INTRODUCTION TO INNOVATION, IP MANAGEMENT & ENTREPRENEURSHIP

MGT-207

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UNIT - III

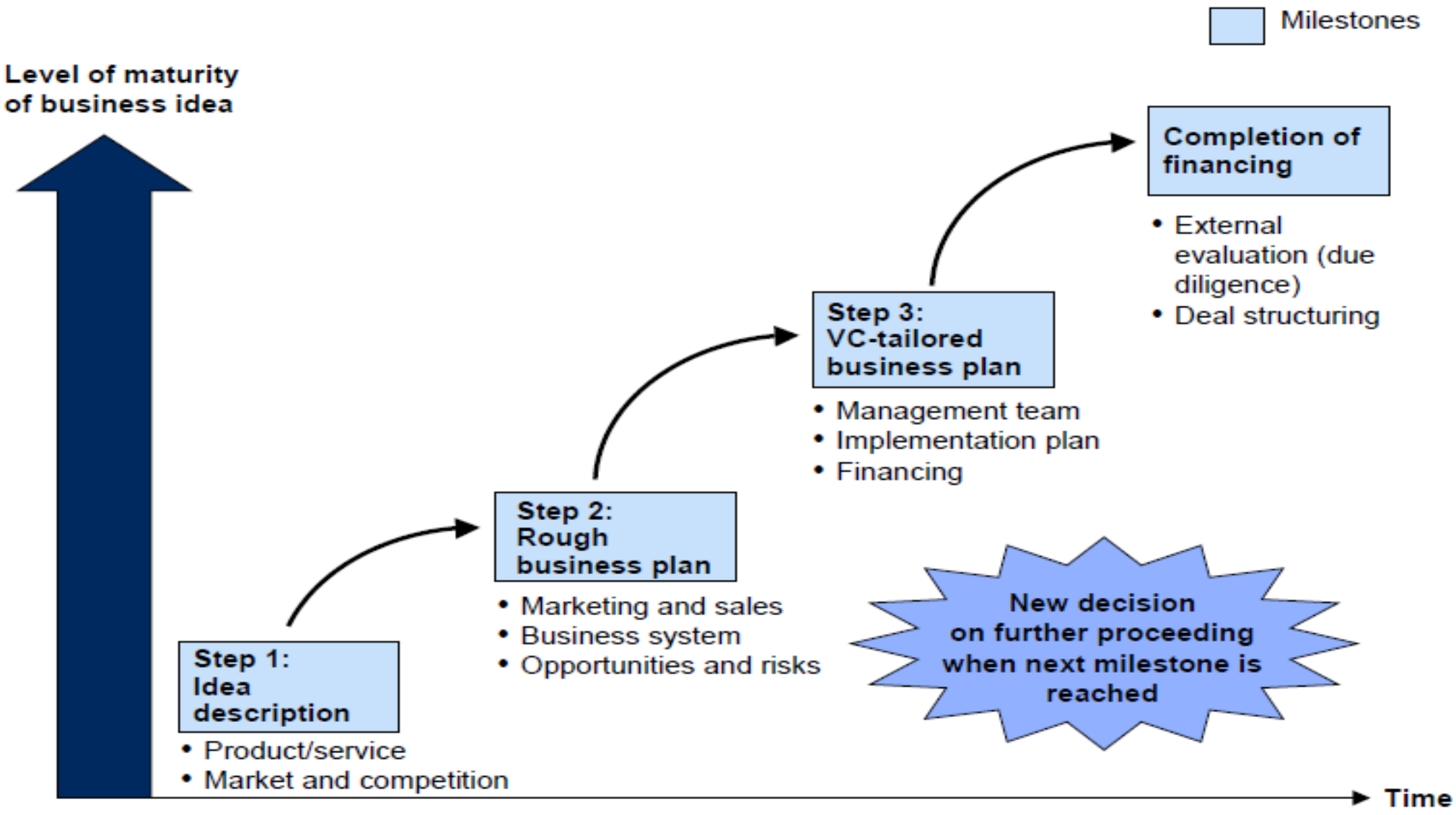
Entrepreneurship:

- Opportunity recognition and entry strategies –
- Effectuation –
- Design thinking –
- Lean Start-up –
- Developing Business Model –
- Entrepreneurship as a Style of Management – value proposition –
- Maintaining Competitive Advantage –
- Financial Plan: Start up, operating and variable costs and Project appraisal: NPV, IRR, BCR techniques –
- Projections and Valuation Stages of financing: Debt, Venture Capital and other forms of Financing.
- Entrepreneurship- Financial Planning: Break even analysis: Profit volume ratio, selling price determination, cash flow statement analysis, Ratio analysis

10 Reasons to devise a Strong Business Plan

1. To attract investors.
2. To see the performance of business idea
3. To outline each area of the business.
4. To set up milestones.
5. To learn about the market.
6. To secure additional funding or loans.
7. To determine your financial needs.
8. To attract top-level people.
9. To monitor your business.
10. To devise contingency plans.

DEVELOPMENT STEPS FOR BUSINESS PLANS



Source: McKinsey & Company

What is Business Plan?

- The business plan is a written document prepared by the entrepreneur that describes all the relevant internal and external elements and strategies for starting a new venture.
- It is a integration of functional plans such as marketing, finance, manufacturing, sales and human resources.

