



CHAPTER 3

VALUE BASED MANAGEMENT

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SYLLABUS

- Introduction to Value Based Management-Marakon Approach, Alcar Approach, Mc Kinsey Approach, Stern-Stewart Approach (EVA Method) and BCG Approach. Performance Measurement and Analysis. Balanced Scorecard.



OBJECTIVES OF FINANCIAL MANAGEMENT

- PROFIT MAXIMISATION
- WEALTH MAXIMISATION
- FREDRICK WINSLOW , 1911, “In the past, man was first. In the future, the system will be first”.



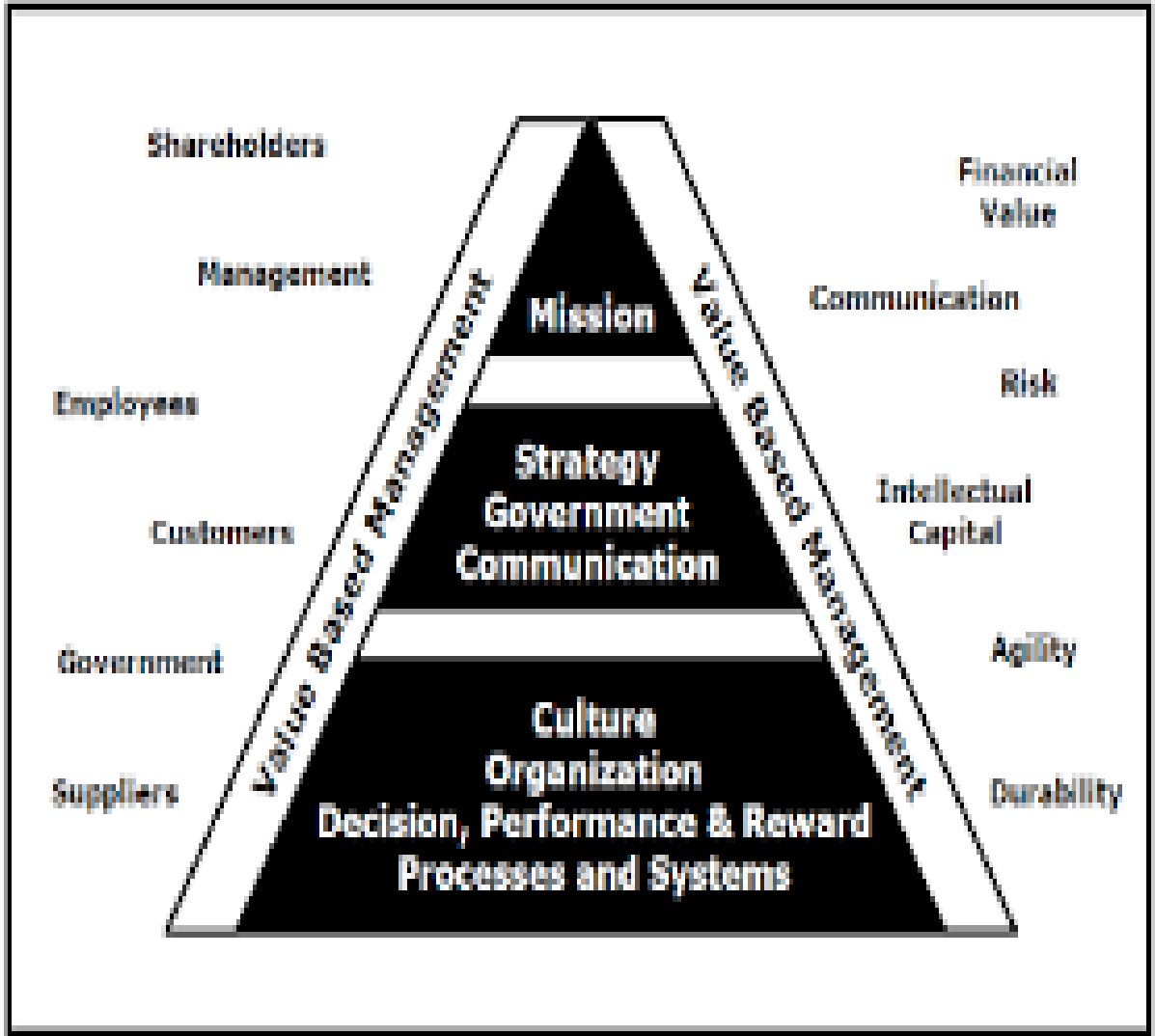


MEANING

- ▶ Value Based Management (VBM) is the **management philosophy and approach that enables and supports maximum value creation in organizations**, typically the maximization of shareholder value. VBM encompasses the processes for creating, managing, and measuring value.
- ▶ **Value Based Management** aligns a company's overall aspirations, analytical techniques, and management processes with the key drivers of value.

DEFINITIONS

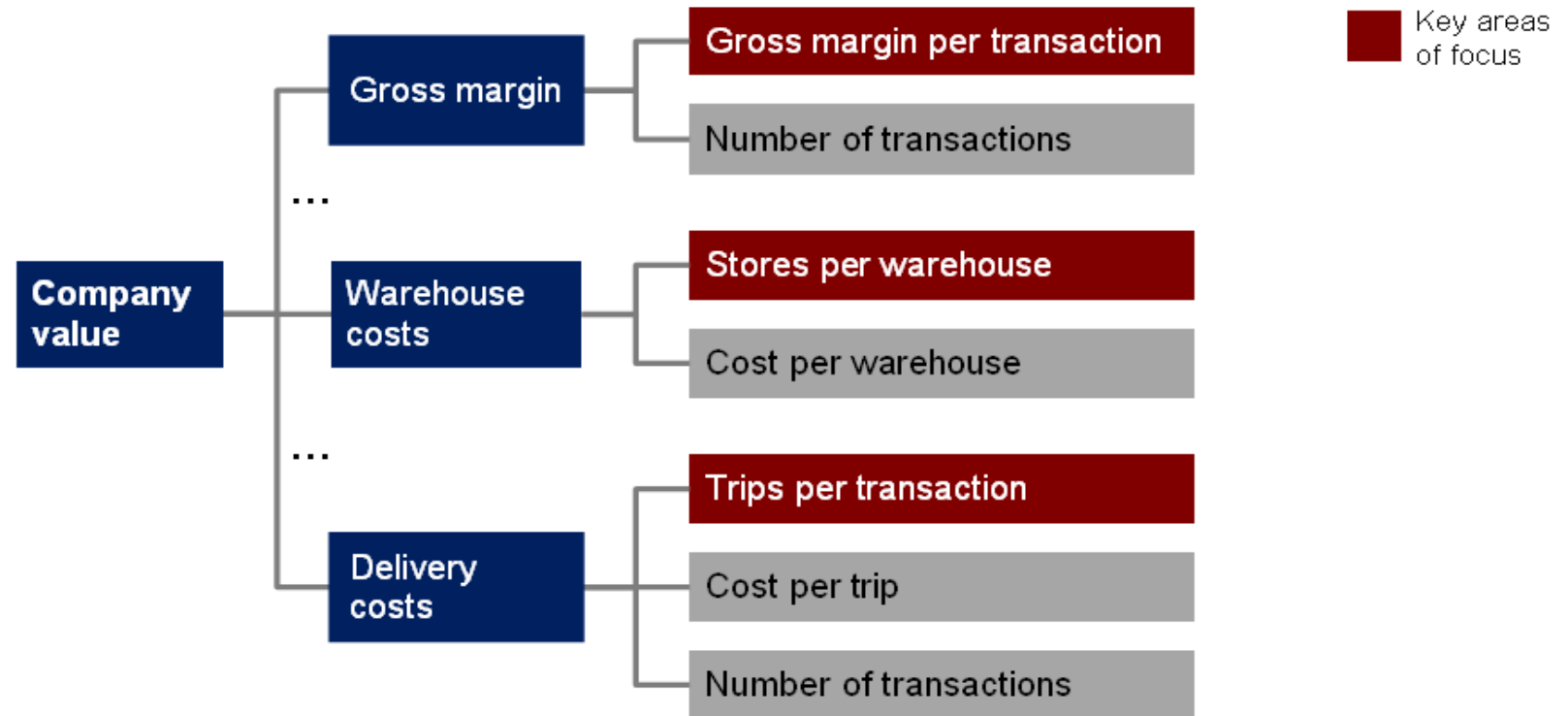
- ▶ KPMG consulting defines *“Value based management is a management approach which puts shareholder value creation at the center of the company philosophy. The maximization of shareholder value directs company’s strategies, structures and processes; it governs executive remuneration and dictates what measures are used to monitor performance”*.
- ▶ Armitage and Fog defines *“VBM is a term that describes management philosophy based on managing a firm with economic value creation principles”*.



Let's first look at a basic example of Value Drivers definition



Value Drivers Example – Hard Goods Retailer



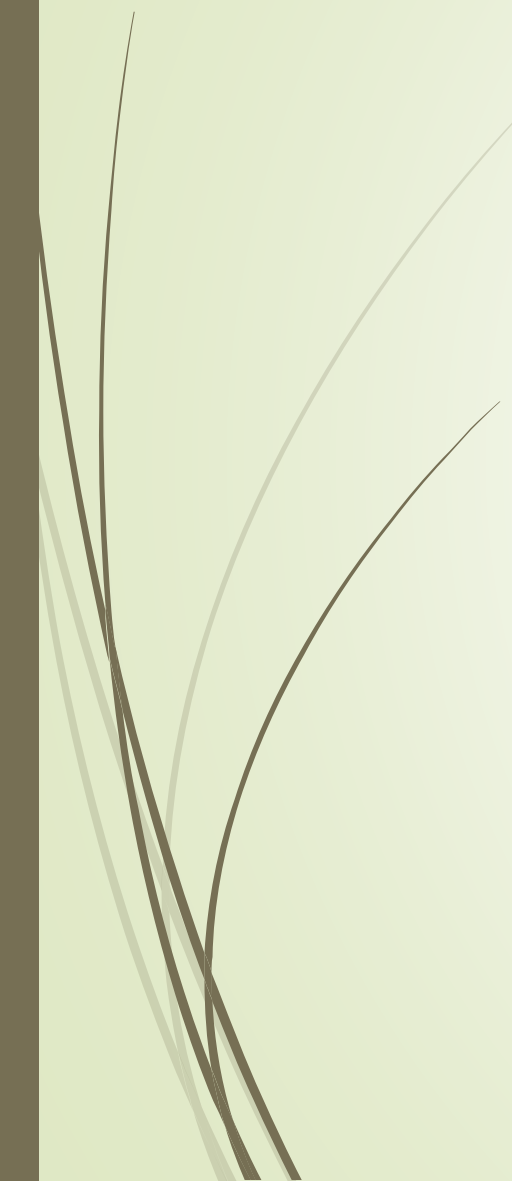
Key areas of focus are not fixed—they must be regularly reviewed.

THE THREE ELEMENTS OF VALUE BASED MANAGEMENT

- ▶ **Creating Value.** How the company can increase or generate maximum future value.
More or less equal to strategy.
- ▶ **Managing for Value.** Governance, change management, organizational culture, communication, leadership.
- ▶ **Measuring Value.** Value Based Management is dependent on the corporate purpose and the corporate values. The corporate purpose can either be economic (Shareholder Value) or can also aim at other constituents directly (Stakeholder Value)

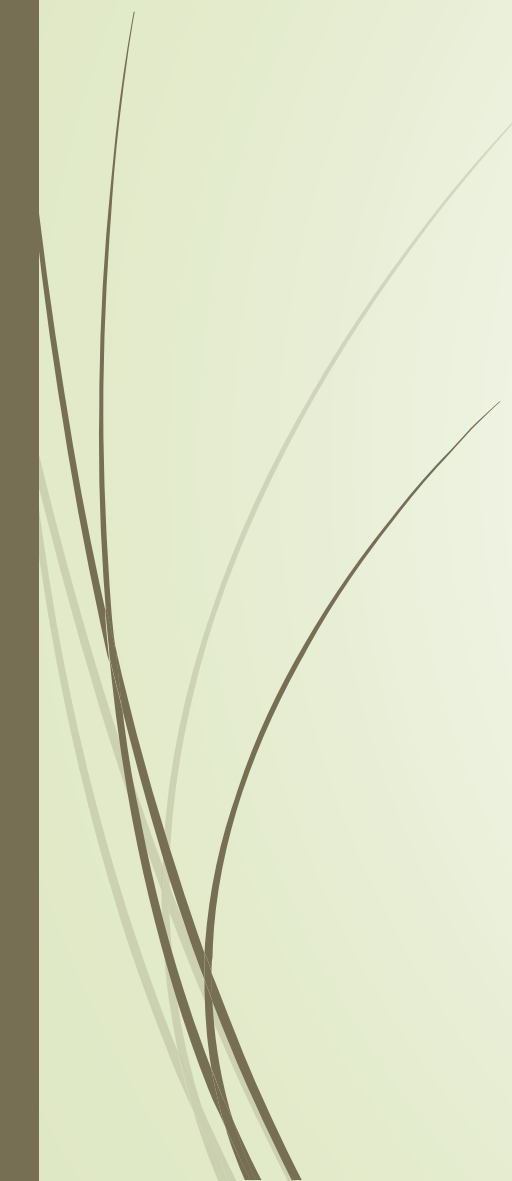


FEATURES OF VBM

- Shareholder value maximization
 - Approach
 - Management
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NEED FOR VBM

- Shift in management objectives
 - Change in performance evaluation of senior executives
 - Executive need new skills and new tools
 - Concentration on improving operational process
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BENEFITS OF VBM

- Elimination of wastes, errors and duplication of systems
- Balancing short term, mid term and long term goals
- Setting effective targets for compensation
- Aligning the interest of top managers with the interests of shareholders as well as stakeholders
- Continuous improvement
- Increases corporate transparency
- Selling products easily (more value)
- Planning and budgeting
- Improvement of efficiency
- Preventing takeovers, restructuring, LBOs

STEPS IN VALUE BASED MANAGEMENT



APPROACHES TO PRACTICE VBM

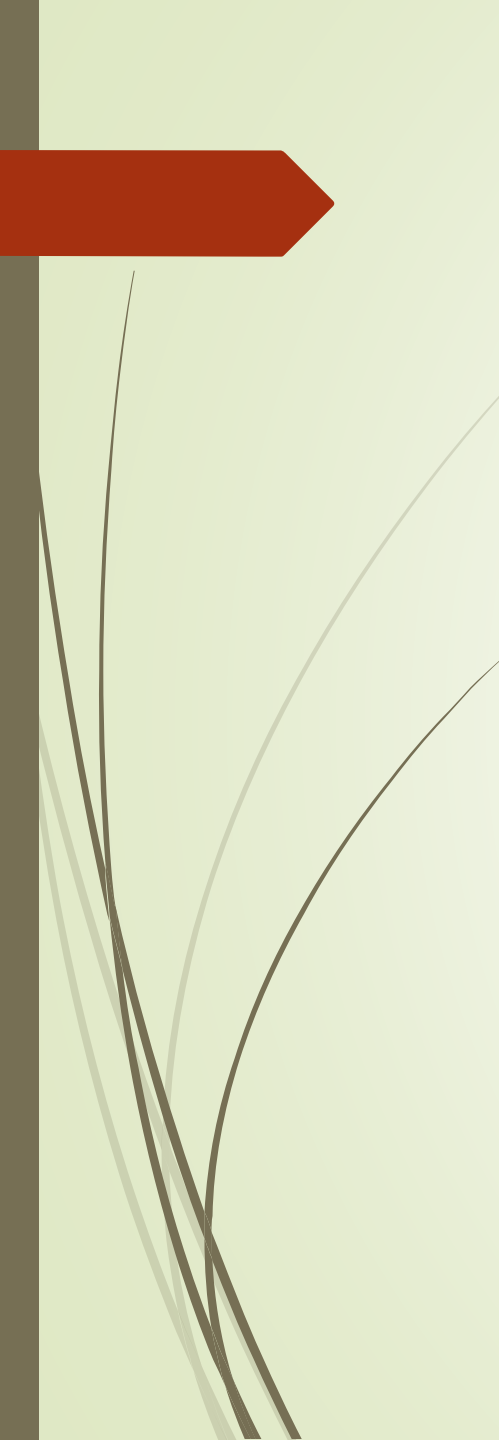
- MARAKON APPROACH
- ALKAR APPROACH
- MCKINSEY APPROACH
- STERN-STEWART APPROACH OR ECONOMIC VALUE ADDED (EVA)
- BCG (BOSTON CONSULTING GROUP) APPROACH

