital requirement** : refers to amount of capital required to start up business venture, source through which required finance for company can be obtained, what will be contribution of member or the owner towards business.
- ▣ **Management control** : it refers to control of business in the hands of an individual person or several members in business. It also comprises the power of members in terms of decision making and guiding business activity in company.

- ▣ **Distribution of profit and loss :** profit of firm may be shared as per the terms and conditions agreed by the members of business. Loss or liability of individual depends on nature of business agreement of partner with business.
- ❖ **Tax attributes for forms of business :** advantage and disadvantage will vary in accordance with form of business. In proprietorship and partnership profit and loss of business is considered same as that of individual as in corporation as business is treated as separate entity tax is laid on business and earning of individual separately.



- ❖ **Designing the organization** : it comprises of and explicit indication to the members organization as to what is expected from them. Expectation are grouped in following areas :
  - a. Organization structure refers to task, responsibility and accountability of every member in the business.
  - b. Planning, measurement and evaluation of success : to communicate goals and strategies to attain those goals in business.
  - c. Rewards : forms of rewards and yardstick based on which employees will be rewarded in company.
  - d. Selection criteria refers to guidelines for selecting employees in company.
  - e. Training : refers to determining skill requirements for employees in company and accordingly design training program for employees in company.

- ❖ **Building the management team** : this part involves to see that strategy of business should be in line with objective of the company. The management team of the company should set a role model for employees in company and accordingly plan and guide employees towards organization goal attainment. Management team of the company should be flexible to new techniques and innovation in the company. Management team should focus on efficient employees in company and define core values which guide and regulate employees behavior and attitude in company.





- ❖ **Role of board of directors** : board of directors in the company are required to manage the company's operating and capital budget, developing long-term strategic plan for growth and expansion, supporting day to day activities, resolving conflicts among owners or shareholders, ensuring proper use of assets, developing new source of information for entrepreneurs.
- ❖ **Board of advisors and organization** : board of advisors are not permanent employees of the company. They are set of expertise who provide advice on business in terms of management and technical issues in company.



# Steps in preparing org pl

- ▣ Objectives
- ▣ Design team
- ▣ Current processes
- ▣ Tasks and functions
- ▣ Current structure
- ▣ Identify changes in structure
- ▣ New org chart
- ▣ Implementation plan (guide)

# FINANCIAL PLAN

## FINANCIAL PLAN

- ❖ It studies total requirement of finance in terms of start up expenses, fixed expenses, running expenses etc.
- ❖ Financial plan indicates the requirements of the proposed business enterprise which include income statement, fund flow, cash flow statement, break-even point, projected ratio, projected balance sheet etc.



# Financial Plan

- ▣ Fin plan describes activities, resources, equipment and materials needed to achieve objectives and the timeframes involved
- ▣ Can be a budget outlining future income, expenditure and investments for further expansions



OPERATING AND CAPITAL BUDGET

PRO FORMA OF INCOME STATEMENT

PRO FORMA OF CASH FLOW

PRO FORMA BALANCE SHEET

BREAK EVEN ANALYSIS

PRO FORMA OF SOURCES AND  
APPLICATION OF FUND



- ❖ **Operating and capital budget** : entrepreneur must develop an operating capital budget first. Capital budget refers to capital expenditure involved in the project. operations budget refers to operating expenses like utilities, salary, depreciation, insurance, advertising etc. Projection is usually phased in a monthly basis
- ❖ **Proforma income statement** : refers to projected gross profit calculated from projected revenues minus projected costs. costs usually comprise of COGS, and operating expenses above. Taxes are deducted from gross profit to give net profit



- ❖ **Proforma cash flow** : refers to projected cash available calculated from projected cash receipts minus projected cash dismemberment. It is the difference between actual cash receipts and payments. It is not the same as profits. Often calculated from profits by adjusting for depreciation, account receivables, inventory, prepaid expenses, accounts payables and activities like capex, debt and dividend payments.
- ❖ **Proforma of balance sheet** : summarises projected assets, liabilities, and net worth of the venture. Balance sheet represents the position of the business at end of year.

- ❖ **Break even analysis** : Entrepreneur in early stage is required to know when profit margin is achieved which will help him understand the financial potential of a start up business. Break even is a useful technique to analyze how many units have to be sold in order to break even. Break even is volume of sales where venture neither makes profit nor loss.  $BE = \text{Overheads} / \text{margin}$
- ❖ **Proforma for sources and application of funds** : summarizes projected source of funds available to the venture and how these funds will be distributed.