Who should write the plan?

- The business plan should be prepared by the entrepreneur.
- The entrepreneur may consult with many other sources in its preparation, such as lawyers, accountants, marketing consultants, and engineers.

Scope and Value of the Business Plan – Who Reads The Plans?

- The business plan may be read by employees, investors, bankers, venture capitalists, suppliers, customers, advisors, and consultants.
- There are three perspectives should be considered in preparing the plan :
  - Perspective of the entrepreneur
  - Marketing perspective
  - Investor's perspective

Scope and Value ...

- The business plan is valuable to the entrepreneur, potential investors, or even new personnel, who are trying to familiarize themselves with the venture, it goals, and objectives.
  - It helps determine the viability of the venture in a designated market
  - It provides guidance to the entrepreneur in organizing his or her planning activities
  - It serves as an important tool in helping to obtain financing.

How do Potential Lenders and Investors Evaluate The Plan?

- **Four Cs of Credit:**
  - Characters
  - Cash flow
  - Collateral
  - Equity of Contribution
- **Another …**
  - Marketable
  - Payback period
  - Risk
  - Feasibility, etc

Presenting The Plan

- It is often necessary for an entrepreneur to orally present the business plan before an audience of potential investors.
- In this typical forum the entrepreneur would be expected to provide a short (perhaps 20-minutes or half-hour) presentation of the business plan.

Information Needs

- Before committing time and energy to preparing a business plan, the entrepreneur should do a quick feasibility study of the business concept to see whether there a any possible barriers to success.
- The information, obtainable from many sources should focus on marketing (segmenting, targeting, and positioning), finance (list of all possible expenditures, demand forecast, revenue), and production (location, manufacturing operations, raw materials, equipment, labor skills, space, overhead) .
- Internet can be a valuable resource.

Outline of a Business Plan

- **Introductory Page**
  - Name and address of business
  - Name(s) and address(es) of principal(s)
  - Nature of business
  - Statement of financing needed
  - Statement of confidentially of report

Outline …

- Executive Summary – Three to four pages summarizing the complete business plan
  - What is the business concept or model?
  - How is this business concept or model unique?
  - Who are the individuals starting this business?
  - How will they make money and how much?

Outline ...

- Environmental and Industry Analysis
  - Future outlook and trends
  - Analysis of competitors
  - Market segmentation
  - Industry and market forecasts
- Description of Venture
  - Product(s)
  - Service(s)
  - Size of business
  - Office equipment and personnel
  - Background of entrepreneurs

Outline ...

- Production Plan
  - Manufacturing process (amount subcontracted)
  - Physical plant
  - Machinery and equipment
  - Names of suppliers of raw materials
- Operational Plan
  - Description of company's operations
  - Flow of orders for goods and/or services
  - Technology utilization

Outline ...

- Marketing Plan
  - Pricing
  - Distribution
  - Promotion
  - Product forecasts
  - Controls

Marketing Strategies and Programs

- The marketing strategies and programs component of the marketing plan provides detailed information about the organization's planned marketing mix
- Product
- Price
- Place
- Promotion

Marketing Strategies and Programs

Proposed Product/Services

- What are you going to sell?
- What position you are going to take in the market?
  - (For example, high quality/high price or low quality low price high volume)

Marketing Strategies and Programs

Personal Promotion

- How you and your sales staff are going to promote your business?
- What level of service you are going to provide?

Marketing Strategies and Programs

Non-Personal Promotion

- How will you appeal to the public?
- What promotional plans will you use?

Organizational Plan

- Form of ownership
- Identification of partners or principal shareholders
- Authority of principals
- Management-team background
- Roles and responsibilities of members of organization

PROPOSED ORGANIZATION

Types of ownership

- Sole proprietorship
- Partnership
- Corporation, or limited liability company (LLC).

There's no one choice that fits every business; your job is to pick the form that best meets your needs

Outline ...

- Assessment of Risk
  - Evaluate weakness of business
  - New technologies
  - Contingency Plans
- Financial Plan
  - Pro forma income statement
  - Cash flow projections
  - Pro forma balance sheet
  - Break-even analysis
  - Sources and applications of funds

Financial Plan

The financial plans section of the marketing plan provides details on the expected expenses and profits of the plan's programs.

Basically, the financial plan section of the business plan consists of three financial statements:

- The income statement
- The cash flow projection and
- The balance sheet

and a brief explanation/analysis of these three.

First, you need to gather together some of the financial data you'll need to prepare these financial statements for your business plan by examining your expenses.

Think of your business expenses as broken into two categories:

Your start up expenses and
Your operating expenses.

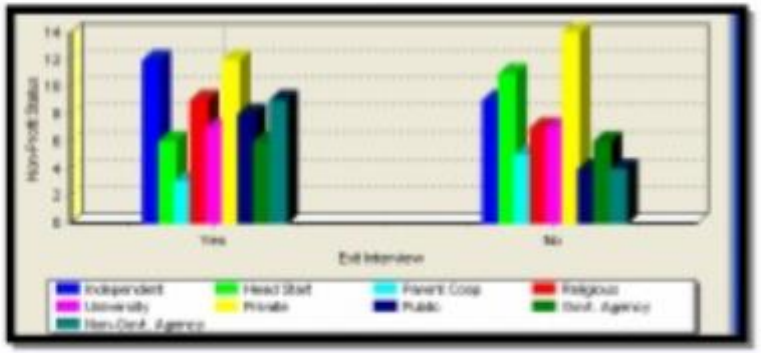
Financial Plan

Pricing Policies

- What price you are going to set?
- How much profit you think you are going to make at the price?