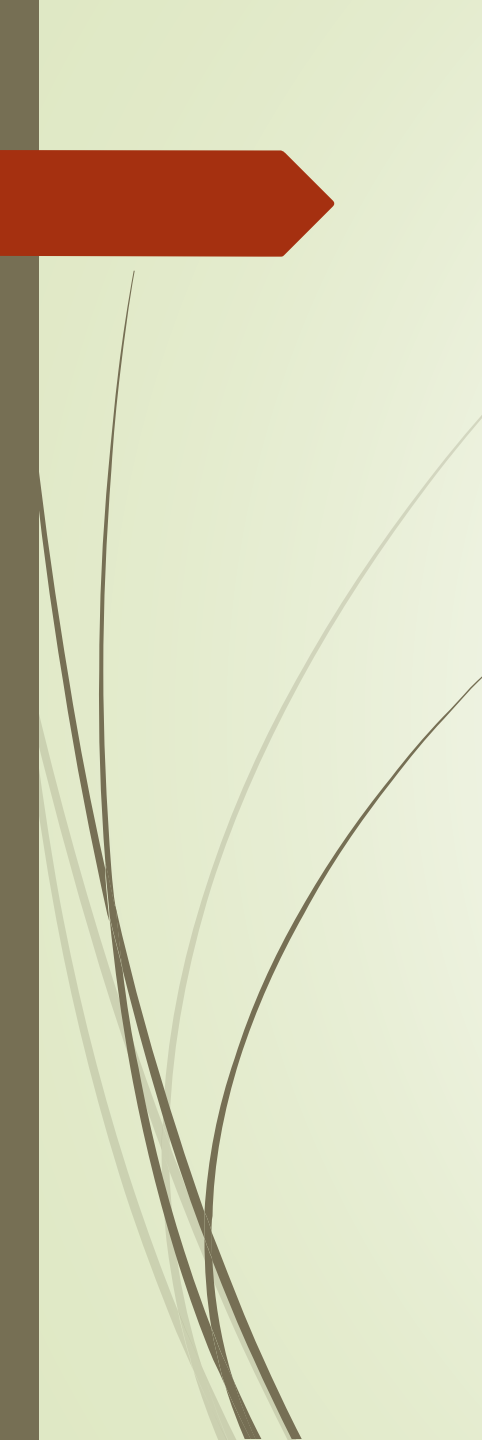




MARAKON APPROACH

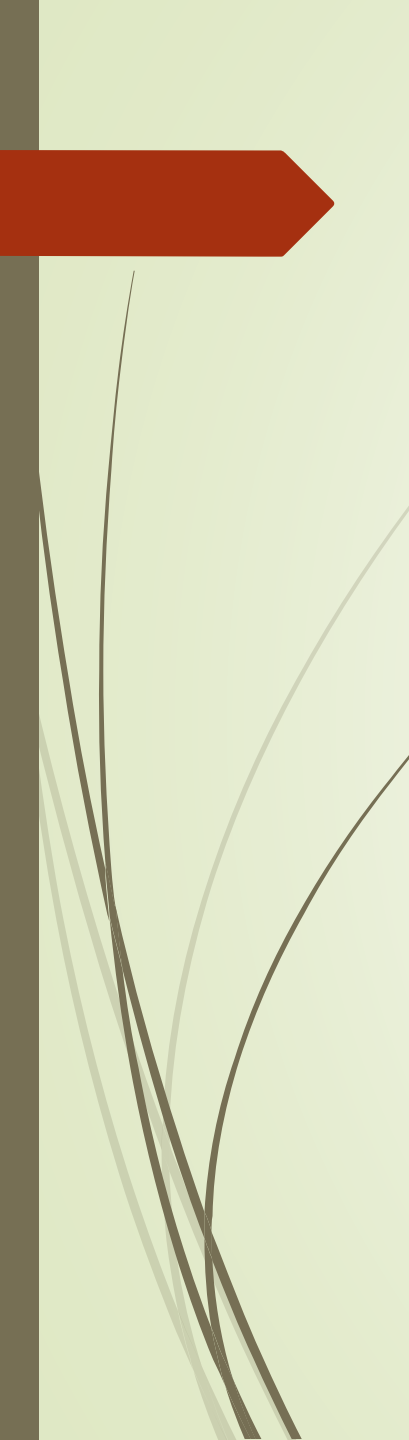
- ▶ The **Marakon model** was developed by Marakon Associates, a management consulting firm known for its work in the field of value-based management. According to **Marakon model**, a firm's value is measured by the ratio of its market value to the book value. An increase in this ratio depicts an increase in the value of the firm, and a reduction reflects a reduction in the firm's value.

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- **Marakon approach: key steps**
 - 1. Specify the financial determinants of value
 - 2. Understand the strategic drivers of value
 - 3. Formulate higher value strategies
 - 4. Develop superior organizational capabilities

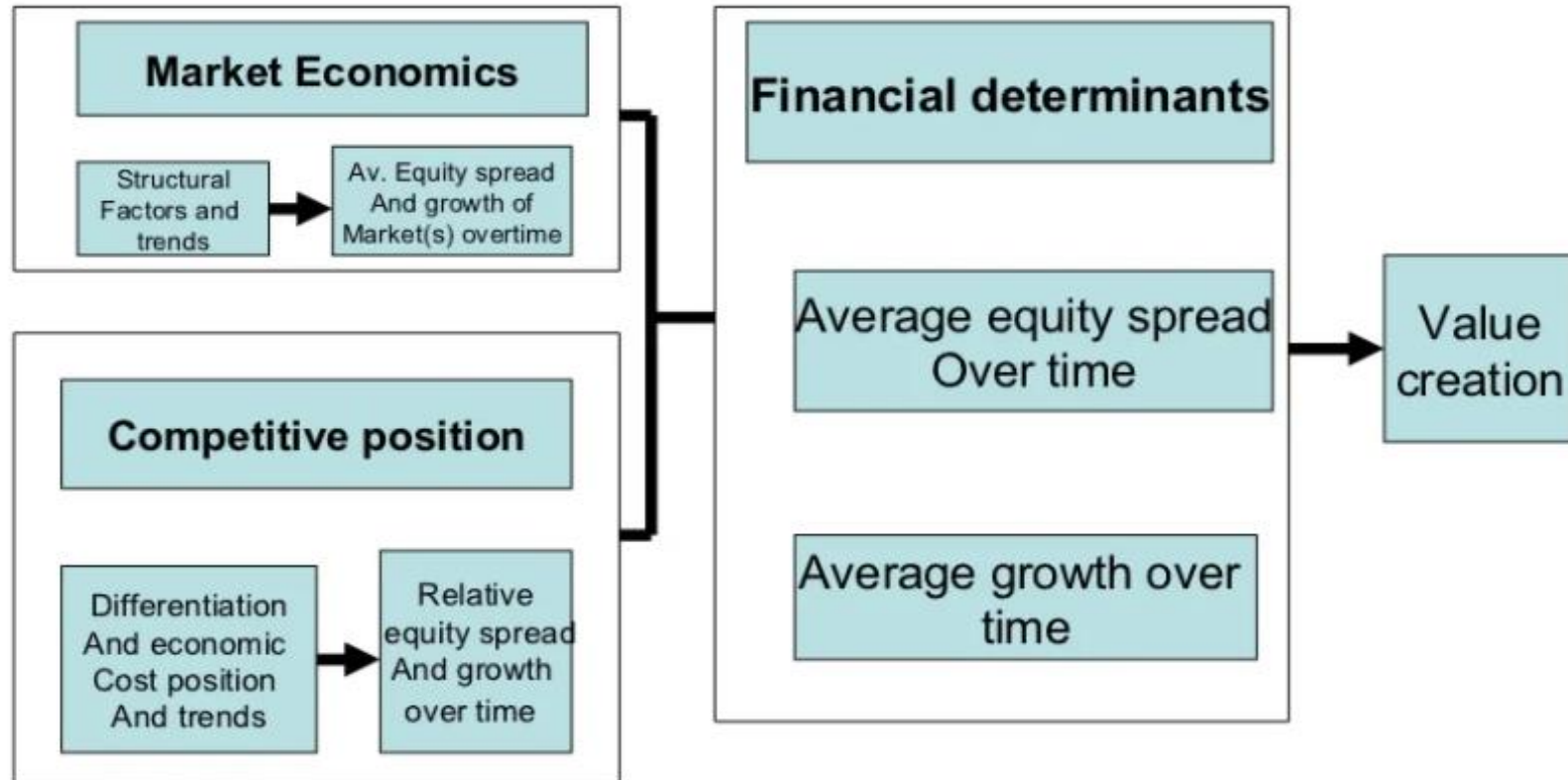
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- *Specify the financial determinants of value:*
 - Marakon approach is based on market-to-book ratio model
 - According to this model shareholder wealth creation is measured as the difference between the market value and the book value of a firm's equity.
 - The book value of equity, B , measures approximately the capital contributed by the shareholders, whereas the market value of equity, M , reflects how productively the firm has employed the capital contributed by the shareholders, as assessed by the market
 - Hence the management creates value for shareholders if M exceeds B , decimates value if M is less than B , and maintains value if M is equal B

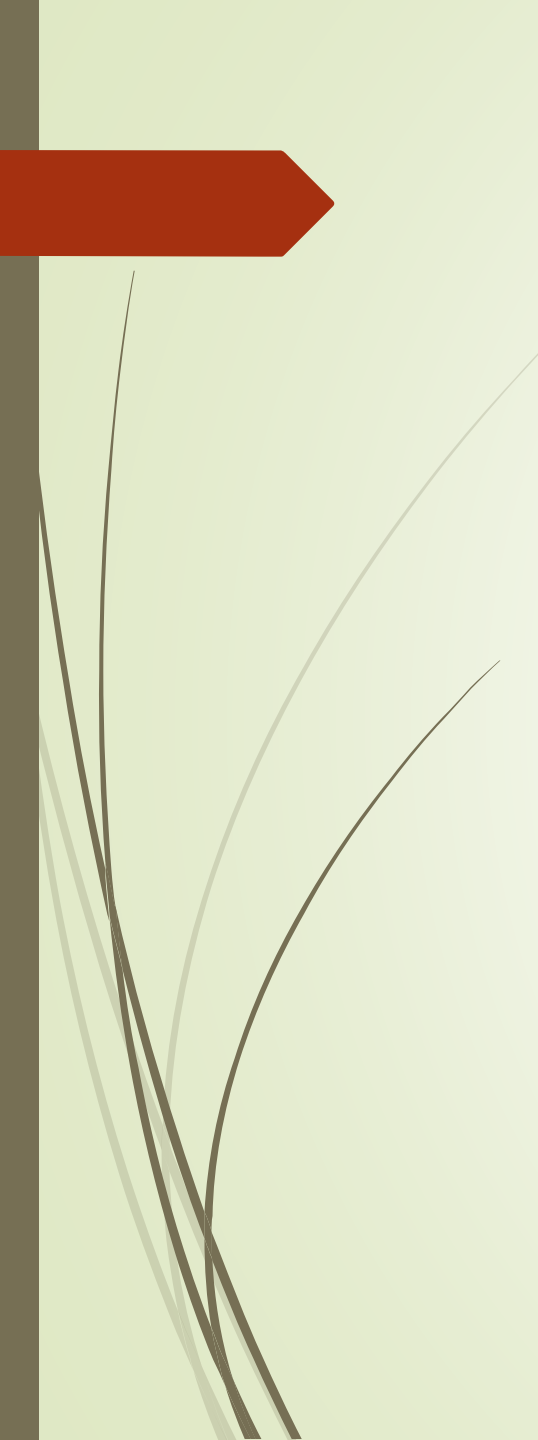
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- According to Marakon model, the market-to-book values ratio is a function of the return on equity, the growth rate of dividends (as well as earnings), and the cost of equity
 - $M/B = (r - g) / (k - g)$
 - M=market value of equity; B=book value of equity; r=return on equity; g=growth rate in dividends; k=cost of equity

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- $M/B = (r-g)/(k-g)$
 - From the eqn. it is evident that $(M/B) > 1$ only when $r > k$
 - i.e., value is created when there is positive spread between return on equity (ROE) and cost of equity
 - Further when $r > k$, higher the g the higher M/B ratio
 - This means that when the spread is positive, a higher growth rate contributes more to value creation

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- **Understand the strategic determinants of value:**
 - The key financial determinants of value are the **spread** (between ROE and cost of equity) and the **growth rate in dividends**
 - The two primary strategic determinants of spread and growth and hence value creation are *market economics* and *competitive position* as shown in figure

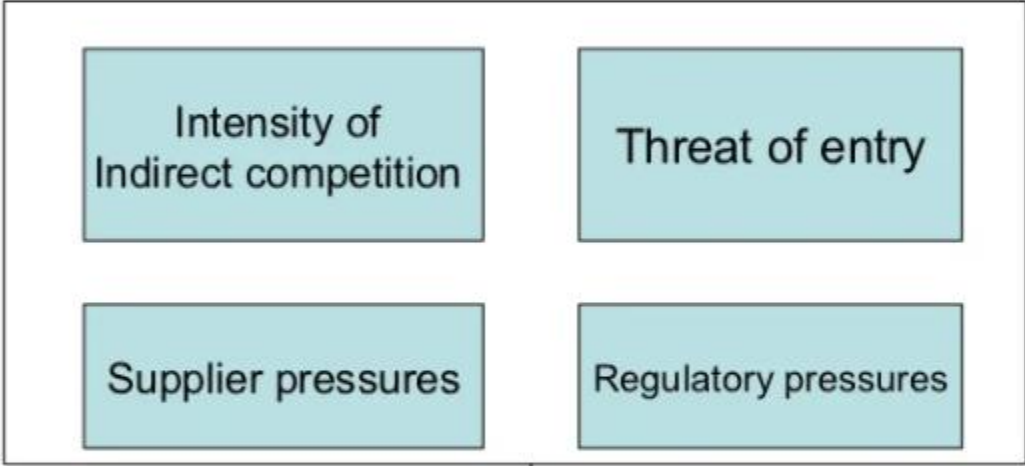
Strategic Determinants of Value Creation



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- **Market economics:** refers to the structural factors which determine the average equity spread as well as the growth rate applicable to all competitors in a particular market segment
 - The key forces which shape market economics (or profitability) are as follows:
 - Intensity of indirect competition
 - Threat to entry
 - Supplier pressures
 - Regulatory pressures
 - Intensity of direct competition
 - Customer pressures
- Marakon refer first four as “**limiting forces**” and last two as “**direct forces**”


Determinants of Market Economics (or profitability)


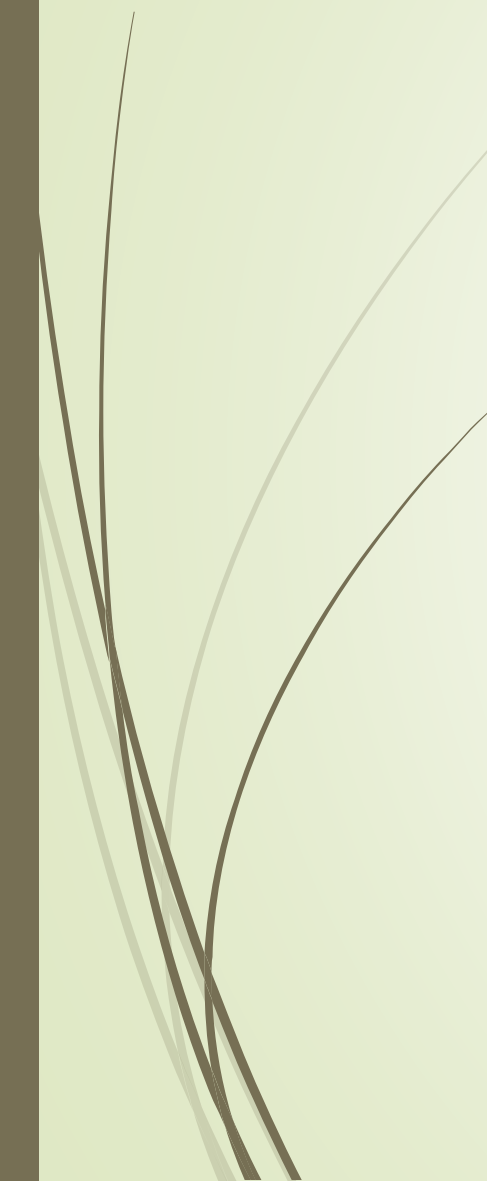
- Limiting Forces




- Direct forces

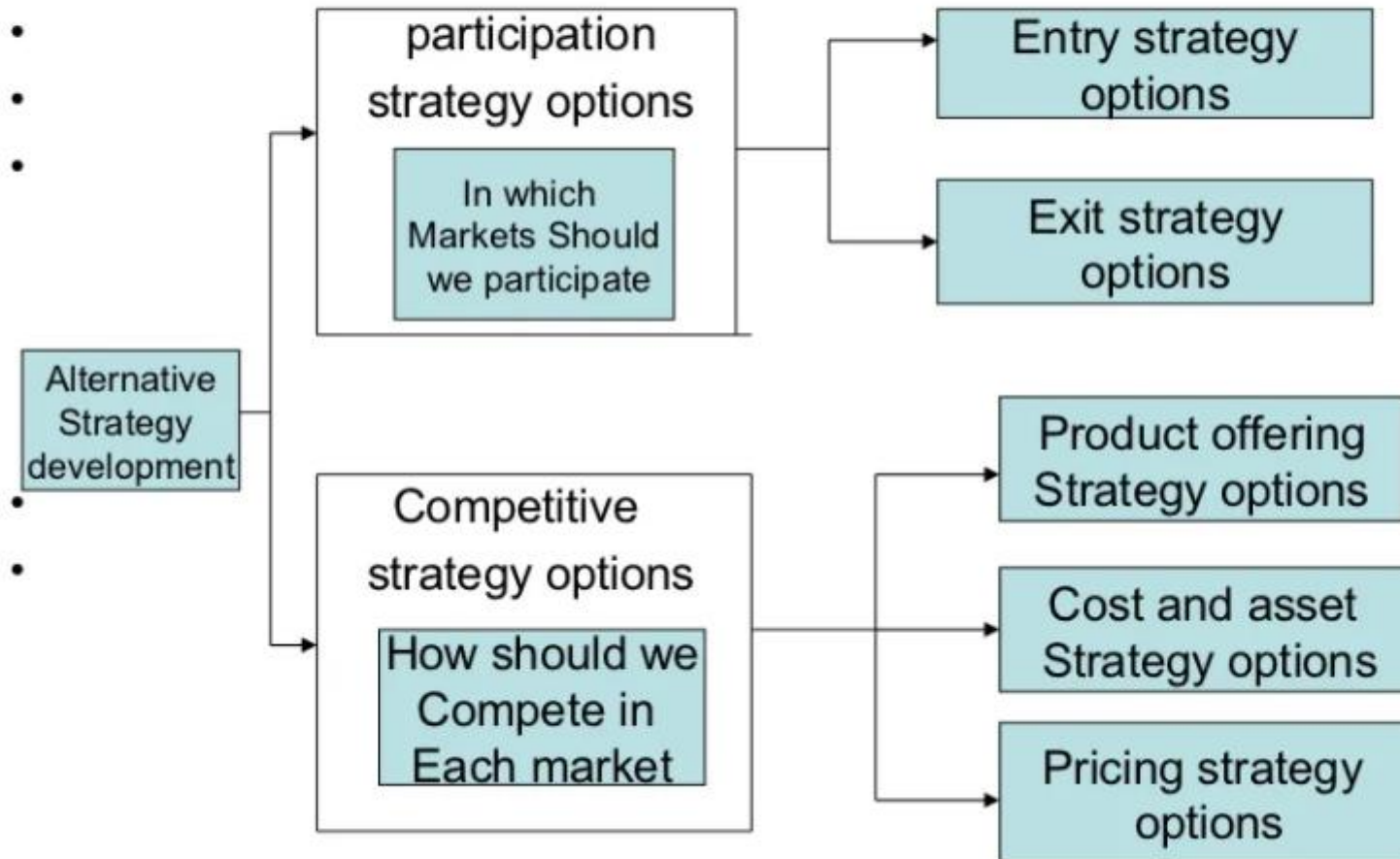



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- A firm may exploit its offerings in two ways:
 - 1. it can raise the price, leaving the market unchanged or
 - 2. expand the market share, leaving the price unchanged
 - For some products and services, in particular those which are regarded as commodities, successful product differentiation may not be feasible.
 - In such cases superior profitability may arise mainly from a relative **economic cost advantage**