# Objectives of Fin plan

- ▣ Funding
- ▣ Balance risks and costs
- ▣ Simplicity
- ▣ Long term view
- ▣ Flexibility
- ▣ Liquidity
- ▣ Optimum use of funds
- ▣ Financial leverage

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# Importance of a fin plan

- ▣ Cash management
- ▣ Long range view
- ▣ Spotting trends
- ▣ Prioritising expenditure
- ▣ Measuring progress

Guide



# PROJECT REPORT

# What is project report?

- ▣ A project report is a business plan written with a purpose of procuring funds usually from a financial institution.
- ▣ It could even be for internal project sanctioning.
- ▣ It has more elaborate financial plan with detailed feasibility studies to convince project viability and to get funds

## CONTENTS OF PROJECT REPORT

1. **Cover page** : page of the project report should contain the title of the project, name, address of the readers of the report can easily contact the entrepreneur relating to queries of report.
2. **Table of contents** : table of contents are completed after the main body of the project report is finished. Topics covered in the project report along with page number should be mentioned in the project report.
3. **Executive summary** : should be written after the completion of project report as it gives brief about the project. Length of the executive summary should not exceed more than one-two pages.

4. **Company information and industry** : Here you should explain the ownership form of the company, which should contain the reasons for venturing into the proposed business plan, how you plan to satisfy the needs and expectations of potential customers and existing competitors in the industry. It should also include SWOT analysis of the company.
5. **Technical plan** : In this part of the report the technical aspect analysed during the technical feasibility study in the report should be highlighted. The choice of product and service to be offered should be justified. Report should be able to explain how the product of the company is creative and innovative compared to the existing product in the market.





6. **Marketing plan** : this aspect of the product should focus on the industry and market feasibility. It should describe about the pricing policy, findings of market research, how large is the market for the product to be offered by the company, about marketing strategy adopted by the company to promote the product, target customers company is focusing on.
7. **Operations plan** : it describes about manufacturing and service delivery process utilised for production of chosen product or service. It should explain about the innovation brought in the process of production which makes it better when compared to existing competitors. It should also focus on the location, available resources required for production.



8. **Organizational plan** : It gives information about the management team who are part of the company. It focuses on the management and technical skills possessed by the employees in company and how they will prove to be beneficial for the work process carried in the company. It should highlight as to why even after possessing such efficient skills, you are preferred joining your organization.
9. **Project timeline** : this chapter explains about the network diagram which explains about the duration required for the project. Diagram explains about the various activities in the project, which are sequentially organized and the time duration required for the execution of the project is arrived by estimating the time required for completion of every activity and its contribution to the overall project. It provides information and later process of the company.

10. **Critical risk and assumption** : it explains various assumptions made during the formation of the company particularly regarding the financials. There may be various risks related to the product and market company is planning to enter. All details should be highlighted in this part of the report. Sensitivity analysis is incorporated to analyse the impact of these risks and proper action is documented.
11. **Social plan** : it explains how company projects will benefit the society. It should highlight how the company will generate employment opportunities, lead to skill development of local people, production of goods and services to be provided to the local people, utilization of local resources etc.



12. **Exit strategy** : this is the negative aspect of business but the company should explain how it would close down the business if the company is not able to earn the expected profitability. Investors will be keen to know as to how their investment can be recovered in such situations.
13. **Financial plan** : it is an important part of the report which will contain brief content in various sections with numbers in monetary terms. It will explain about the financial composition of the company, various sources through which the company has raised required finance, total expenses incurred by the company which will be effectively explained through the means of break-even analysis, PBP, ARR, NPV, IRR etc and the company's financial reports.



14. **Conclusion** : this summarizes the key of the report in concise manner. It should end the report on a positive note so that the reader develop positive image about the report.
15. **Appendices** : it contains conclusion part of report and supplement data which is important part for the report but cannot be included in initial topics of the report.

# Project-Definition

- ❑ PMI's PMBOK defines project as "A temporary endeavour undertaken to create a unique good or service"
- ❑ F L Harrison- "A non-repetitive, one-off undertaking, normally with discrete time, financial and technical performance goals"
- ❑ British standard- "A unique set of coordinated activities with definite starting and finishing dates, undertaken by an individual or organisation to meet specific objectives within defined schedule, cost and performance parameters."