Financial Plan

Projected Year 1 Income Statement by month



$$$$ Financial Plan $$$$

Projected Balance Sheet

Year 1 Beginning Balance Sheet

and

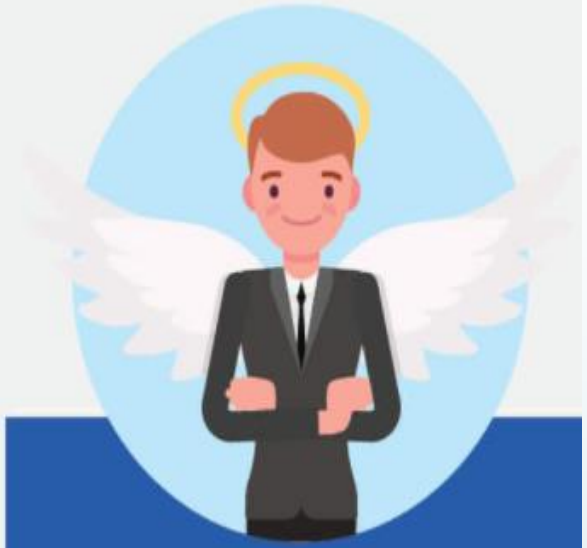
Year 1 Ending Balance Sheet

Financial Plan

Where will you go to get the money?

Financing Options

- Entrepreneur's personal resources
- Financial institutions
- Angel investors
- Unusual resources
- Venture capitalists
- Business development program
- Public offering



	Venture Capitalists	Angel Investors
Investment Amounts (average)	$11.7 million	$330,000
Return Expectations	25% – 35%	20% – 25%

Venture Capitalist

- A venture capitalist is a person or firm that invests in small companies, generally using money pooled from investment companies, large corporations, and pension funds. Typically, VCs do not use their own money to invest in companies.
- Venture capitalists tend to invest in businesses that are already established to reduce their risk of losing investments.

Angel Investor

- An angel investor is an accredited investor who uses their own money to invest in small businesses. They are required to have a minimum net worth of $1 million and an annual income of at least $200,000 to be considered an accredited investor. Many angel investors are small business owners' family and friends.
- Angel investors are more likely to invest in businesses that are just starting out. They choose businesses that they are interested in and can see becoming profitable, even if the company has not proven itself yet. Because of this, angel investors take more risks than venture capitalists.

Financial Plan

Capital Repayment Plan

- Where are you getting the money from?
- What is the interest/loan arrangement?
- How and when will you retire the debt?

Outline ...

- Appendix (contains backup material)
  - Letters
  - Market research data
  - Leases or contracts
  - Price lists from suppliers.

Using and Implementing The Business Plan

- The business plan is designed to guide the entrepreneur through the first year of operations.
- Implementation of the strategy contain control point to ascertain progress and to initiate contingency plan if necessary.
- Business plan not end up in a drawer somewhere once the financing has been attained and the business launched.

Measuring Plan Progress

- Entrepreneur should check the profit and loss statement, cash flow projections, and information on inventory, production, quality, sales, collection of accounts receivable, and disbursements for the previous month.
  - Inventory control
  - Production control
  - Quality control
  - Sales control
  - Disbursements

Updating the Plan

- The most effective business plan can become out-of-date if condition change.
- If the change are likely to affect the business plan, the entrepreneur should determine what revisions are needed.
- In this manner, the entrepreneur can maintain reasonable targets and goals and keep the new venture on a course that will increase probability of success.

Calculating the break-even

Calculating The Break-even

The break-even point in your business is the point at which your sales revenue equals your total expenses. At that point you neither make money, nor do you lose any. The break-even lets you know what it is going to take in sales just to survive. It provides a good indication of the viability of a business project.