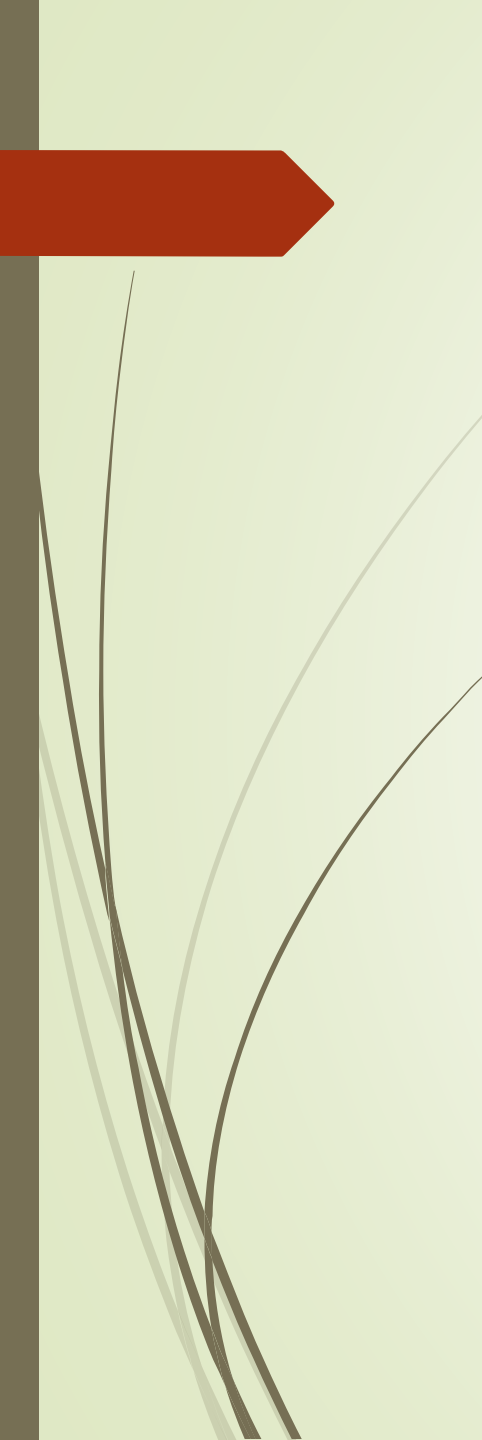
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- The possible sources of a relative economic cost advantage are:
 - Access to cheaper raw materials
 - Efficient process technology
 - Access to low-cost distribution channels
 - Superior management
 - Economies of scale in some markets

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- **Formulate Higher Value Strategies:**
value is created by participating in attractive markets and/or building a competitive advantage
 - Thus the key elements of a firm's strategy are its participation strategy and its competitive strategy as shown in the next slide

Elements of business strategy




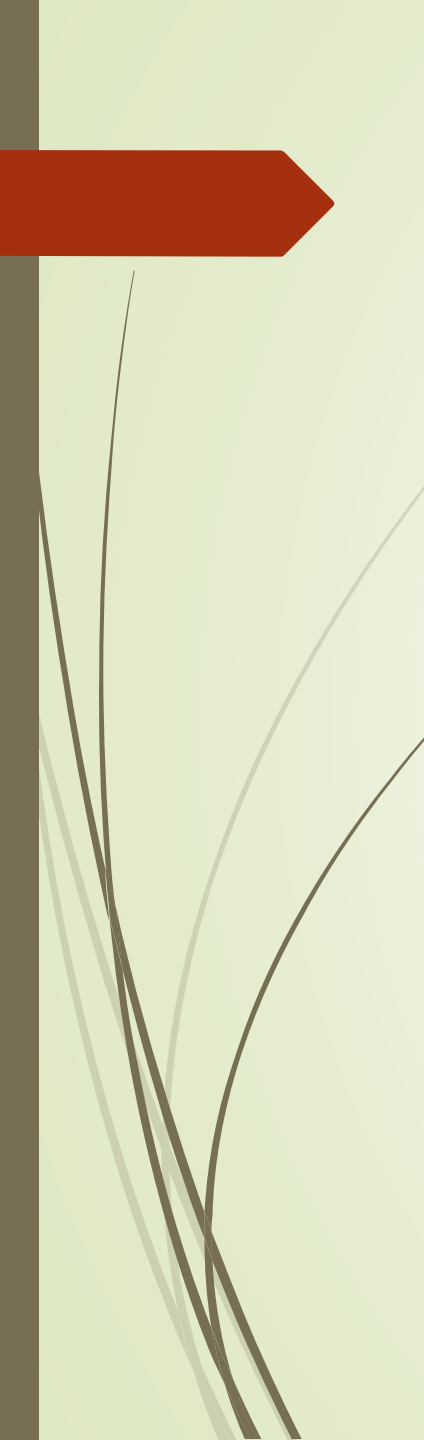
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- The *participation strategy* of a firm defines the product markets in which it will compete
 - At the corporate level the issue is:
 - In which new business the firm should enter and from which existing business the firm should exit?
 - At the business unit level the issue is :
 - In which unserved markets should the firm enter and from which existing markets should the firm exit?


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- The *Competitive strategy* of a business unit spells out the means the management will employ to build competitive advantage and/or overcome competitive disadvantage in the markets served by it
 - As McTaggart et al say “development of a competitive strategy involves three related tasks: determining
 - how best to differentiate the product and/or service offering,
 - how best to configure and manage the business unit’s costs and assets, and
 - how to price the product or service offerings”




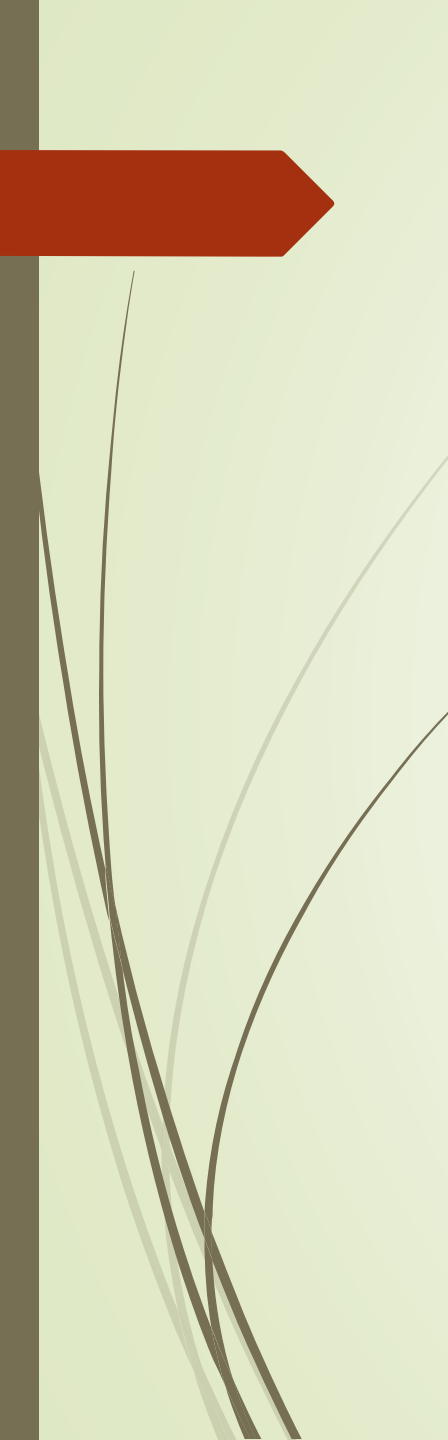
- **Develop Superior Organizational Capabilities:**

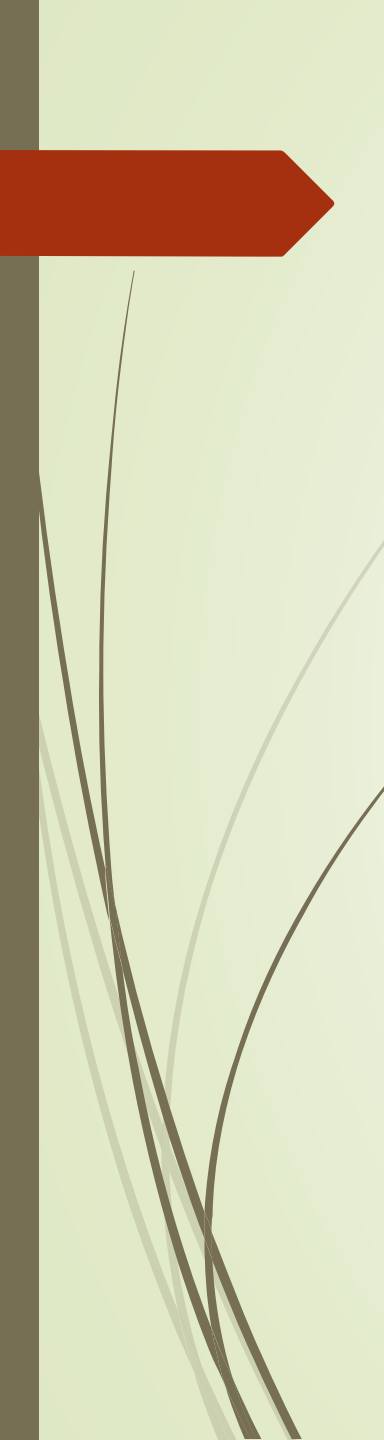
- Higher value strategies are designed to overcome the forces of competition
 - They should be combined with superior organizational capabilities which enable a firm to overcome the internal barriers to value creation and to counter what Warren Buffet calls the “institutional imperative” (forces which lead to divergence between the goal managers and shareholders)
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- The key organizational capabilities are:
 - 1. A competent and energetic chief executive who is fully committed to the goal of value maximization
 - 2. A corporate governance mechanism that promotes the highest degree of accountability for creation or destruction of value
 - 3. A top management compensation plan which is guided by the principle of “relative pay for relative performance”

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- 4. A resource allocation system which is based on four principles,
 - The principle of zero based allocation
 - The principle of funding strategies
 - The principle of no capital rationing
 - The principle of zero tolerance for bad growth
 - 5. A performance management process (high-level strategic and financial control process) which is founded on two basic principles
 - 1. the performance targets are driven by plans, rather than the other way around
 - 2. the process should have integrity implying that the performance contract must be fully honored by both sides, chief executive and each business unit head

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- **ALCAR approach:** the Alcar Group Inc. a management education and software company, developed an approach to VBM which is based on discounted cash flow analysis
 - **Determinants of shareholder value:** according to Alfred Rappaport author of *creating share holder value; a guide to managers and investors*, who is regarded as father of share holder value, the following seven factors called “value drivers” affect shareholder value

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- 1. rate of sales growth
 - 2. operating profit margin
 - 3. Income tax rate
 - 4. Investment in working capital
 - 5. fixed capital investment
 - 6. cost of capital
 - 7. value growth duration

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- While first six “value drivers” are self explanatory, last one value growth duration represent the period over which investments are expected to earn rates of return in excess of cost of capital
 - It is an estimate reflecting the belief of management that competitive advantage will exist for a finite period
 - Thereafter competitive edge would be lost causing the rate of return to regress to the cost of capital