# Characteristics of project

- ▣ Focus
- ▣ Life span
- ▣ Team spirit
- ▣ Life cycle
- ▣ Unique activities
- ▣ Specific goal



- ▣ Sequence of activities
- ▣ Specific time
- ▣ Interrelated activities
- ▣ Transcience creates urgency
- ▣ Uniqueness creates risk and uncertainty
- ▣ subcontracting



# Factors in prep of a project

- ▣ Entrepreneur's interest
- ▣ Government regulations
- ▣ Resource availability
- ▣ Market adequacy
- ▣ Cost factor
- ▣ Risk level



# Developing a project report

- ▣ Choosing an idea
- ▣ Observation
- ▣ Scanning business environment
- ▣ Preparation of project report



# Significance of project rep

- ▣ Road map
- ▣ Basis for loans
- ▣ Reflects economic health
- ▣ Others – record, future reference, registration, issue of shares

# FEASIBILITY STUDY/PROJECT APPRAISAL



## Feasibility study/Project appraisal

- ▣ Process of investigation, review and evaluation of the project or its alternatives as defined.
- ▣ Concerns nature and scale of investment, economic evaluation based on cash flow analysis of all costs and benefits.
- ▣ Cyclical process repeated as new ideas come and additional info received, till a feasibility is reached.
- ▣ Ex-ante assessment to decide on the project.

# Objectives of feasibility study

- ▣ To assess project results
- ▣ To improve project management and project planning
- ▣ To promote learning
- ▣ To establish new knowledge
- ▣ To understand different stakeholders' perspective
- ▣ To ensure accountability
- ▣ To ensure best use of funds
- ▣ To avoid weaknesses and future mistakes

## Reasons for feasibility study

- ▣ Assesses economic viability of the project
- ▣ Protects from larger capital investments
- ▣ Useful and valid for different projects
- ▣ Ideas on paper before implementation
- ▣ Presents associated risks and returns
- ▣ Provides objective evaluation of projects to lenders

# Importance of feasibility study

- ▣ Understanding demand
- ▣ Assessing resources
- ▣ Marketing feasibility
- ▣ Marking timelines



# METHODS AND TECHNIQUES

# Types

Evaluation  
techniques

```
graph TD; A[Evaluation techniques] --> B[Traditional (ARR, PBP)]; A --> C[Discounted cashflow (NPV, IRR, P...)]
```

Traditional  
(ARR, PBP)

Discounted  
cashflow  
(NPV, IRR, P...)



## Accounting rate of return (ARR)

$$= \frac{\text{Average annual profit after tax}}{\text{Average investment over project life}} * 100$$

$$= \frac{\text{Total profit/no of years}}{\text{Net WC+ Salvage value+ } \frac{1}{2} (\text{initial cost-salvage value})} * 100$$

## ARR - example

Project Cost (Rs)	56125	56125
Annual profits - 1	3375	11375
Annual profits - 2	5375	9375
Annual profits - 3	7375	7375
Annual profits - 4	9375	5375
Annual profits - 5	11375	3375
Total profits	36875	36875
Project life (yrs)	5	5
Salvage Value (Rs)	3000	3000

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Calculate ARR



## ARR

$$= \frac{\text{Total profit/no of years}}{\text{Salvage value} + \frac{1}{2} (\text{initial cost} - \text{salvage value})} * 100$$

$$= \frac{36875/5}{3000 + (56125 - 3000)1/2} = 25\%$$



## Variations of ARR

$$= \frac{\text{Average annual profit after tax}}{\text{Investment} * 1/2} * 100$$

$$= \frac{\text{Average annual profit after tax}}{\text{Investment}} * 100$$

$$= \frac{\text{Average annual PAT + Depreciation}}{\text{Investment} / 2} * 100$$

# ARR - merits and demerits

- ▣ Merits
  - Simple to understand and calculate
- ▣ Demerits
  - Accounting income and not cash income
  - Time value of money not taken

## Payback period

- ▣ PBP refers to the time it takes to payback the original cost of the investment
- ▣ Represented as no of years
- ▣ Usually a cut-off is used to accept/reject a proposal
- ▣ Useful in mutually exclusive decision making





## PBP – an example

Investment = Rs 56125

Year	Annual cash flow (Rs.)	Cum. cash flow (Rs.)	Comments
1	14000	14000	No
2	16000	30000	No
3	18000	48000	No
4	20000	68000	Between years.
5	20000+5000 (including salvage value)	93000	$56125 - 48000 = 8125$ $8125 / 20000 = 0.406$ PBP = 3.406

## PBP- merits and demerits

- ▣ Merits
  - Easy to understand and calculate
  - Cash flow is considered
- ▣ Demerits
  - Ignores cash flow after PBP/frontloading
  - Ignores time value of money

## PBP review

- ▣ Useful for:
  - War situations
  - Liquidity crunch situations
  - Short term focused companies
  
- ▣ We need a system that considers
  - Full cash flow
  - Time value of money

## Time value of money

- Money has utility
- Utility has a cost
- Cost of money is called interest, linked to
- $\text{Future value} = \text{Present value} + \text{interest}$   
 $= \text{Present value} (1+r)^n$
- $\text{Present value} = \text{Future value} / (1+r)^n$
- Compounding and discounting techniques