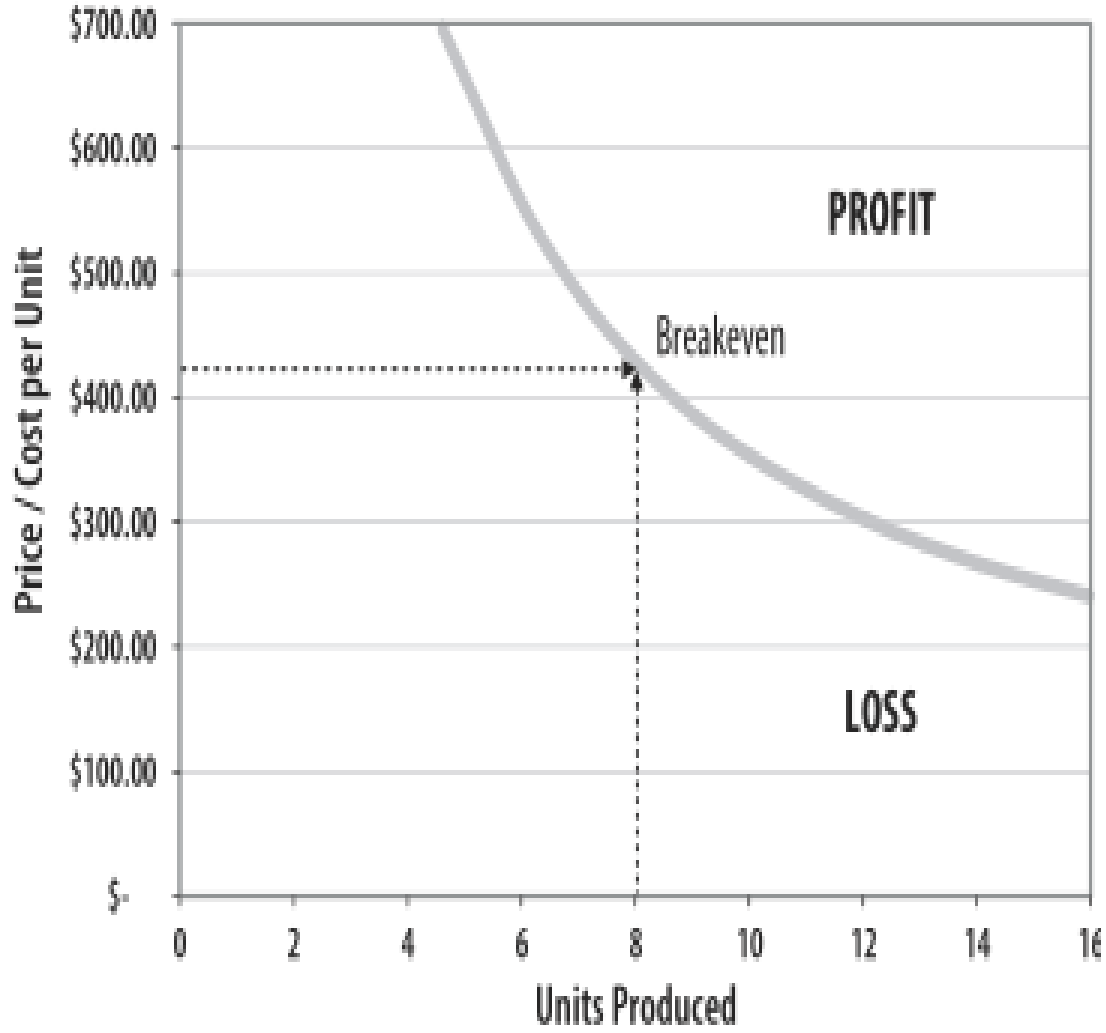
The break-even can also be used to evaluate a business expansion or any other business expenditure. You are simply asking how much additional revenue will be required to cover the additional cost. There are some key definitions necessary to determine the break-even for the business. They are:

Fixed Costs (Overhead) are costs that do not vary directly with sales. Utilities, salaries, advertising, office supplies and telephone are just a few examples. They do not have to be the same every month. What is important is that you pay them regardless of sales made.

Variable Costs (Cost of Goods) are the actual costs of making the product or providing the service. They can include materials, shipping and contract labour.

Capacity governs your output. It can be measured in units of production, billable hours, or sales volume. To calculate the break-even in units we use the following formula:

$$\frac{\textbf{Fixed Costs}}{\textbf{(Unit Price - Unit Cost)}} = \textbf{Break-even in Units}$$



The area above the line is profit and the area below the line represents loss.

Break Even with a Gross Profit Margin

Sometimes, a company does not sell products, or it sells so many different products that doing a break-even for each unit does not make sense. When this is the case, such as in a retail business, we calculate the break-even in revenue rather than in units.

This is done with the following formula:

$$\frac{\textbf{Fixed Costs}}{\textbf{Gross Margin}} = \textbf{Break-even in Units}$$

Where:

$$\frac{\textbf{(Price - Cost)}}{\textbf{Price}} = \textbf{Gross Margin}$$

Example

Sarah wants to start a retail gift store. She estimates her monthly fixed costs at $9,000 per month. She determines that the industry standard Gross Margin for a gift store is 45%. She calculates her break-even as follows:

$$\frac{\textbf{\$9,000}}{\textbf{45\%}} = \textbf{\$20,000 per month}$$

Sarah must be convinced that this location is able to sell at least $20,000 per month (or $240,000 per year) before she starts her business. Her market research, physical location, promotional plans and physical size must all support at least this level of sales capacity or the business will not work.

The break-even is a great first step in *evaluating* business opportunities. The business should make a profit, but the break-even is often the first step in determining the viability of a business idea.

The Balance Sheet

The Balance Sheet is a snap shot of the business at any point in time. In the case of a business start-up, it is often the starting balance sheet. A balance sheet is made up of three parts.

Assets: Things a business owns

Liabilities: Debts a business owes

Equity: The owners' investment and re-investment in the business

Everything that the business owns (its assets) must bepaid for; free of debt owing. Therefore we get the following formula:

Assets = Liabilities + Equity

Sample Balance Sheet

XYX COMPANY LTD.