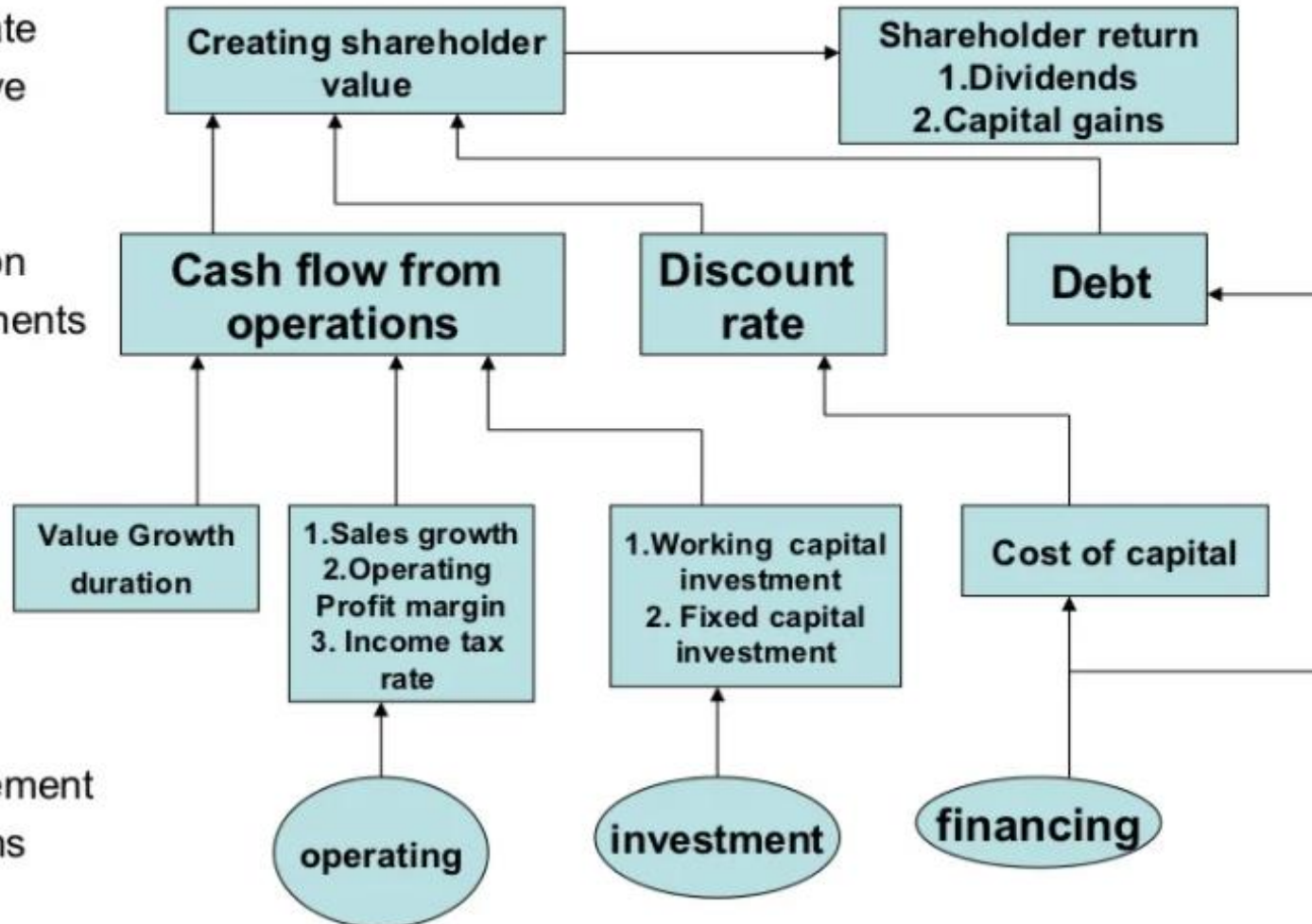
Shareholder value creation network

- Corporate Objective

- Valuation Components

- Value Drivers

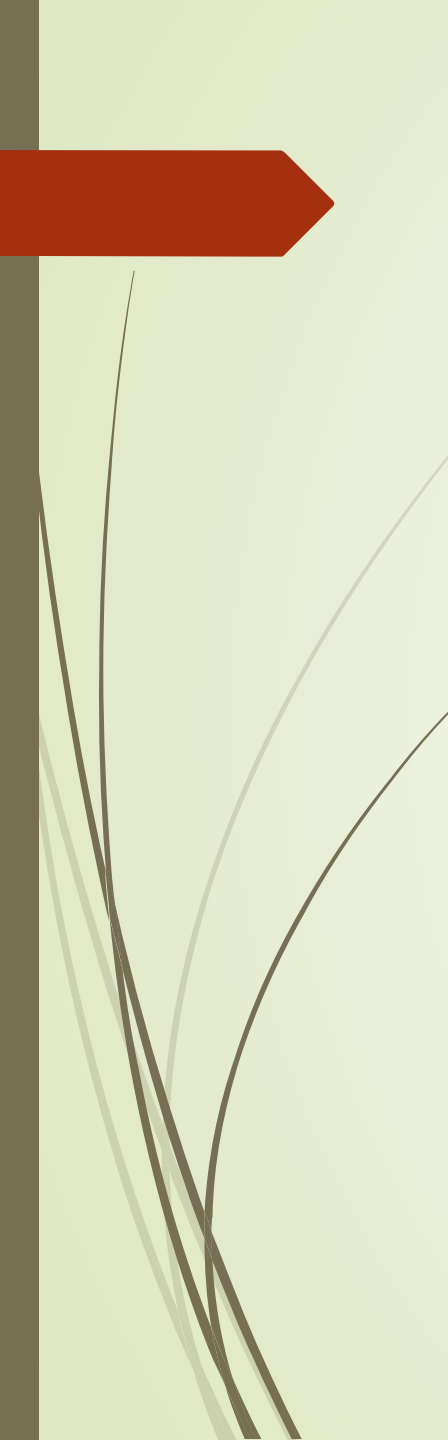
- Management decisions



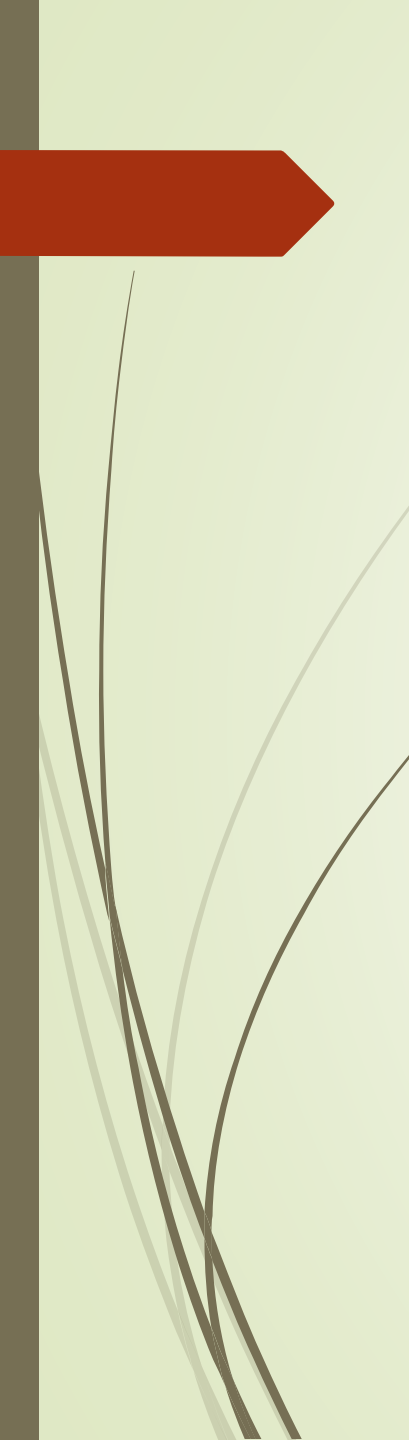
Assessment of the shareholder value impact of the business unit (strategy)


Procedure suggested by Alcar approach for assessing shareholder impact of a strategy

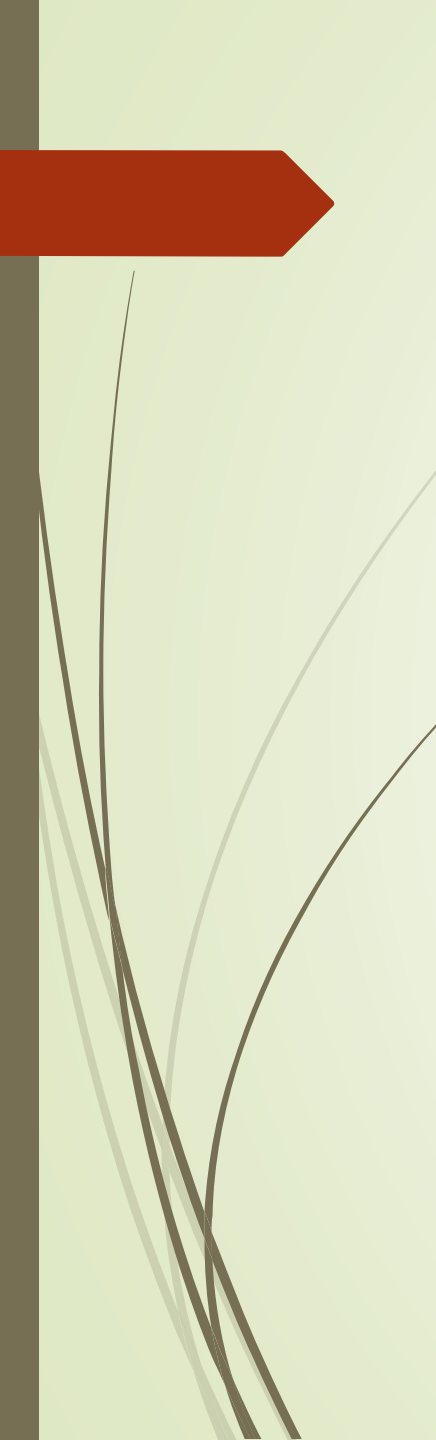
Steps	Elaboration
1. Forecast the operating cash flow stream for the business unit (strategy) over the planning period	The annual operating cash flow is defined as: cash inflow [(sales) (operating profit margin)(1-effective tax rate)] –cash outflow [fixed capital investment + working capital investment]
2. Discount the forecasted operating cash flow stream using the weighted average cost of capital	The weighted average cost of capital is: (post-tax cost of debt) (market value weight of debt)+(post-tax cost of equity)(market value weight of equity)
3. Estimate the residual value of the business unit (strategy) at the end of the planning period and find its present value	The residual value is : (perpetuity cash flow)/ (cost of capital)

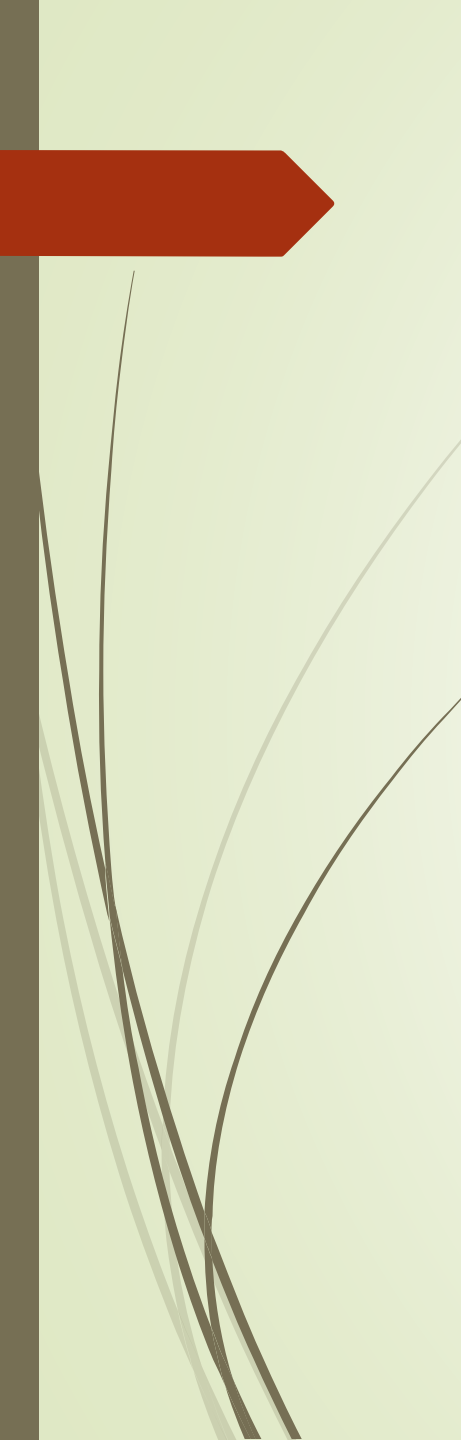


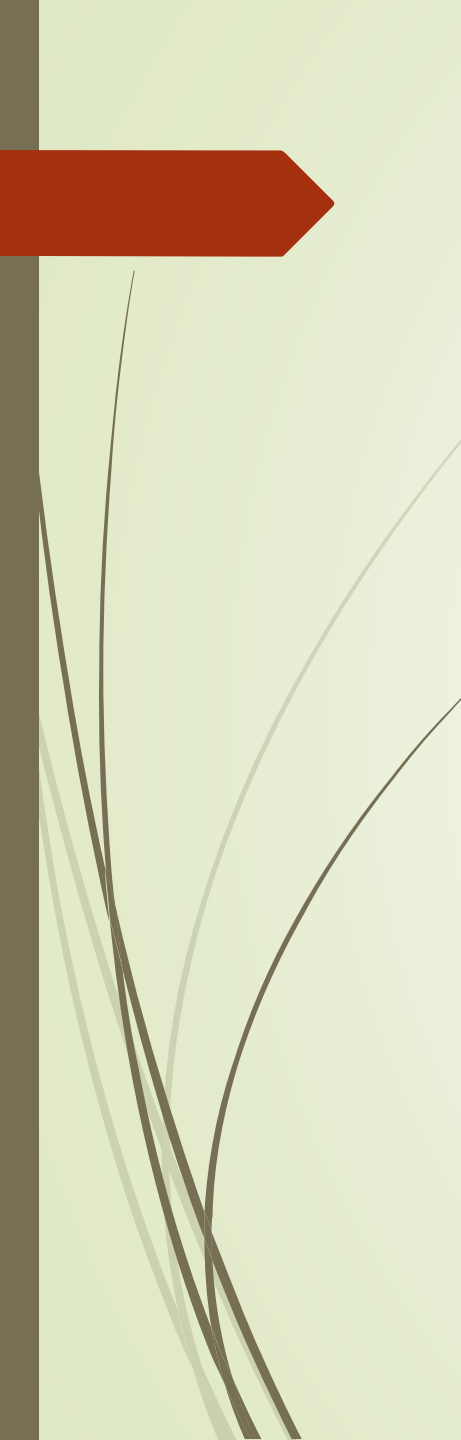
4. Determine the total shareholder value	The total shareholder value is : present value of the operating cash flow stream + present value of the residual income – market value of the debt
5. Establish the pre-strategy value	The pre-strategy value is; [(cash flow before new investment) / (cost of capital)] – market value of the debt
6. Infer the value created by the strategy	The value created by the strategy is: (total shareholder value – pre-strategy value)

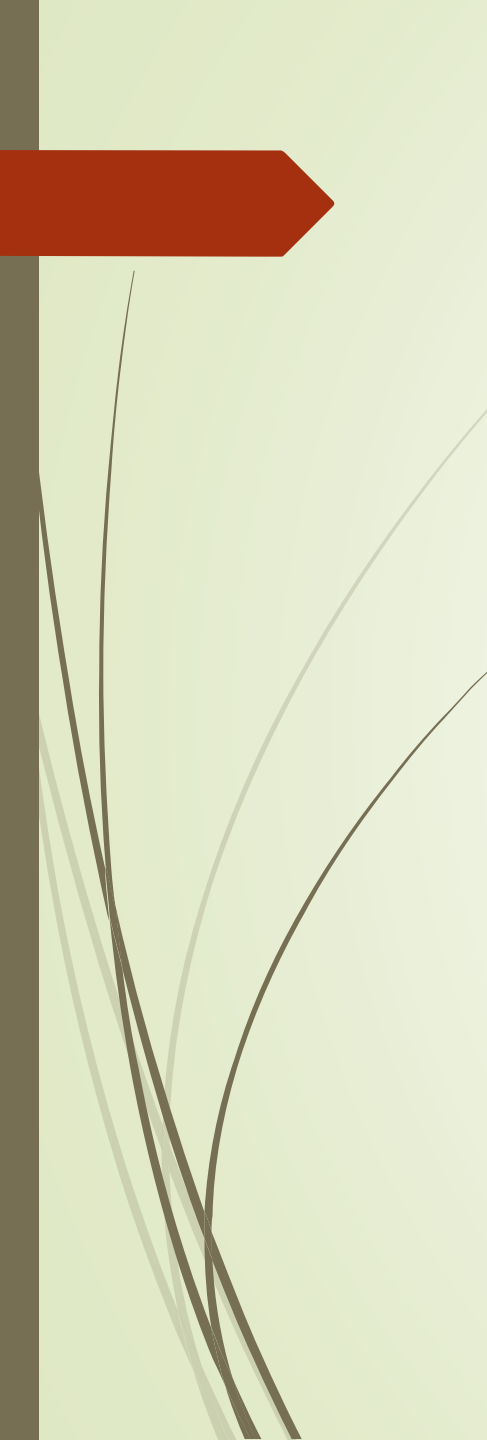
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- **Mckinsey approach:** a leading international consultancy firm has developed an approach to VBM.
 - According to them “Properly executed, value based management is an approach to management whereby, the company’s overall aspirations, analytical techniques and management processes are all aligned to help the company maximize its value by focusing decision-making on the key drivers of value”

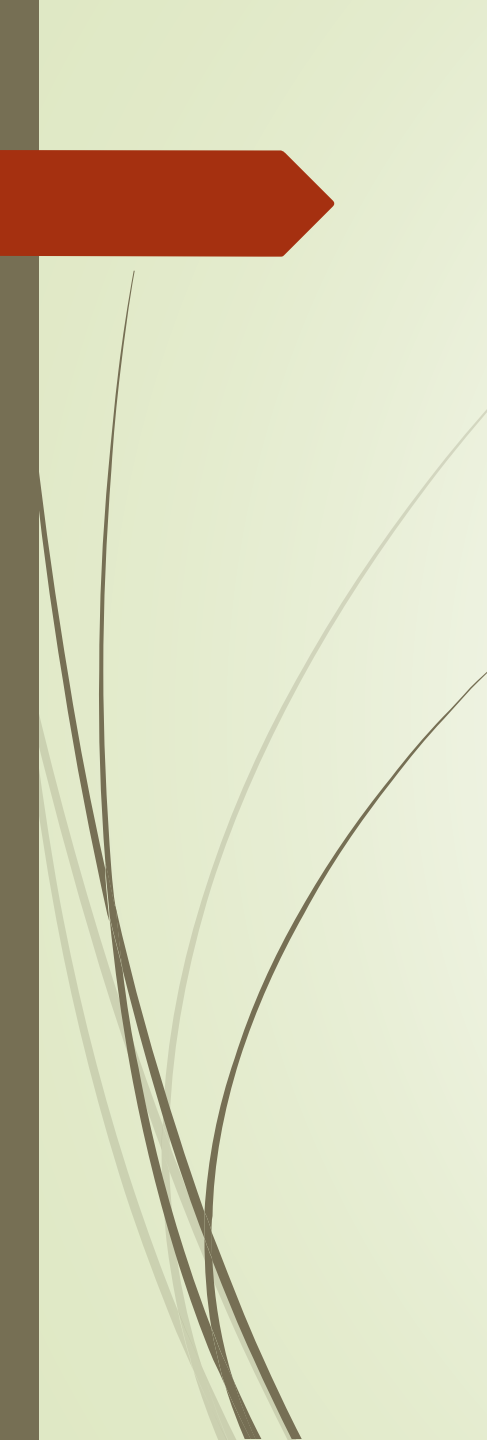
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- The key steps are as follows:
 - 1. ensure the supremacy of value maximization
 - 2. find the value drivers
 - 3. establish appropriate managerial processes
 - 4. implement value-based management properly