## FV and PV - example

1. What is the FV of Rs 1000 in 3 yrs at 10% compounding rate?

$$1000 * (1.1)^3 = 1000 * 1.331 = \text{Rs } 1331$$

2. What is the present value of Rs 1610 of year 5 at 10% discounting rate?

$$1610 * (1/1.1)^5 = 1610 * 0.6211 = \text{Rs } 1000$$

## PV of a cash flow

- ▣ Present value of a cash flow is cumulative of individual years.
- ▣  $PV \text{ of year1} + PV \text{ of year2} + PV \text{ of year3} + \dots + PV \text{ of year } n$
- ▣  $PV = \sum [CF_n / (1+r)^n]$



## Discounted cashflow method

- ▣ Net Present Value (NPV)
- ▣ NPV indicates the PV of future cash flow  
Investment
- ▣  $NPV = \sum [CF_n / (1+r)^n] - C_0$
- ▣ Accept if NPV is +ve, Reject if NPV is -ve

## Merits of NPV method

- ▣ Takes into account time value of money
- ▣ Takes into account lifetime cash flow
- ▣ Allows for different discount rates
- ▣ Helps evaluate mutually exclusive projects



## Demerits of NPV method

- ▣ Depends on discount rate which itself is not clear
- ▣ Absolute measure and not a percentage of capital



## Discounted cashflow method

- ▣ Internal rate of return (IRR)
- ▣ Discounting rate of a future cashflow at which becomes zero.
- ▣ 'r' such that  $\sum [CF_n / (1+r)^n] - C_0 = 0$
- ▣ Decision based on a cut-off 'r'
- ▣ Calculation by trial and error method or using sheet =IRR(A1:A5,guess rate)

## Discounted cashflow method

- ▣ Profitability Index (PI) or Benefit/cost ratio
- ▣  $PI = PV \text{ of inflow} / \text{Outflow}$
- ▣  $PI = = \Sigma [CF_n / (1+r)^n] / C_0$
- ▣ Similar to NPV but presented as a ratio



## Cap budgeting practices in India

- ▣ DCF is more popular
- ▣ Multiple criteria used for decision making
- ▣ IRR is used by 85%, NPV by 65%
- ▣ 68% use PBP usually small firms
- ▣ PI is used more by public sector units

## Exercise -1

- ▣ A company has the following investment projects

Project	Co	C1	C2	C3
A	-10000	10000		
B	-10000	7500	7500	
C	-10000	2000	4000	12000
D	-10000	10000	3000	3000

Calculate payback, ARR, IRR and NPV at 10% discount rate and rank them



## Payback

A.  $10000/10000$  in 1 year

B.  $10000/7500$  in 1 yr +  $2500/7500 = 1/3$   
total = 1.33 years

C.  $10000/6000$  in 2 yrs +  $4000/12000$   
 $= 1/3$  yrs  
total = 2.33 yrs

D.  $10000/10000$  in 1 year



## ARR

A. 
$$\frac{10000/1}{10000*1/2} * 100 = 200\%$$

B. 
$$\frac{15000/2}{10000*1/2} * 100 = 150\%$$

C. 
$$\frac{18000/3}{10000*1/2} * 100 = 120\%$$

D. 
$$\frac{16000/3}{10000*1/2} * 100 = 107\%$$

ARR = Average PAT /  $\frac{1}{2}$  Investment

## NPV

$$NPV = \Sigma [CF_n / (1+r)^n] - C_0$$

A.  $(10000 * 0.909) - 10000 = (910)$

B.  $(7500 * 0.909) + (7500 * 0.826) - 10000 = 3013$

C.  $(2000 * 0.909) + (4000 * 0.826) + (12000 * 0.751) - 10000$   
**4134**

D.  $(10000 * 0.909) + (3000 * 0.826) + (3000 * 0.751) - 10000$   
**3821**



IRR

- By trial and error method,

- A. 0%
- B. 32%
- C. 27%
- D. 37%

## Summary

	ARR (%)	PBP (Yrs.)	NPV (Rs.)	IR
A	200	1	(910)	0
B	150	1.33	3013	32
C	120	2.33	4134	27
D	107	1	3821	37
<a href="http://www.FirstRanker.com">www.FirstRanker.com</a>				

# LEARNINGS

## Discussion

ARR is misleading

PBP of A and D is same but IRR different

Higher NPV has lower IRR (C and B)



THANK YOU

## Methods and techniques

### Non-discounting techniques

- ▣ Payback period (PBP)
- ▣ Return on investment (ROI)