Year Ending July 31, 2005

Assets		**Liabilities**	
Current Assets		*Current Liabilities*	
Cash	$5,000	Line of Credit	$2,000
Accounts Receivable	$10,000	Accounts Payable	$1,500
Inventory	$4,000	Wages Payable	$1,000
Pre-Paid Insurance	$1,200	Current Portion of Term Debt	$2,000
Total Current Assets	**$20,200**	**Total Current Liabilities**	**$6,500**
Capital Assets		*Non-Current liabilities*	
Macheriny & Equipment	$18,000	Term Loan	$20,000
Automobiles	$20,000	Less Current Portion	-$2,000
Leasehold Improvements	$24,000	Shareholders Loan	$30,000
Total Capital Assets	**$62,000**	**Total Non Current Liabilities**	**$48,000**
		Equity	
		Initial Investment	*$20,000*
		Retained Earnings	*$7,700*
		Total Equity	**$27,700**

How to Do a Balance Sheet for A Business Start-up

- The start-up balance sheet is simple if you know how to make and sort a list.
- You need to make two lists to get started.
- The first list is your list of Current Assets. These are assets (things your business owns) which will be used up within the first year of doing business.
- Typically they include cash, inventory and pre-paid expenses (such as pre-paid insurance).
- The second list is the Capital Assets.
- These are items you purchase with the intention of keeping them and using them to run the business.
- For example, if you purchase a vehicle to use in the business, it is a capital asset.
- If you purchase a vehicle to re-sell it, however, then that vehicle is inventory.
- Sometimes there is a third asset list. These are known as Intangible Assets and are things such as franchise fees, goodwill, quotas, licenses, patents and trademarks.
- These are not common in most business situations except where you are purchasing an existing business.

Forecasting Your Assets

A: Determine and Budget your Current Assets

Starting Cash (You must have enough to cover your start-up expenses)	$ _____
Starting Inventory	$ _____
Pre-Paid Expenses (Usually Insurance)	$ _____
Other Current Assets	$ _____
Total Current Assets (A)	**$** _____

B: Determine your Capital Asset needs.

Machinery and Equipment	$ _____
Office Furnishings, Fixturing & Other	$ _____
Automobiles	$ _____
Computers and Data Processing Equipment	$ _____
Leasehold Improvements	$ _____
Tools and other assets valued at Less than $200	$ _____
Computer Software (Excluding Systems software)	$ _____
Other Capital or Intangible Assets	$ _____
Total Capital Assets (B)	**$** _____
Your Total Assets are A + B	**$** _____

Your second step is to determine how you are going to *finance* this total. What combination of Debt and Equity will allow you to get your business started?

Forecasting your Liabilities and Equity

- Now that you have an estimate of how much you need to get started, you must determine how best to finance your business start-up.
- There are only two places this money comes from when you are starting up – loans or investment. Venture Capital for start-up businesses is exceedingly rare.
- Most businesses are financed through three sources: the owners, their suppliers and the bank!

Three sources of debt financing in a business start-up

Supplier Credit: Sometimes a supplier will provide credit to their customers.

- Usually this is for inventory, however some suppliers will provide longer term financing for equipment or automobiles.

Bank Term Loan: A bank term loan is usually used for financing the capital assets of the business.

It can sometimes be used to finance part of a business start-up or business acquisition.

The loan is repaid over a period of time, and the interest rate may be fixed or floating.

Bank Line of Credit:

This is similar to an overdraft for a business.