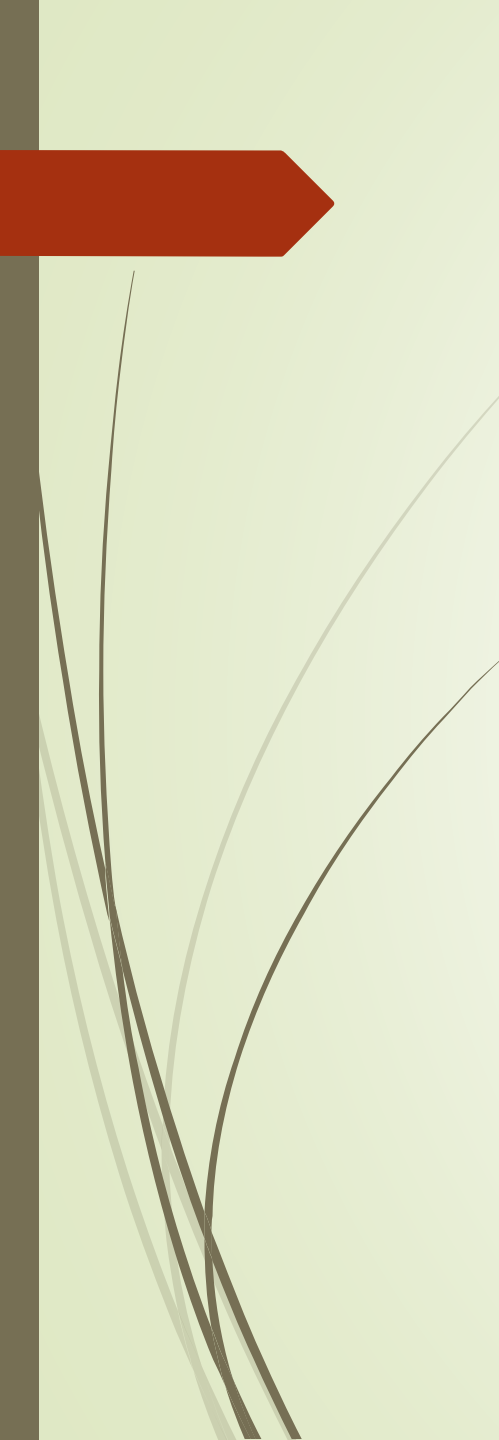
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- **Ensure the supremacy of value maximization:** the first step in VBM is to ensure that senior managers embrace value maximization as the ultimate financial objective
 - This means that top management should focus on discounted cash flow value (the most direct measure of value creation) and eschew (give up) traditional measures like earnings per share, growth in profit, or accounting rate of return as they are often poor proxies for value creation


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- Generally companies pursue financial goals as well as non financial goals
 - *Financial goals (value maximization or profit maximization) guide senior management*
 - Non financial goals like product innovation, customer satisfaction and quality improvement are meant to motivate the entire organization
 - They guide and inspire employees
 - They make sense to employees down the line who are familiar with operational measures like productivity, market share, cycle time, defect rate or absenteeism and understandably find value creation to be somewhat abstract and remote


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- Non-financial goals are often consistent with the financial goal of value maximization
 - Companies that maximize value also excel in terms of product quality, customer service, innovation, and employee satisfaction
 - Of course, in some cases there may be a possibility of conflict between a non-financial goal and the goal of value maximization
 - In such cases the conflict should ordinarily be resolved in favor of the goal of value maximization


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- **Find the value drivers:** an essential ingredient of VBM is a sound understanding of performance variables, referred to as the key value drivers, that influence the value of the business
 - Value drivers need to be identified at different levels.
 - Copeland et. al. suggest that it is useful to examine value drivers at three levels viz:


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- *Generic level:* at this level, the return on invested capital is analyzed in terms of operating margin and invested capital
 - *Business unit level:* at this level, variables like product mix, customer-mix, operating leverage, and so on are relevant
 - *Grass root level:* at this level, the focus is on operating value drivers like capacity utilization, revenues generated per visit, cost per delivery, and so on, that are directly influenced by the decisions of front line managers


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- **Establish appropriate managerial processes:** VBM calls for gearing the following managerial processes to value maximization: 1. strategy development, 2. target setting, 3. action plans (budgets), and 4. performance measurement / incentive system
 - **Strategy development:** value maximization should guide the formulation and evaluation of strategies, both at the corporate level as well as at the business unit level


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- At the corporate level, strategy development is concerned with two related issues:
 - What business should the firm be in?
 - How should resources be allocated across various businesses?
 - Strategy development at the business unit level calls for exploring alternative strategies, valuing them, and selecting the one that is expected to generate the highest value

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- **Target setting:** targets reflect what management plans to achieve
 - The selected value maximizing strategies should be translated into specific targets, short-term as well as long-term
 - The basic principles that should guide target setting are as follows:
 - 1. target should be based on key value drivers
 - 2. targets must be tailored to the level of the organization
 - 3. short-term targets and long-term targets must be properly linked

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- **Action plans / budgets:** action plans show the specific steps to be taken in line with the strategy of the business unit to achieve the targets
 - Short-term budgets of the companies, often expressed almost entirely in financial terms, do not provide sufficient guidance for implementation.
 - What is required is an actionable plan that facilitates an organized pursuit of its goals

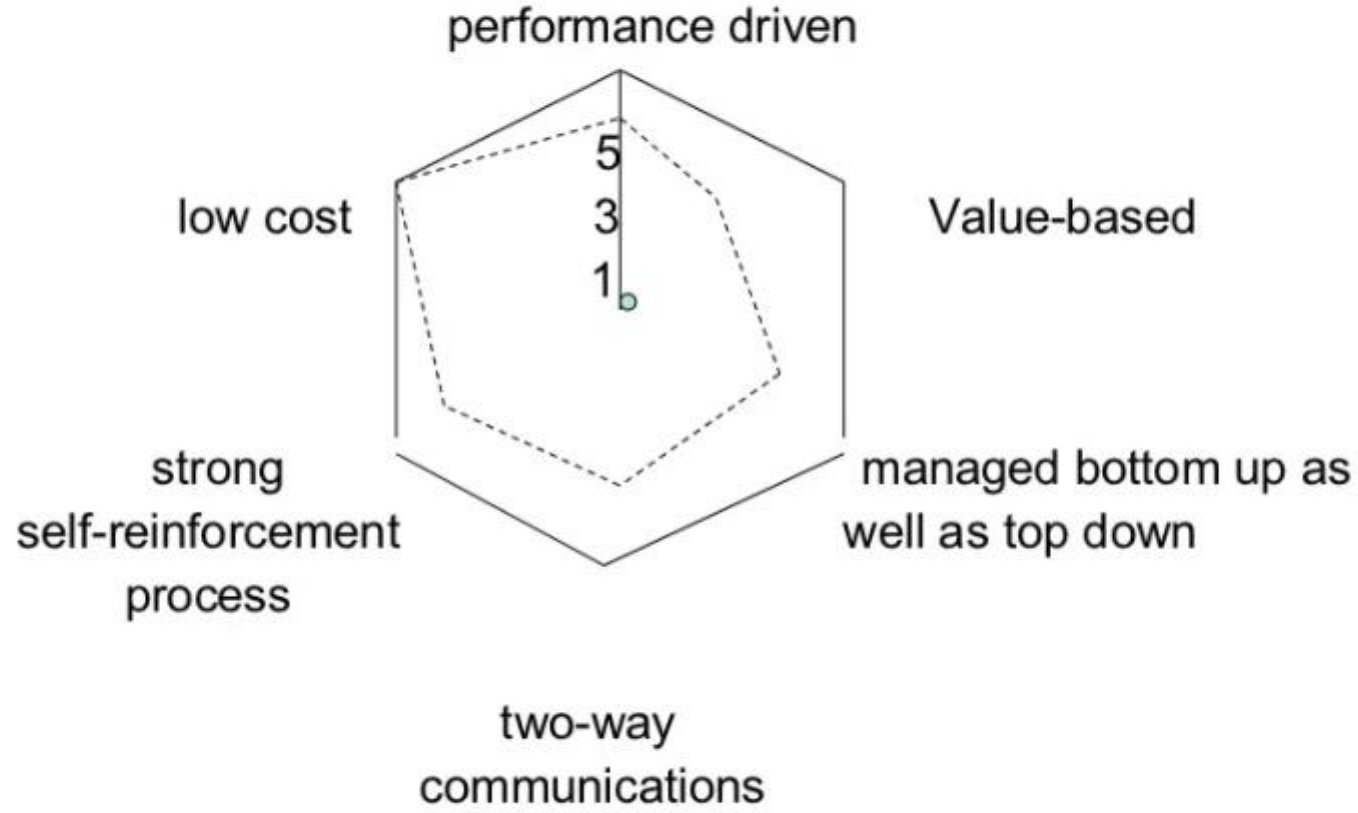
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- **Performance measurement:** managerial actions are greatly influenced by how performance is measured and evaluated
 - Hence performance measurement and the incentive system should be linked to the company's strategy or business unit's strategy


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- According to Copeland this calls for:
 - 1. tailoring performance measurement to reflect the characteristics of business unit
 - 2. linking performance measurement to set target
 - 3. combining financial and operating measures that reflect the key value drivers of the unit, and
 - 4. developing performance measures that provide early warning


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- **Implement VBM properly:** VBM is a long and complex process as it calls for a change in the mindset of decisions makers
 - The spider diagram, shown below, is a useful tool to provide a perspective on the process of change






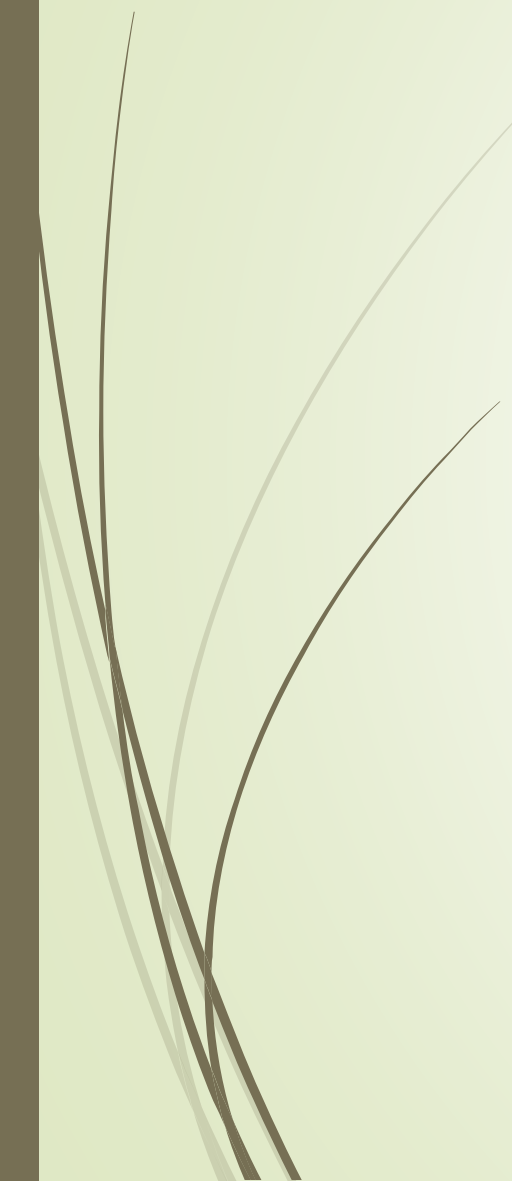
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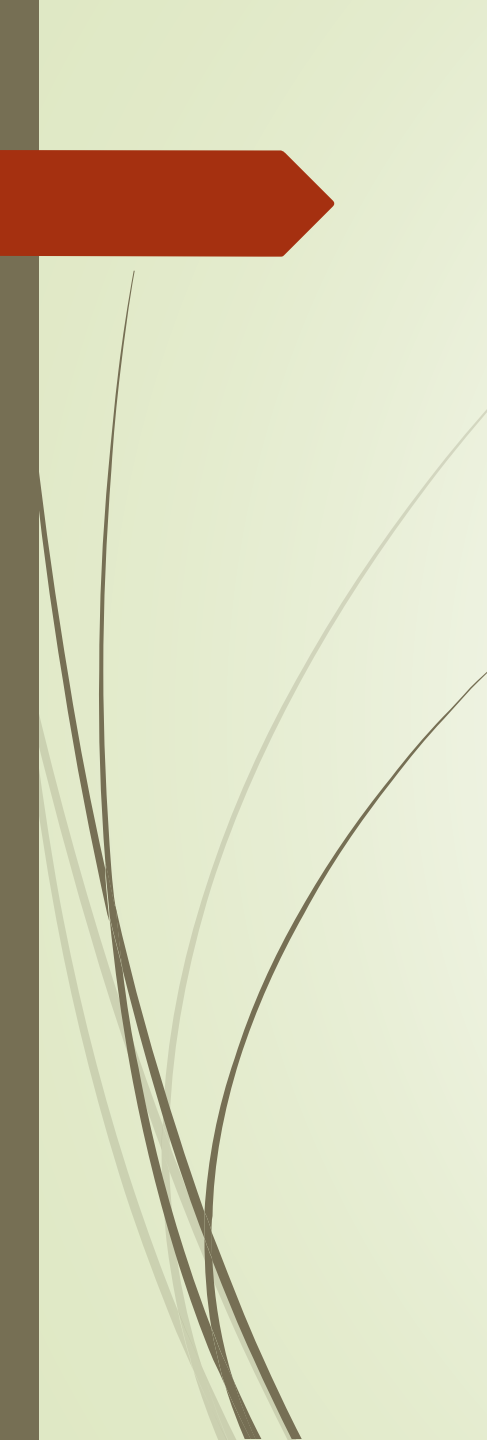



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- It helps understanding where the company is in terms of the following questions:
 - 1. is the company performance oriented?
 - 2. are the decisions of the company value-based?
 - 3. does the company employ a bottom up as well as a top down process?
 - 4. is there a meaningful two-way communication in the company?
 - 5. does the company have fairly strong self-reinforcing processes?
 - 6. does the company have a low-cost value-based management systems?

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- **BCG Approach:** Boston Consulting Group has developed an approach to shareholder value management
 - **Two concepts:** total shareholder return and total business return
 - For applying these concepts, two performance metrics are used: cash flow return on investment (CFROI) and cash value added (CVA)

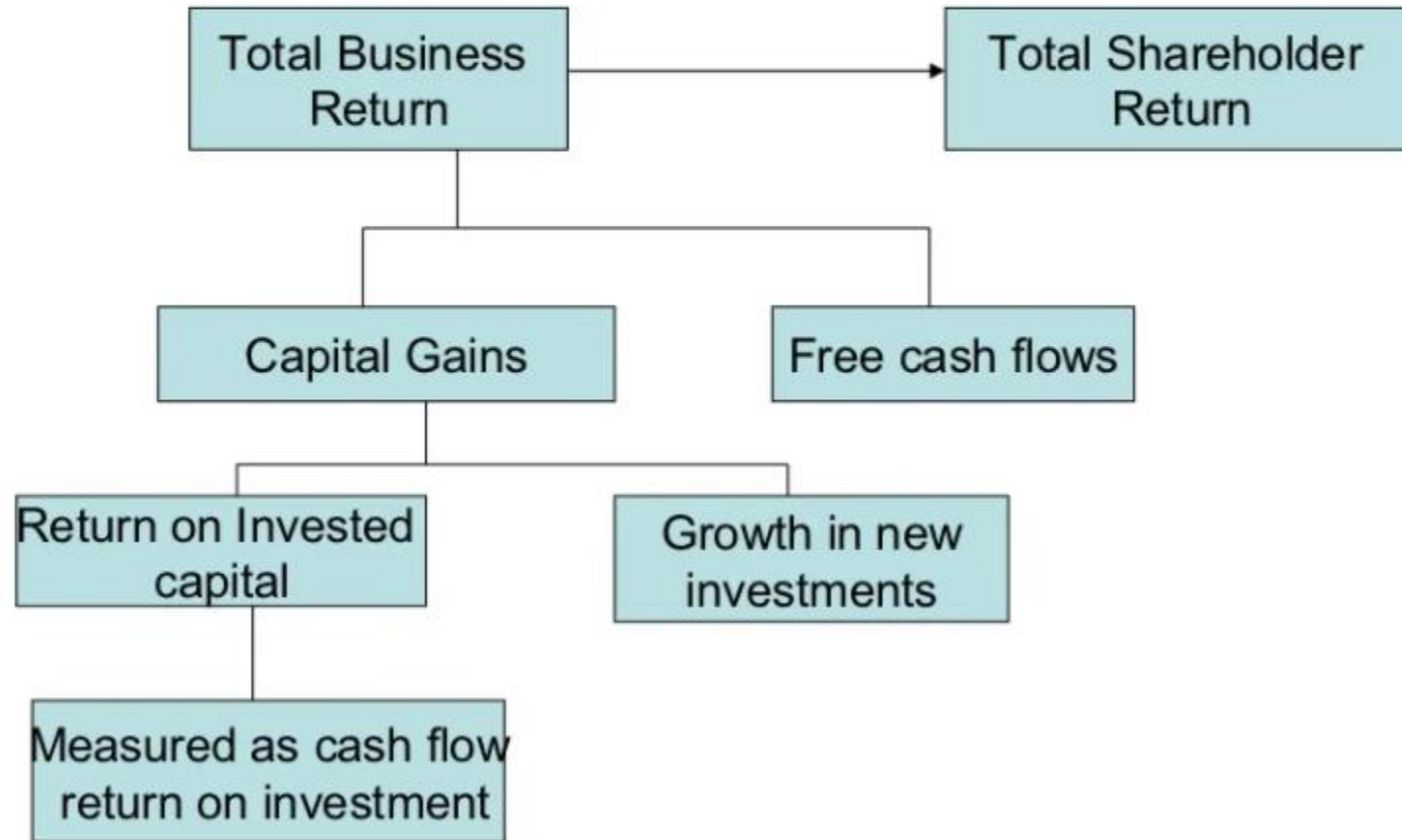
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- **Total shareholder return:** total shareholder return (TSR) is the rate of return shareholders earn from owning a company's stock over a period of time
 - The TSR for a single holding period is computed as follows:
 - $TSR = \left[\left(\frac{\text{dividend}}{\text{beginning market value}} \right) + \left(\frac{\text{ending market value} - \text{beginning market value}}{\text{beginning market value}} \right) \right]$