### Discounting techniques:

- ▣ Net Present Value (NPV)
- ▣ Rate of return/Internal rate of return (IRR)
- ▣ Profitability Index (PI)





## Pay back period(PBP)

- Number of years required for the project's cumulative cash inflows to equal its cash outflows. It is time required to recover in cost of project or time taken to break even



# Advantages of PBP

- ▣ Simple in concept and application
- ▣ Low calculation cost
- ▣ Liquidity indicator
- ▣ Suits high risk of obsolescence

## Disadvantages of PBP

- ❑ Ignores cash inflows after PBP
- ❑ Ignores time value of money
- ❑ Ignores salvage value
- ❑ It is more a method of capital recovery than profitability.



## Average rate of return (ARR)

- ▣ Capital employed and related income is determined over the entire economic life project and average yield is calculated
- 1.  $\text{ROI/ARR} = (\text{annual average net earnings} / \text{original investment}) * 100$
- 2.  $\text{ROI/ARR} = (\text{annual average net earnings} / \text{average investment}) * 100$
- Annual average net earnings is after depreciation and tax for full economic life

## Average rate of return (ARR)

3. *(Increase in expected future annual net earnings/initial increase in required investment)\*100*

Average investment =

1. *Original investment/2*

2. *(Original investment-scrap value of asset)/2*

3. *(original investment+scrap value of asset)/2*

4. *(Original investment-scrap value of asset/2)+  
net working capital+scrap value*

# Advantages of ARR

- ▣ Easy to calculate
- ▣ Considers entire cashflows
- ▣ Based on accounting profit

## Disadvantages of ARR

- ❑ Ignores time value of money
- ❑ Cost and future inflow cant be accurately estimated
- ❑ Ignores project period (short term higher gets preferred)
- ❑ Unsuitable for investment in parts (assumes full investment in the beginning)



# NET PRESENT VALUE (NPV)

## Net Present Value (NPV)

- ▣ Considers time value of money
- ▣ PV for all outflows and inflows for the entire duration is discounted by cost of capital and NPV calculated
- ▣ 
$$\begin{aligned} \text{NPV} &= \text{PV of each inflow} - \text{initial investment} \\ &= \text{CUM} (CF_t / (1+k)^t) - CF_0 \\ &= \text{CUM} (CF_t * PVF_{k,t}) - CF_0 \end{aligned}$$



# Advantages of NPV meth

- ▣ Recognises time value of money
- ▣ All cash flows considered
- ▣ Achievement of Profitability objective
- ▣ Value additivity achieved



# Disadvantage of NPV method

- ❑ Difficult to understand
- ❑ Ignores project period and investment size
- ❑ Discount rate is tough to decide



# PROFITABILITY INDEX (PI) BENEFIT-COST RATIO (BCR)

# Profitability Index

- ▣  $PI = PV \text{ of cash inflows} / PV \text{ of cash outflow}$
- ▣  $PI(\text{net}) = \text{Net Present Value} / \text{Initial cash cost}$
- ▣  $\text{Net PI} = PI - 1$
  
- ▣ Project is accepted if  $PI > 1$
- ▣ Projects are ranked in order of PI



# Advantages of PI

- ▣ Easy to understand
- ▣ Time value of money taken
- ▣ Uses cash flow method
- ▣ Consistent with objective to maximise shareholders' wealth



# Disadvantages of PI

- ❑ Doesn't consider project duration
- ❑ Cost of capital is estimated
- ❑ Requires long term forecasts



# INTERNAL RATE OF RETURN (IRR)

# Internal Rate of Return (IRR)

- ▣ Another DCF method, also called rate of time adjusted rate of return, yield on investment, marginal efficiency of capital, marginal productivity of capital, etc.
- ▣ Rate of return is internal to the proposal based on outlay and cash flows unlike NPV-which is external based on cost of capital.
- ▣ IRR is discount rate which equates aggregate PV of net cash inflows with aggregate of cash outflows. It is the rate at which NPV

## Advantages of IRR

- ▣ Recognises time value of money
- ▣ Easy to understand
- ▣ Indicates profitability.
- ▣ Consistent with overall objective of shareholders' wealth maximisation.

# Disadvantages of IRR

- ▣ Tedious calculation
- ▣ Multiple rates
- ▣ Inconsistent in maximising shareholders' wealth
- ▣ Reinvestment of cash flows
- ▣ Ignore rupees of NPV





# Types of feasibility study

- ▣ Economic feasibility
- ▣ Technical feasibility
- ▣ Financial feasibility
- ▣ Managerial feasibility

# MODEL PROJECT REPORT