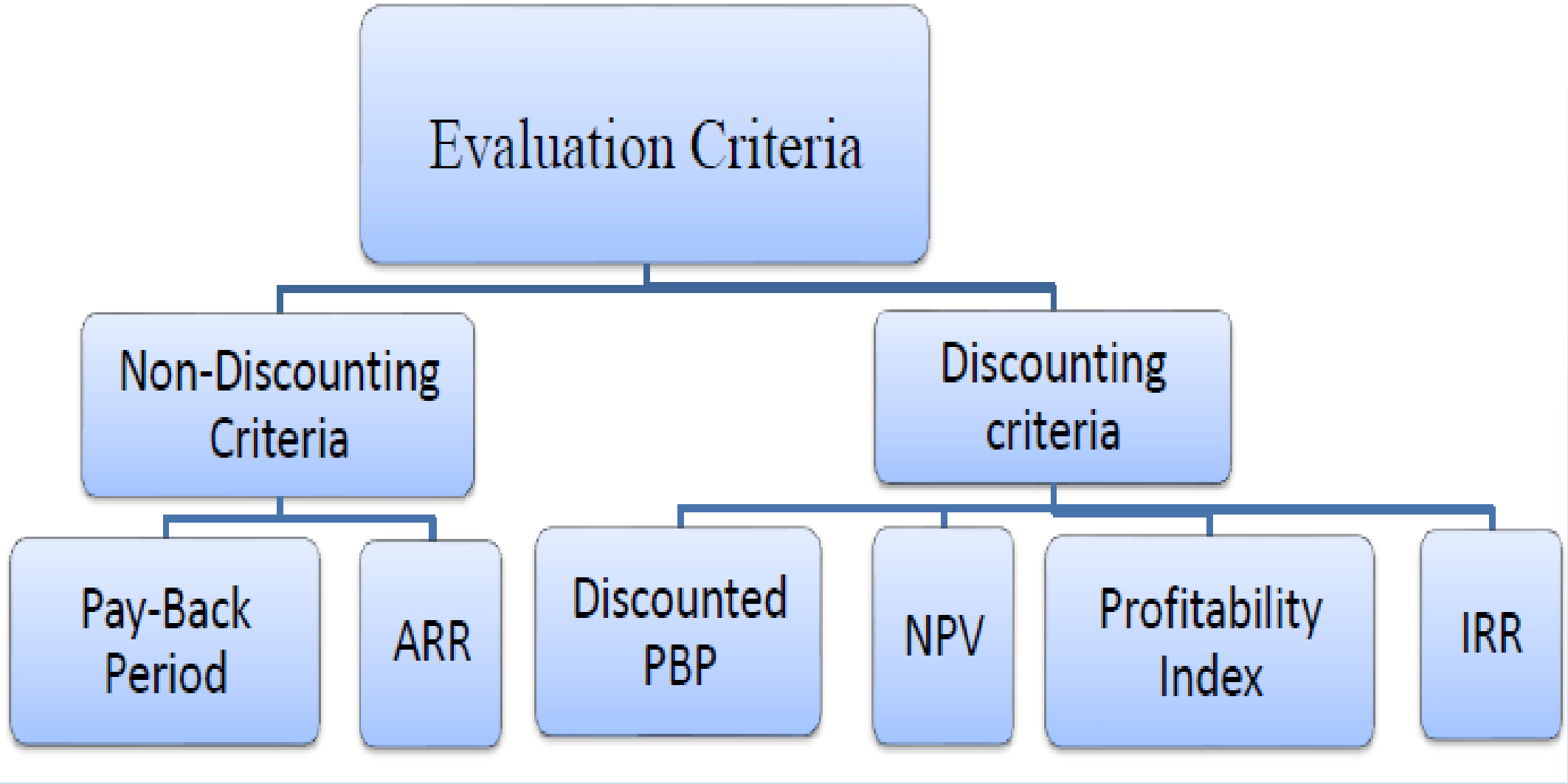
It is important to use the line of credit to finance current assets and the term loan to finance capital assets.

One sure way to have a cash flow crunch is to have used all your cash and line of credit to purchase a piece of equipment, only to run out of cash due to a late paying customer.

Capital Budgeting

- Process of analyzing projects and deciding which ones to include in capital budget.
- Capital Budgeting decisions evaluate a proposed project to forecast return from the project and determine whether return from the Project is adequate.

Evaluation Criteria



Non discounting: Pay-Back Period

1. **Pay-Back Period Method-** It is defined as the number of years required to recover original cost invested in a project. It has two conditions

- **When cash inflow is constant every year**

  PBP= Cash outflow/cash inflow (p.a.)

- **When cash inflow are not constant every year**

$$PBP = \text{Completed years} + \frac{\text{Required inflow}}{\text{In flow of next year}} * 12$$

Non discounting Criteria: Annual Rate of Return

2.Average Rate of Return Method - ARR means the average annual earning on the project. Under this method, profit after tax and depreciation is considered. The average rate of return can be calculated in the following two ways.

$$\text{ARR on Average investment} = \frac{\text{Average Profit After Tax}}{\text{Average Investment}} * 100$$

$$\text{ARR on Initial investment} = \frac{\text{Average Profit After Tax}}{\text{Initial Investment}} * 100$$

Discounting Criteria: Pay-Back Period

3. Discounted Pay-Back Period Method - In discounted pay- back period method, the cash inflows are discounted by applying the present value factors for different time periods. For this, discounted cash inflows are calculated by multiplying the P.V. factors into cash inflows.

$$\text{Dis. PBP} = \text{Completed years} + \frac{\text{Required inflow}}{\text{In flow of next year}} * 12$$

Discounting Criteria: Net Present Value

4. **Net Present Value Method:-** It is the best method for evaluation of investment proposal. This method takes into account time value of money.

NPV= PV of inflows- PV of outflows

- **Evaluation of Net Present Value Method:-** Project with the higher NPV should be selected.

Accept if	NPV>0
Reject	NPV<0
May or may not accept	NPV=0

Discounting Criteria: Profitability Index

5. Profitability Index Method - As the NPV method it is also shows that project is accepted or not. If Profitability index is higher than 1, the proposal can be accepted.

Accepted	PI>1
Rejected	PI<1

$$\text{Profitability index} = \frac{\text{Total Cash Inflows}}{\text{Total Cash Outflows}}$$

Benefit-Cost Ratio

The benefit-cost ratio is a ratio calculated by dividing the sum of discounted benefits by discounted costs. Steps for calculating the benefit-cost ratio are:

$$\text{Benefit} - \text{Cost Ratio} = \frac{\text{Sum of Discounted Benefits}}{\text{Sum of Discounted Costs}}$$

Step 1. Estimate the cash inflows and outflows on a year-to-year basis

Step 2. Find out for individual years the discount value of 1 at the given discount rate.

Step 3. Multiply the cash inflows and cash outflows for each year by the corresponding discount factor.

Step 4 Add up the discounted values of cash inflows and outflows separately.

Step 5. Divide the discounted values of cash inflows by cash outflows to obtain the benefit-cost ratio.