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- TSR for multiple holding period is computed using the conventional IRR computation
 - Beginning market value = $\left[\frac{\text{dividend}_1}{(1+\text{TSR})^1} + \frac{\text{dividend}_2}{(1+\text{TSR})^2} + \frac{\text{dividend}_n}{(1+\text{TSR})^n} + \dots \right]$
+ ending market value in year $n / (1+\text{TSR})^n$
 - The reasons for considering TSR as a useful measure of value creation are:
 1. TSR is comprehensive as it includes dividends as well as capital gains

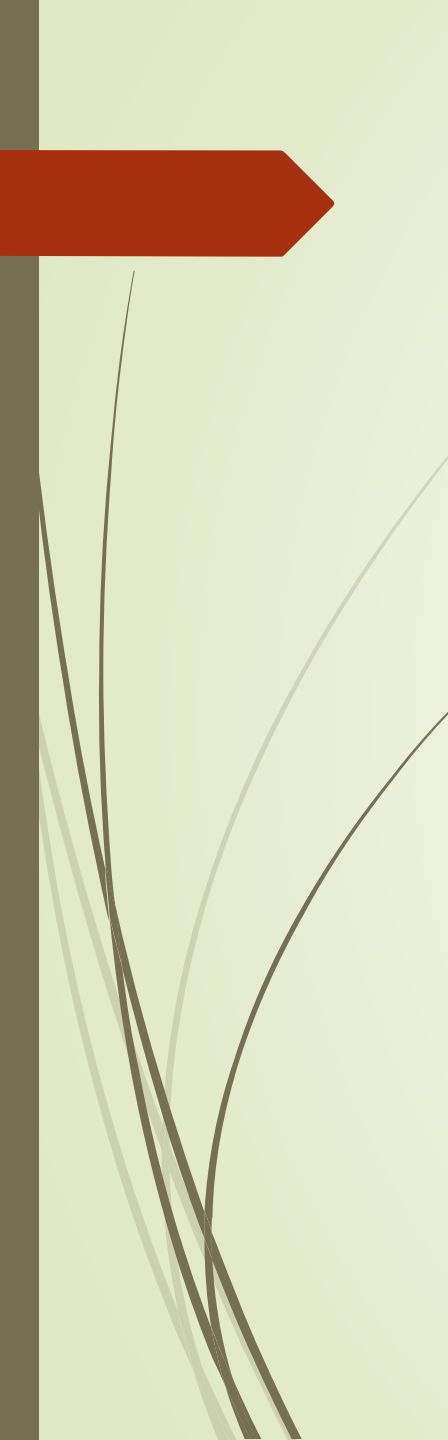
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- 2. TSR is widely used by the investment community and also required by the Securities Exchange Commission a regulatory body for the capital market in USA
 - 3. TSR can be easily benchmarked against the market or peer groups
 - 4. TSR is not biased by size
 - 5. TSR is difficult to manipulate

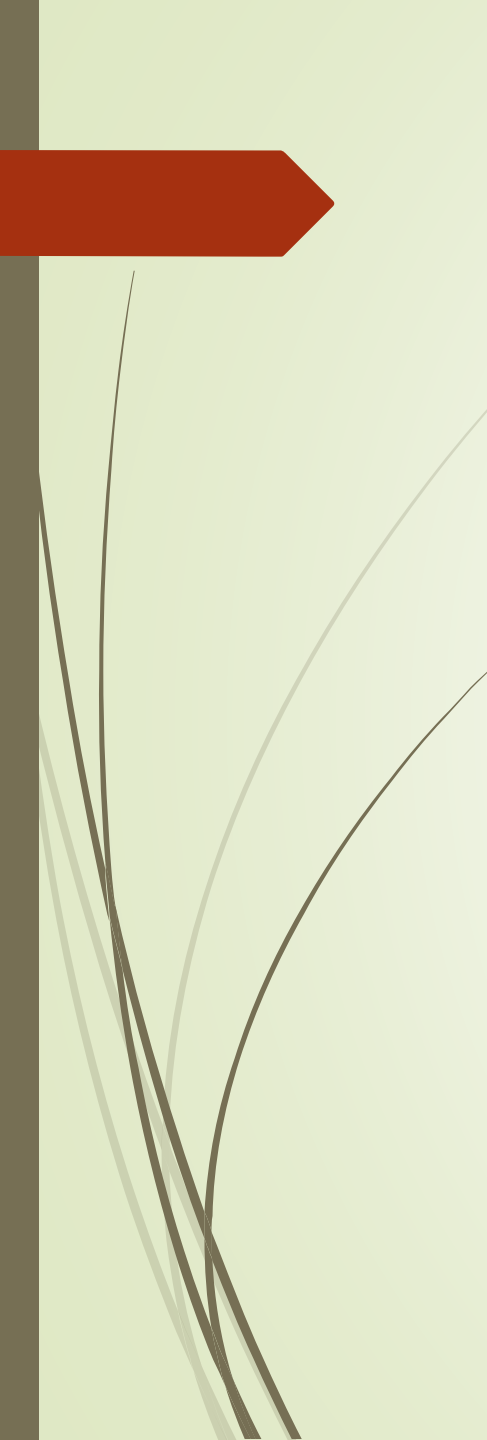
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- **Total Business Return:** if TSR is what matters to investors, an internal counterpart to it is needed for managerial purposes
 - For BCG, the total business return (TBR) is the internal counterpart of TSR
 - The link between TSR, TBR, and value drivers is shown next slide


TSR, TBR and the value drivers

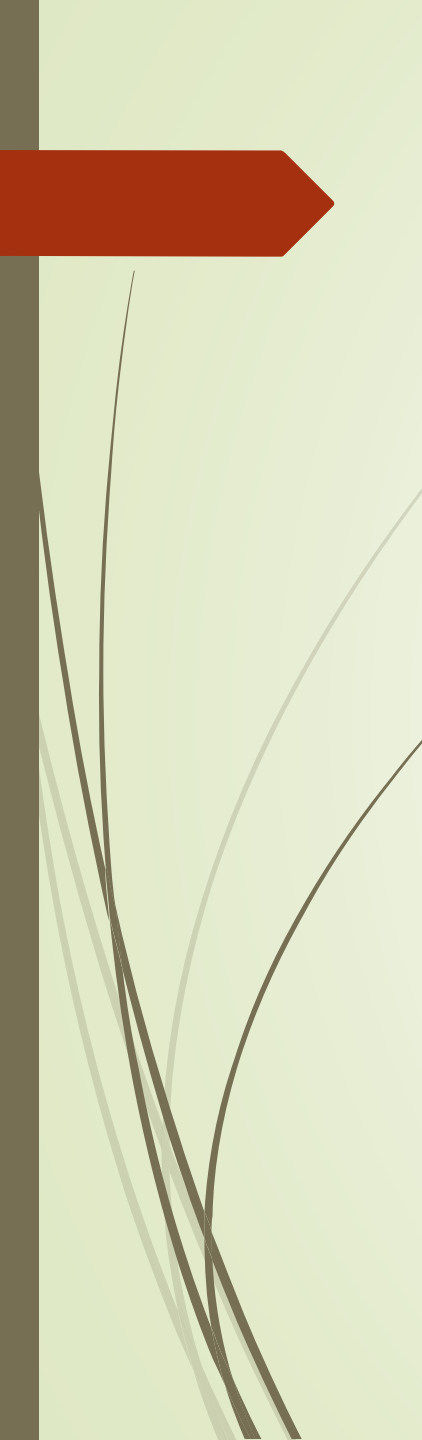


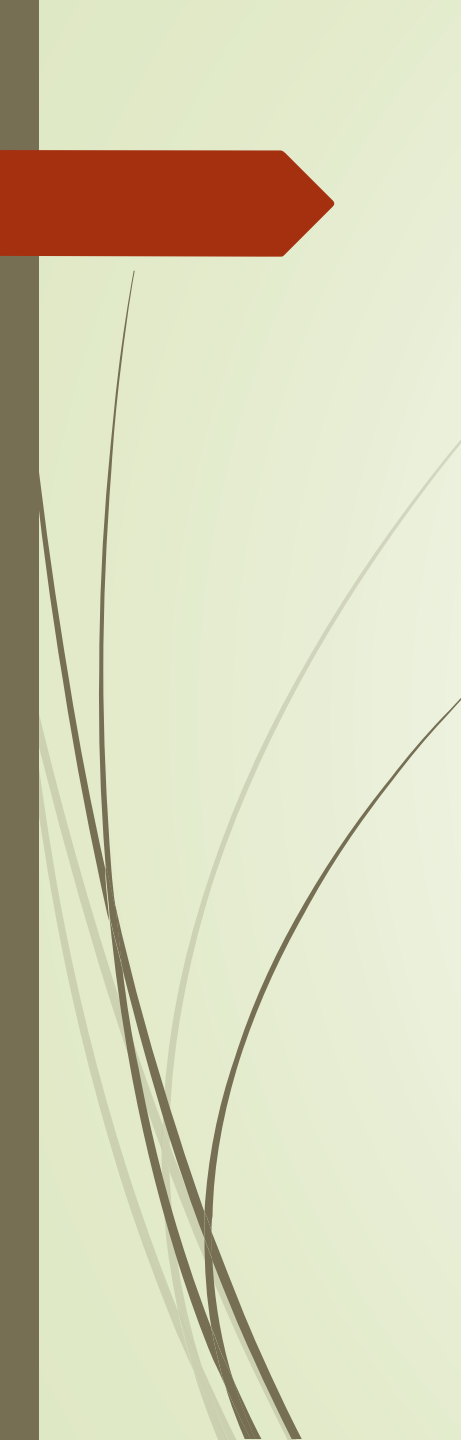
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- The TBR for a single holding period is computed as follows:
 - $$\text{TBR} = \frac{(\text{free cash flow} / \text{beginning value}) + (\text{ending value} - \text{beginning value})}{\text{beginning value}}$$
 - The TBR for a multiple holding period is measured using the conventional IRR computation

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- Beginning value= [free cash flow₁/(1+TBR) +free cash flow₂/(1+TBR)² +.....+ free cash flow_n/(1+TBR)ⁿ + ending value in year _n/(1+TBR)ⁿ
 - The beginning and ending values are estimates of market values of the firm or business unit at the beginning and end of period.
 - They are estimated using one or more of the following:
 - Value=earnings x P/E multiple
 - Value= Book value x M/B multiple

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- Value= Free cash flow *divided by* cost of capital
 - Value= NPV of expected cash flow
 - BCG calculates TBR using a *time fade model* which assumes that a firm's return on invested capital and its growth rate will fade over time toward a national average due to competitive pressures

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- Bartely Madden of HOLT Associates explains as follows “when businesses succeed in achieving above-average returns, competitors are attracted by above-average returns and try to serve the customer ever more effectively. The competitive process tends to force high-CFROI firms toward the average. Business earning CFROIs below the cost of capital are eventually compelled to restructure and/or downsize in order to earn at least the cost of capital, or eventually they cease operations”

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- *Inter alia*, BCG uses the TBR for strategic planning, resource allocation, and incentive compensation
 - **Strategic planning:** strategic planning involves choosing strategies and plans that create value
 - Alternative strategies and plans must be evaluated in terms of their TBR.
 - This is the only measure that accurately reflects the tradeoffs among profitability, growth and cash flows, the three drivers of value

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- **Resource allocation:** in multi-business firms, resource allocation has a critical bearing on value creation
 - Resource allocation decisions should be based on the track record of various business and the promise of their strategic plans
 - BCG employs a perspective, depicted in the figure in next slide , to guide resource allocation decisions

Resource allocation perspective

Positive

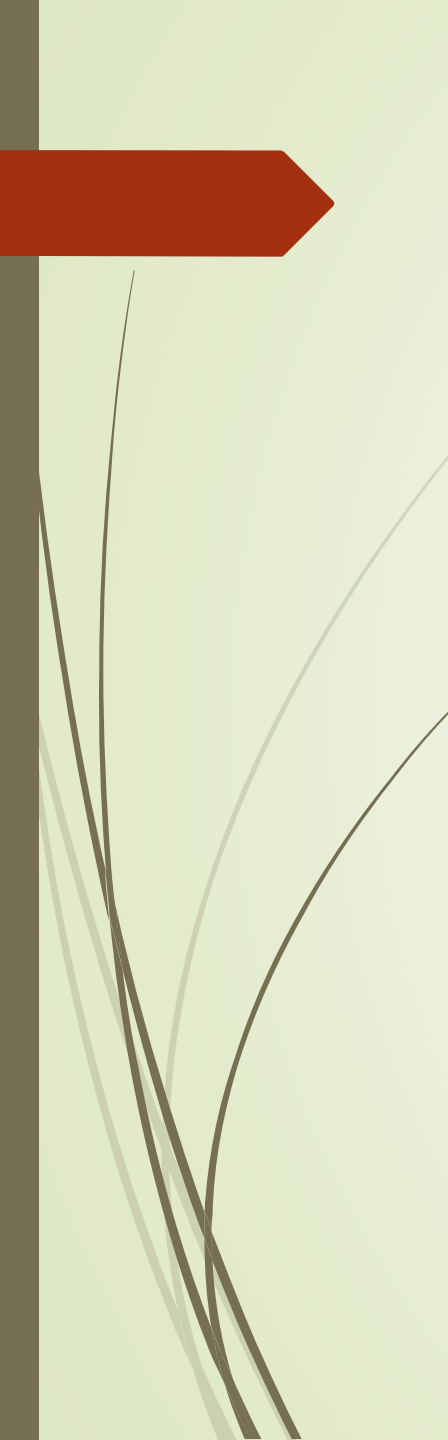
Current CFROI
vs
cost of capital


question	High priority for reinvestment
Do not fund	question

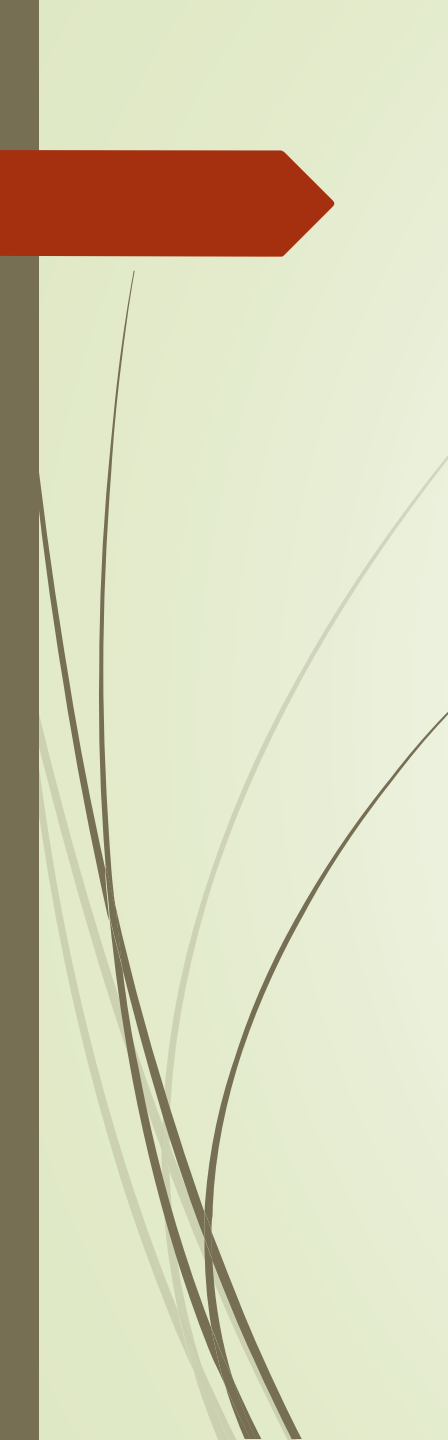
Negative



Negative 0 Positive

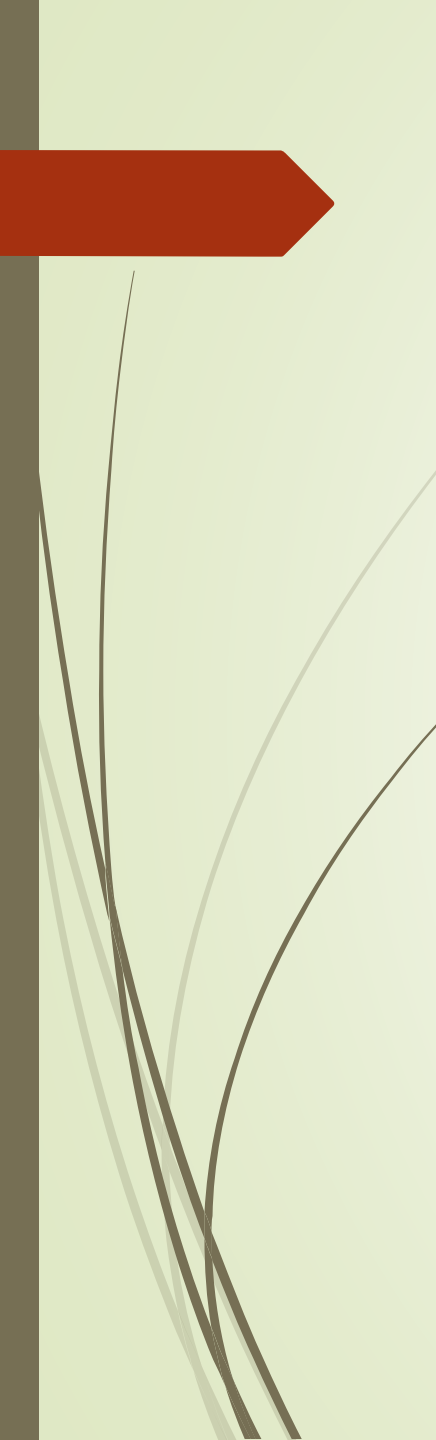
TBR of business plan
versus
target TBR


- 
- **Cash flow return on investment (CFROI):** TBR incorporates the returns (CFROIs) both for the assets in place and the assets to be created
 - Thus CFROI has an important bearing on TBR
 - What is CFROI and how is it measured?
 - BCG defines CFROI as “ the sustainable cash flow a business generates in a given year as a percentage of the cash invested in the firm’s assets”

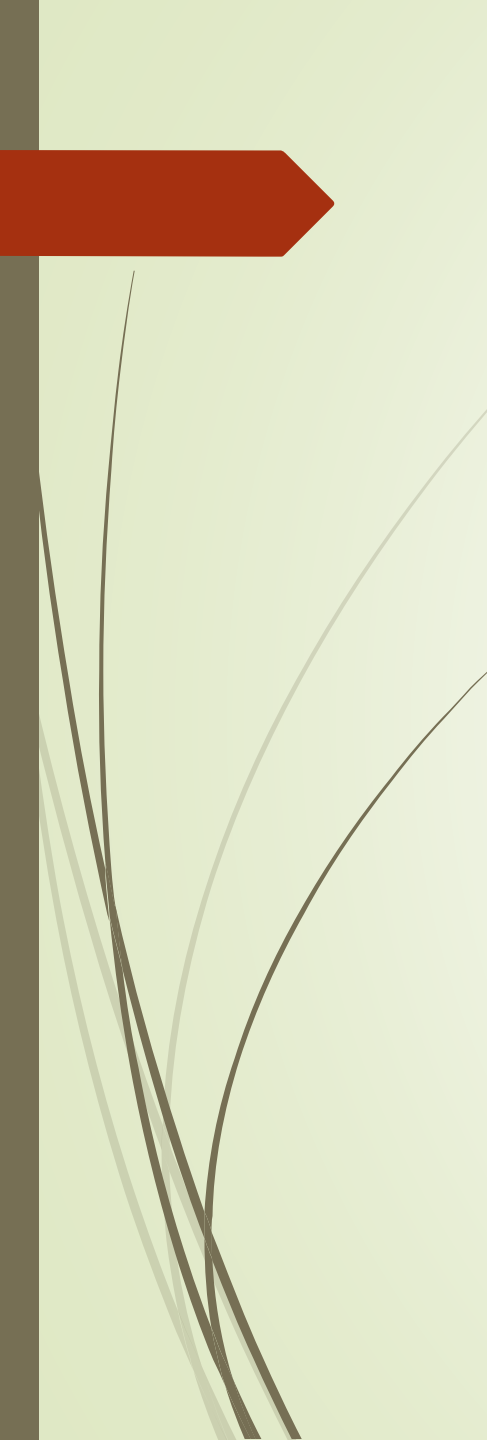
- 
- Sustainable cash flow is gross cash flow less depreciation. Thus:
 - $CFROI = (\text{cash flow} - \text{economic depreciation}) / \text{cash invested}$
 - Note the economic depreciation is the amount of annual sinking fund payment earning cost capital required to replace assets


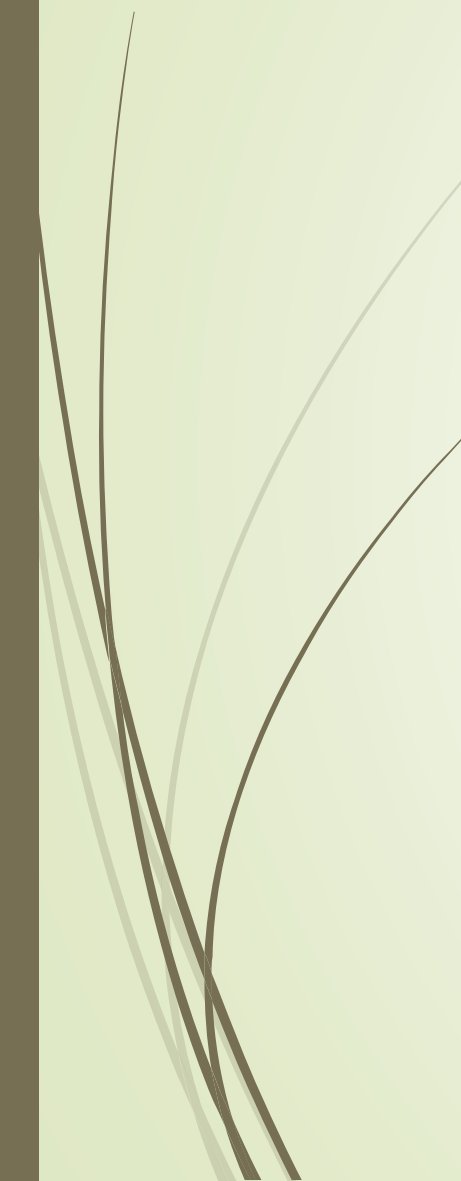
- 
- **Cash Value Added:** the CFROI is the key metric used by BCG for measuring performance and valuing a company
 - However, BCG has also developed a measure of economic profit: cash value added (CVA).
 - BCG claims that CVA is superior to EVA because it removes the accounting distortion that may bias EVA
 - CVA is measured as operating cash flow less economic depreciation less a capital charge on gross investment
 - Thus $CVA = \text{cash flow} - \text{economic depreciation} - \text{capital charge on gross investment}$



- 
- 
- **Stern Stewart approach (EVA approach):** originally proposed by consulting firm Stern Stewart & co. Economic Value Added (EVA) is currently a very popular idea.
 - Fortune magazine called it “today’s hottest financial idea and getting hotter”, Peter Drucker refers it as ‘a measure of total factor productivity’
 - Companies across a broad spectrum of industries and across a wide range of countries have joined the EVA bandwagon.

- 
- EVA is essentially the surplus left after making an appropriate charge for the capital employed in the business
 - It may be calculated in any of following:
 - $EVA = NOPAT - c^* \times CAPITAL$
 - $EVA = CAPITAL(r - c^*)$
 - $EVA = [PAT + INT(1 - t)] - c^* \times CAPITAL$
 - $EVA = PAT - k_e \times EQUITY$
 - where EVA= economic value added; NOPAT=net operating income after tax; c^* =cost of capital; CAPITAL= economic book value of the capital employed in the firm; r =return on capital = $NOPAT/CAPITAL$; PAT= profit after tax; INT= interest expense of the firm; t =marginal tax rate of the firm; k_e =cost of equity; EQUITY= equity employed in the firm

- 
- **The three components of EVA**
 - As seen EVA is a function of net operating profit after tax (NOPAT), cost of capital c^* , and the capital employed (CAPITAL)
 - **NOPAT** is defined as; (profit before interest and tax) (1-tax rate)
 - This definition is based on two principles
 - 1. separate the investment and financing side of a firm. This implies that financing charges (interest & dividend) are not considered when we look at profit (or cash flows) on the investment side. Financing charges will be reflected in the cost of capital figure used in discounting profits (or cash flows) on the investment side
 - 2. do all analysis in post tax terms

- 
- **Cost of capital:** providers of capital (shareholders and lenders) want to be suitably compensated for investing capital in the firm. The cost of capital reflects what they expect.
 - The cost of capital should have following features:
 - It represents a weighted average of the cost of all sources of capital
 - It is calculated in post tax terms
 - It reflects the risks borne by various providers of capital

- 
- 
- The formula employed for estimating cost of capital is:
 - $c^* = (\text{cost of equity})(\text{proportion of equity in the capital employed}) + (\text{cost of preference})(\text{proportion of preference in the capital employed}) + (\text{pretax cost of debt})(1 - \text{tax rate})(\text{proportion of debt in the capital employed})$

- 
- 
- ***Capital employed:*** to obtain the capital employed in the business we have to make adjustments to the 'accounting' balance sheet to derive the 'economic book value' balance sheet
 - These adjustments are meant to reflect the economic value of assets in place rather than the accounting values as determined by inherently conservative historical cost based Generally Accepted Accounting Principles



HOW TO INCREASE EVA

- **NOPAT** : Increasing NOPAT with the same amount of capital
- **CAPITAL EMPLOYED** : Reducing the capital employed without affecting the earnings i.e., discarding the unproductive assets.
- **CAPITAL DIVESTED** : Investing in those projects that earn a return greater than the cost of capital.
- **COST OF CAPITAL** : By reducing the cost of capital, which means employing more debt, as debt is cheaper than equity or preference capital.

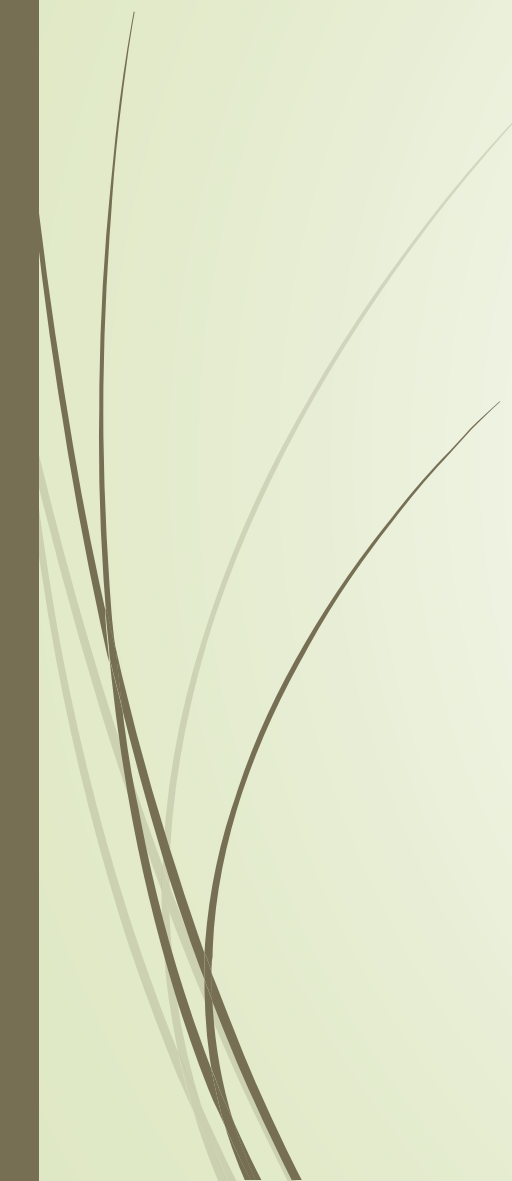


BENEFITS OF IMPLEMENTING EVA

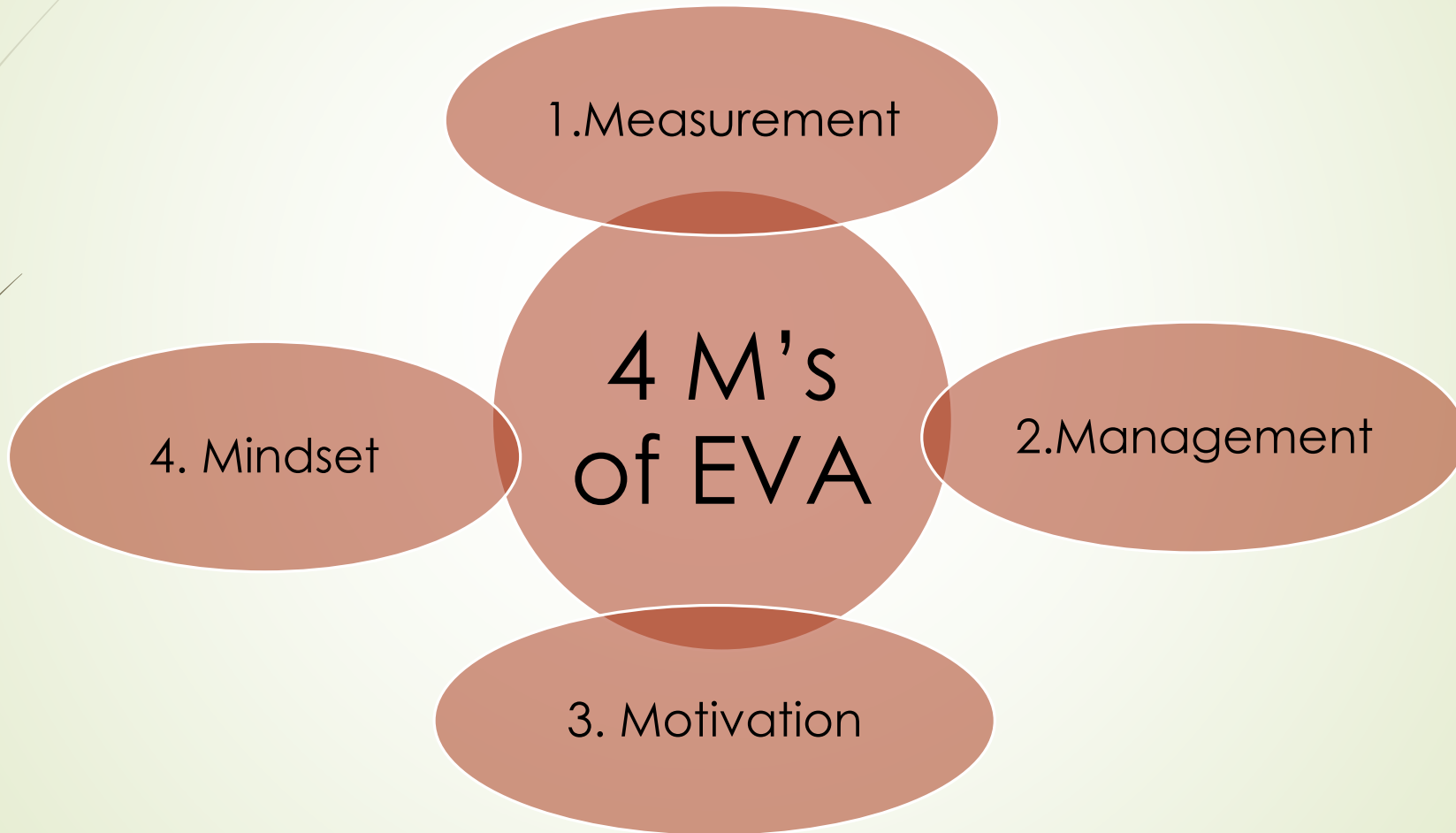
- PROMOTES CORPORATE CONTROL
 - BETTER ALLOCATION OF CAPITAL
 - BONUS/INCENTIVE PLAN
- 



IMPLEMENTING THE EVA SYSTEM

- GET TOP MANAGEMENT COMMITMENT
 - DEFINE RELEVANT EVA CENTRES
 - DEFINE RULES TO MEASURE EVA WITH GAAP ADJUSTMENTS
 - IDENTIFY DRIVERS AT EVA AT ALL LEVEL OF EVA CENTRES
 - DESIGN BONUS / INCENTIVE PLAN
 - EMPLOYEE TRAINING
- 

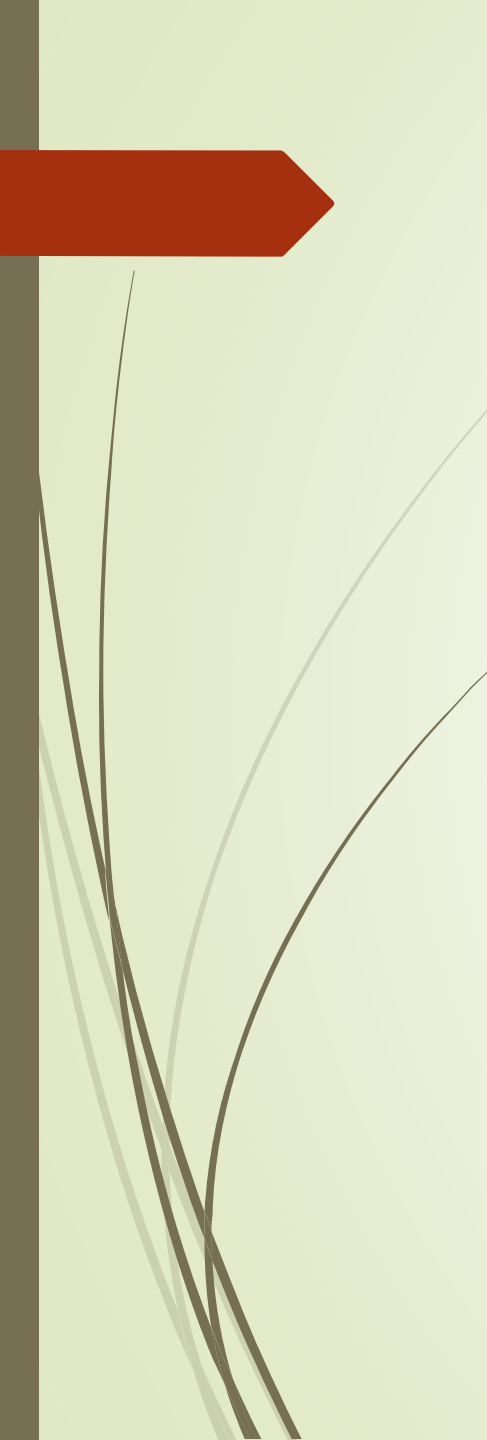
EVA IMPLEMENTATION – FOUR M's OF EVA





LIMITATIONS OF EVA

- IT DOES NOT CONSIDER CURRENT MARKET VALUE OF ASSETS
- CALCULATION OF K_e , PARTICULARLY R_f , DIFFERENT PEOPLE MAY TAKE DIFFERENT R_f s
- IT MAY NOT BE SUITABLE FOR THR FIRMS THAT HAVE INVESTED HUGE AMOUNT ON A PROJECT, WHICH HAS LONG GESTATION PERIOD
- IT WILL BE DIFFICULT TO MEASURE EVA WHEN DIVISIONS SHARE FACILITIES.