The computation of benefit-cost ratio is shown in Table 4.

Table 4 :Computing the benefit-cost ratio

Year	Costs (outflows)	Benefits (inflows)	Discount Factor at 8%	Discounted Values	
				Costs	Benefits
	Step 1		Step 2	Steps 3 and 4	
0	250	0	1	250	0
1	250	290	0.93	232.5	269.7
2	250	290	0.86	215	249.4
3	255	300	0.76	193.8	228
4	260	335	0.73	189.8	244.55
5	260	335	0.68	176.8	227.8
6	260	335	0.63	163.8	211.05
			Total	1421.7	1430.5

Step 5: Benefit Cost Ratio= 1430.5/1421.7 = 1.00619

The benefit-cost ratio in the above example is greater than 1, indicating that the sum of the discounted benefits is greater than the sum of the discounted costs. If the ratio has been less than 1, as indeed it is at 12 percent discount rate, it would not be advisable to accept the project. Also, as in the case of the NPV, the higher the benefit-cost ratio of a project, the better it is in terms of profitability.

Ratio-analysis

- Ratio analysis is indispensable part of interpretation of results revealed by the financial statements.
- It provides users with crucial financial information and points out the areas which require investigation.
- Ratio analysis is a technique which involves regrouping of data by application of arithmetical relationships, though its interpretation is a complex matter.
- It requires a fine understanding of the way and the rules used for preparing financial statements

Types of Ratios

1. *Liquidity Ratios:* To meet its commitments, business needs liquid funds. The ability of the business to pay the amount due to stakeholders as and when it is due is known as liquidity, and the ratios calculated to measure it are known as 'Liquidity Ratios'. These are essentially short-term in nature.
2. *Solvency Ratios:* Solvency of business is determined by its ability to meet its contractual obligations towards stakeholders, particularly towards external stakeholders, and the ratios calculated to measure solvency position are known as 'Solvency Ratios'. These are essentially long-term in nature.
3. *Activity (or Turnover) Ratios:* This refers to the ratios that are calculated for measuring the efficiency of operations of business based on effective utilisation of resources. Hence, these are also known as 'Efficiency Ratios'.
4. *Profitability Ratios:* It refers to the analysis of profits in relation to revenue from operations or funds (or assets) employed in the business and the ratios calculated to meet this objective are known as 'Profitability Ratios'.

Liquidity Ratios

Current Ratio

Current ratio is the proportion of current assets to current liabilities. It is expressed as follows:

$$\text{Current Ratio} = \text{Current Assets} : \text{Current Liabilities or } \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets include current investments, inventories, trade receivables (debtors and bills receivables), cash and cash equivalents, short-term loans and advances and other current assets such as prepaid expenses, advance tax and accrued income, etc.

Current liabilities include short-term borrowings, trade payables (creditors and bills payables), other current liabilities and short-term provisions.

Normally, it is safe to have this ratio within the range of 2:1.

Quick Ratio:

It is the ratio of quick (or liquid) asset to current liabilities. It is expressed as

$$\text{Quick ratio} = \text{Quick Assets} : \text{Current Liabilities} \quad \text{or} \quad \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

The quick assets are defined as those assets which are quickly convertible into cash. While calculating quick assets we exclude the inventories at the end and other current assets such as prepaid expenses, advance tax, etc., from the current assets. Because of exclusion of non-liquid current assets it is considered better than current ratio as a measure of liquidity position of the business. It is calculated to serve as a supplementary check on liquidity position of the business and is therefore, also known as 'Acid-Test Ratio'.

Significance: The ratio provides a measure of the capacity of the business to meet its short-term obligations without any flaw. Normally, it is advocated to be safe to have a ratio of 1:1 as unnecessarily low ratio will be very risky and a high ratio suggests unnecessarily deployment of resources in otherwise less profitable short-term investments.

Solvency Ratios

- Solvency ratios are calculated to determine the ability of the business to service its debt in the long run.
- The following ratios are normally computed for evaluating solvency of the business.
- 1. Debt-Equity Ratio;
- 2. Debt to Capital Employed Ratio;
- 3. Proprietary Ratio;
- 4. Total Assets to Debt Ratio;
- 5. Interest Coverage Ratio.

Debt-Equity Ratio:

- Debt-Equity Ratio measures the relationship between long-term debt and equity.
- If debt component of the total long-term funds employed is small, outsiders feel more secure.
- Normally, it is considered to be safe if debt equity ratio is 2 : 1.

$$\text{Debt-Equity Ratio} = \frac{\text{Long – term Debts}}{\text{Shareholders' Funds}}$$

Debt to Capital Employed Ratio

The Debt to capital employed ratio refers to the ratio of long-term debt to the total of external and internal funds (capital employed or net assets). It is computed as follows:

Debt to Capital Employed Ratio = Long-term Debt/Capital Employed (or Net Assets)

$$\text{Debt to Capital Employed Ratio} = \frac{\text{Total Debts}}{\text{Total Assets}}$$

- **Proprietary Ratio:**
- **Proprietary ratio expresses relationship of proprietor's (shareholders) funds to net assets and is calculated as follows**
- Proprietary Ratio = Shareholders, Funds/Capital employed (or net assets)

Total Assets to Debt Ratio

This ratio measures the extent of the coverage of long-term debts by assets. It is calculated as

Total assets to Debt Ratio = Total assets/Long-term debts

The higher ratio indicates that assets have been mainly financed by owners funds and the long-term loans is adequately covered by assets.

- **Interest Coverage Ratio:**
- It is a ratio which deals with the servicing of interest on loan.
- It is a measure of security of interest payable on long-term debts.
- It expresses the relationship between profits available for payment of interest and the amount of interest payable.

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Interest on long-term debts}}$$

Significance: It reveals the number of times interest on long-term debts is covered by the profits available for interest. A higher ratio ensures safety of interest on debts.

Activity (or Turnover) Ratio

- These ratios indicate the speed at which, activities of the business are being performed.
- The activity ratios express the number of times assets employed, or, for that matter, any constituent of assets, is turned into sales during an accounting period.
- Higher turnover ratio means better utilisation of assets and signifies improved efficiency and profitability, and as such are known as efficiency ratios.

The important activity ratios calculated under this category are

- 1. Inventory Turnover;
- 2. Trade receivable Turnover;
- 3. Trade payable Turnover;
- 4. Investment (Net assets) Turnover
- 5. Fixed assets Turnover; and
- 6. Working capital Turnover.

Inventory Turnover Ratio

- It determines the number of times inventory is converted into revenue from operations during the accounting period under consideration.
- It expresses the relationship between the cost of revenue from operations and average inventory.
- The formula for its calculation is as follows:

Inventory Turnover Ratio = Cost of Revenue from Operations / Average Inventory

Trade Receivables Turnover Ratio

- It expresses the relationship between credit revenue from operations and trade
- receivable. It is calculated as follows :
- Trade Receivable Turnover ratio = Net Credit Revenue from Operations/Average TradeReceivable
- Where Average Trade Receivable =
- (Opening Debtors and Bills Receivable + Closing Debtors and Bills Receivable)/2

Trade Payable Turnover Ratio

- Trade payables turnover ratio indicates the pattern of payment of trade payable.
- As trade payable arise on account of credit purchases, it expresses relationship
- between credit purchases and trade payable.
- It is calculated as follows:
- Trade Payables Turnover ratio = Net Credit purchases/Average trade payable
- Where Average Trade Payable = (Opening Creditors and Bills Payable + Closing Creditors and Bills Payable)/2

Net Assets or Capital Employed Turnover Ratio

- It reflects relationship between revenue from operations and net assets (capital employed) in the business. Higher turnover means better activity and profitability.
- It is calculated as follows :
- Net Assets or Capital Employed Turnover ratio =
- Revenue from Operation/Capital Employed
- Capital employed turnover ratio which studies turnover of capital employed (or Net Assets) is analysed further by following two turnover ratios :

(a) **Fixed Assets Turnover Ratio** : It is computed as follows:

- Fixed asset turnover Ratio =Net Revenue from Operation/Net Fixed Assets

- **(b) Working Capital Turnover Ratio :**
- **It is calculated as follows :**
- **Working Capital Turnover Ratio =**
- **Net Revenue from Operation/Working Capital**

Profitability Ratios

- 1. Gross profit ratio
- 2. Operating ratio
- 3. Operating profit ratio
- 4. Net profit ratio
- 5. Return on Investment (ROI) or Return on Capital Employed (ROCE)

Gross Profit Ratio

- Gross profit ratio as a percentage of revenue from operations is computed to
- have an idea about gross margin. It is computed as follows:
- Gross Profit Ratio = Gross Profit/Net Revenue of Operations × 100

Operating Ratio

- It is computed to analyse cost of operation in relation to revenue from operations.
- It is calculated as follows:
- Operating Ratio = (Cost of Revenue from Operations + Operating Expenses)/Net Revenue from Operations × 100
- Operating expenses include office expenses, administrative expenses, selling expenses, distribution expenses, depreciation and employee benefit expenses etc.
- Cost of operation is determined by excluding non-operating incomes and expenses such as loss on sale of assets, interest paid, dividend received, loss by fire, speculation gain and so on.

Operating Profit Ratio

- It is calculated to reveal operating margin.
- It may be computed directly or as a residual of operating ratio.
- Operating Profit Ratio = 100 – Operating Ratio
- Alternatively, it is calculated as under:
- Operating Profit Ratio = Operating Profit/ Revenue from Operations × 100
- Where Operating Profit = Revenue from Operations – Operating Cost

Net Profit Ratio

- Net profit ratio is based on all inclusive concept of profit. It relates revenue from
- operations to net profit after operational as well as non-operational expenses and incomes. It is calculated as under:
- Net Profit Ratio = Net profit/Revenue from Operations × 100
- Generally, net profit refers to profit after tax (PAT).

Return on Capital Employed or Investment

- It explains the overall utilisation of funds by a business enterprise.
- Capital employed means the long-term funds employed in the business and includes shareholders' funds, debentures and long-term loans.
- Alternatively, capital employed may be taken as the total of non-current assets and working capital.
- Profit refers to the Profit Before Interest and Tax (PBIT) for computation of this ratio.
- Thus, it is computed as follows:
- Return on Investment (or Capital Employed) = Profit before Interest and Tax/Capital Employed × 100