- 
- **Lessons from the experience of VBM adopters:**
 - 1. top management support and involvement is essential
 - 2. a good incentive plan is necessary which links performance and compensation
 - 3. employees should be properly educated
 - 4. the choice of value metric by itself (*per se*) is not critical. The metric chosen must be suited to the circumstances. (hitting good golf shot depends on the player than on the brand of club)
 - 5. VBM works well in certain cases, especially in firms where physical capital is more, than in firms which rely on intellectual capital
 - 6. one size does not fit all (need for customization)



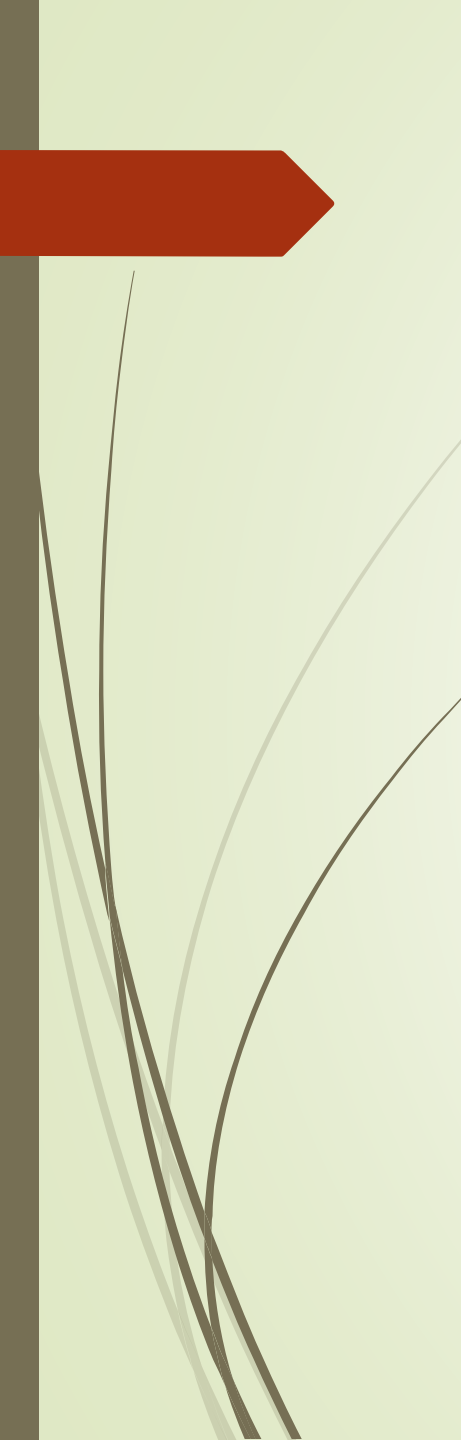
- **Potential and hurdles for VBM in India:**

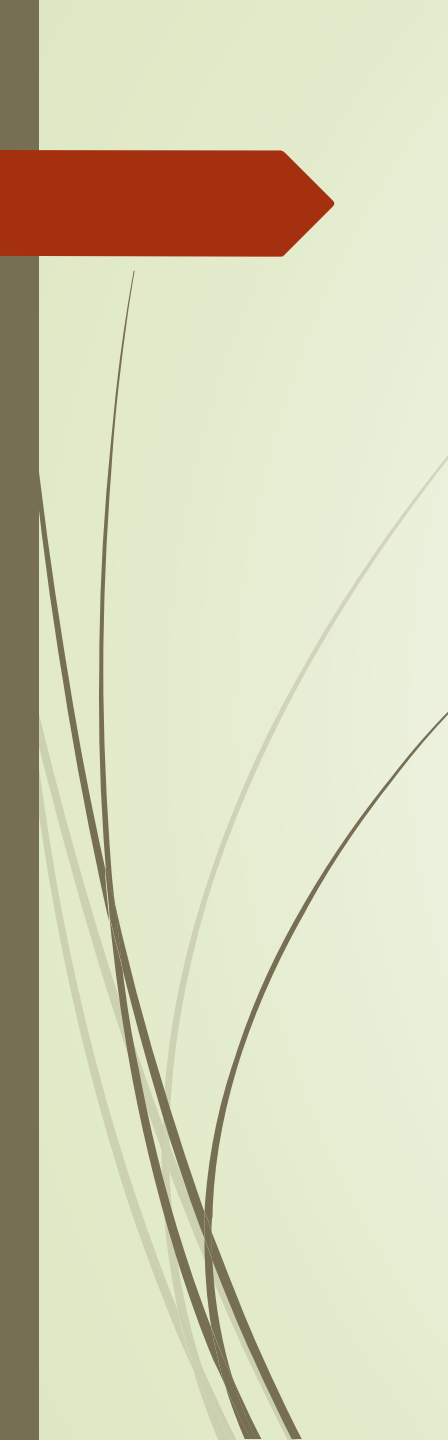
- The potential and urgency for applying VBM in Indian companies is immense for the following reasons:
 - 1. most companies have substantial physical assets which are under utilized. This is reflected in low productivity of capital
 - 2. historically, most business groups diversified into a number of sectors, thanks to various inducements and temptations
 - The heightening competition from the mid 1990s has forced many business houses to review and restructure their portfolios to achieve greater focus
 - 3. equity investors who fared poorly during 1992-2002 have been prodding corporate managements to focus on creating value for shareholders





- **Hurdles:**

- 1. Most managements do not seem to have genuine commitments to promote the welfare of the ordinary shareholders.
- There is divide between dominant shareholders and others. Dominant shareholders want control of the company at any cost irrespective of the welfare of all the shareholders

- 
- 2. financial literacy of employees is not high and many managements may not be keen to raise it
 - Financial numbers are kept closely guarded secret
 - It can be summed up as “let the operating people produce more, sell more, and control costs. Let them not bother about finances, on what terms we get finances and how we manage our cash flows”

- 
- 3. the accounting model seem to dominate corporate thinking and managers believe that stock prices are determined largely by reported earnings. No wonder managing the bottom line is a favorable corporate past time in India
 - 4. the degree of decentralization is not very high. Barring few operating decisions of a routine nature, most decisions are highly centralized. Employees down the line have hardly any say in financing decisions and no say in strategic operating decisions which is pre-condition for introducing VBM

- 
- 5. many top managements believe in monitoring employee behavior by watching over their shoulders and rewarding them on the basis of subjective personal assessment and are reluctant to incorporate objective assessment and give up discretion with respect to performance evaluation and incentive compensation

- 
- 6. managers are used to a compensation structure in which the fixed component is high and variable component is low.
 - They are not psychologically ready to accept performance linked and variable in nature, pay structure.
 - They welcome incentive compensation provided it does not in any way lower the fixed pay they are used to



THANK YOU



UNIT 5: CORPORATE RESTRUCTURING - II

PREPARED BY :

SUSHMITHA V

ASSISTANT PROFESSOR

MES INSTITUTE OF MANAGEMENT



CONTENTS

Mergers and Acquisitions – Meaning and differences, Reasons for Mergers, Types of Mergers, Valuation of firms – Assets Approach, Market Price Approach & EPS Approach– Problems



CONCEPTUAL FRAMEWORK

Restructuring of business is an integral part of modern business enterprises. The globalization and liberalization of Control and Restrictions has generated new waves of competition and free trade. This requires Restructuring and Re-organisation of business organization to create new synergies to face the competitive environment and changed market conditions.

Restructuring usually involves major organizational changes such as shift in corporate strategies. Restructuring can be internally in the form of new investments in plant and machinery, Research and Development of products and processes, hiving off of non-core businesses, divestment, sell-offs, de-merger etc. Restructuring can also take place externally through Mergers and Acquisitions (M&As) and by forming joint-ventures and having strategic alliances with other firms.

The aspects relating to expansion or contraction of a firm's operations or changes in its assets or financial or ownership structure are known as corporate re-structuring. While there are many forms of corporate re-structuring, mergers, acquisitions and takeovers, financial restructuring and re-organisation, divestitures de-mergers and spin-offs, leveraged buyouts and management buyouts are some of the most common forms of corporate restructuring.

The most talked about subject of the day is Mergers & Acquisitions (M&A). In developed economies, corporate Mergers and Acquisition is a regular feature. In Japan, the US and Europe, hundreds of mergers and acquisition take place every year. In India, too, mergers and acquisition have become part of corporate strategy today.

CORPORATE RESTRUCTURING IN INDIA

Mergers, acquisitions and corporate restructuring business in India have grown by leaps and bounds in the last decade. From about \$4.5 billion in 2004, the market for corporate control zoomed to \$ 13 billion in 2005 and reached to record \$56.2 billion in 2016. This tremendous growth was attributed to the fact that the foreign investors were looking for an alternative destination, preferably a growing economy as their own country was reeling under the pressure of recession. This was caused by the tough macro economic climate created due to Euro Zone crisis and other domestic reasons such as inflation, fiscal deficit and currency depreciation.

The terms 'mergers', 'acquisitions' and 'takeovers' are often used interchangeably in common parlance. However, there are differences. While merger means unification of two entities into one, acquisition involves one entity buying out another and absorbing the same. In India, in legal sense merger is known as 'Amalgamation'.

The amalgamations can be by merger of companies within the provisions of the Companies Act, and acquisition through takeovers. While takeovers are regulated by SEBI, Mergers and Acquisitions (M&A) deals fall under the Companies Act. In cross border transactions, international tax considerations also arise.



Merger

- ▶ Merger is the combination of two or more companies which can be merged together either by way of amalgamation or absorption. The combining of two or more companies, is generally by offering the stockholders of one company securities in the acquiring company in exchange for the surrender of their stock
- ▶ Types of merger:
 1. Horizontal Merger
 2. Vertical Merger
 3. Conglomerate Merger
 - a. Financial
 - b. Managerial
 - c. Concentric
 4. Other types
 - a. Within stream mergers
 - b. Circular combination
 - c. Cross border merger.

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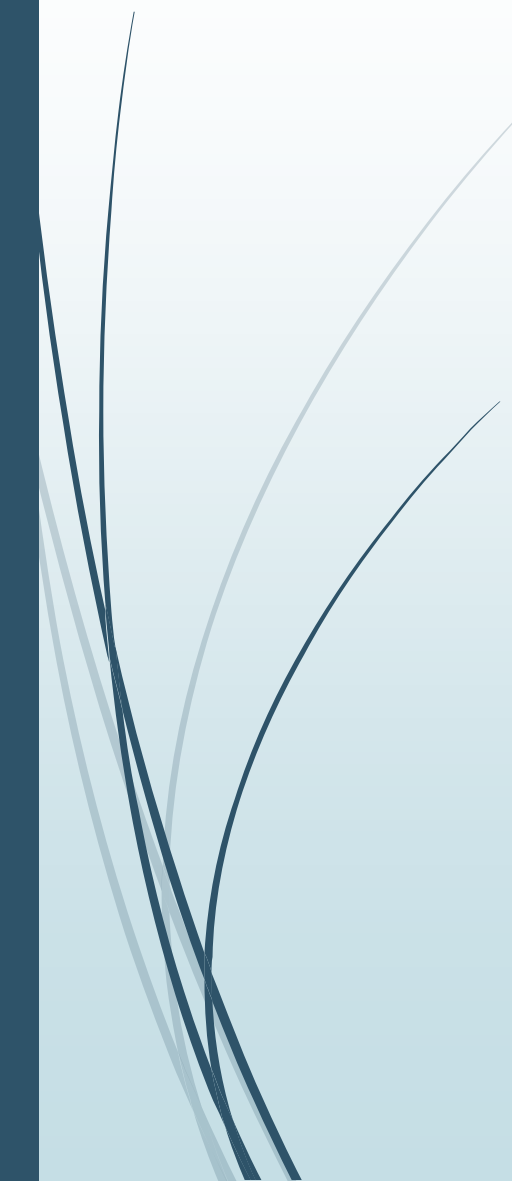
Takeover/Acquisition

Takeover means an acquirer takes over the control of the target company. It is also known as acquisition. Normally this type of acquisition is undertaken to achieve market supremacy. It may be friendly or hostile takeover.

- ▶ **Friendly takeover:** In this type, one company takes over the management of the target company with the permission of the board.
- ▶ **Hostile takeover:** In this type, one company takes over the management of the target company without its knowledge and against the wish of their management.



REASONS/BENEFITS

- ▶ SYNERGY
 - ▶ INCREASE IN EFFECTIVE VALUE
 - ▶ ECONOMIES OF SCALE
 - ▶ ECONOMIES OF SCOPE
 - ▶ FAST GROWTH
 - ▶ TAX BENEFITS
 - ▶ LIMITING OF ELIMINATION OF COMPETITION
 - ▶ STABILISATION THROUGH DIVERSIFICATION
 - ▶ UTILISATION OF SURPLUS FUNDS
 - ▶ MANAGERIAL EFFECTIVENESS
 - ▶ LOWERING FINANCIAL COST
- 

Rationale for M & A

Instantaneous growth, Snuffing out competition, Increased market share.	<ul style="list-style-type: none"> • Airtel – Loop Mobile (2014) (Airtel bags top spot in Mumbai Telecom Circle)
Acquisition of a competence or a capability	<ul style="list-style-type: none"> • Google – Motorola (2011) (Google got access to Motorola's 17,000 issued patents and 7500 applications)
Entry into new markets/product segments	<ul style="list-style-type: none"> • Airtel – Zain Telecom (2010) (Airtel enters 15 nations of African Continent in one shot)
Access to funds	<ul style="list-style-type: none"> • Ranbaxy – Sun Pharma (2014) (Daiichi Sankyo sold Ranbaxy to generate funds)
Tax benefits	<ul style="list-style-type: none"> • Burger King (US) – Tim Hortons (Canada) (2014) (Burger King could save taxes in future)
Instantaneous growth, Snuffing out competition, Increased market share.	<ul style="list-style-type: none"> • Facebook – Whatsapp (2014) (Facebook acquired its biggest threat in chat space)
Acquisition of a competence or a capability	<ul style="list-style-type: none"> • Flipkart – Myntra (2014) (Flipkart poised to strengthen its competency in apparel e-commerce market)
Entry into new markets/product segments	<ul style="list-style-type: none"> • Cargill – Wipro (2013) (Cargill acquired Sunflower Vanaspati oil business to enter Western India Market)
Access to funds	<ul style="list-style-type: none"> • Jaypee – Ultratech (2014) (Jaypee sold its cement unit to raise funds for cutting off its debt)
Tax benefits	<ul style="list-style-type: none"> • Durga Projects Limited (DPL) – WBPDC (2014) (DPL's loss could be carry forward and setoff)

Difference between merger and acquisition :

MERGER

- i. Merging of two organization in to one.
- ii. It is the mutual decision.
- iii. Merger is expensive than acquisition(higher legal cost).
- iv. Through merger shareholders can increase their net worth.
- v. It is time consuming and the company has to maintain so much legal issues.
- vi. Dilution of ownership occurs in merger.

ACQUISITION

- i. Buying one organization by another.
- ii. It can be friendly takeover or hostile takeover.
- iii. Acquisition is less expensive than merger.
- iv. Buyers cannot raise their enough capital.
- v. It is faster and easier transaction.
- vi. The acquirer does not experience the dilution of ownership.


Yeah, we're different.

Difference between Merger and Amalgamation

Points of difference	Amalgamation	Merger
Meaning	A new company is formed to take over the existing business of all the amalgamating companies. After the amalgamation, all combining units are automatically liquidated.	A merger is called absorption of weaker units by a strong unit.
Formation	Under amalgamation, a new organization is formed to effect fusion of the two or more existing companies.	Under merger an existing co. absorbs one or more existing companies. Absorbing company survives.
Initiation	Amalgamation takes place on the initiative of an outside promoter, since the business rivalry of several units normally acts as a bar to their coming together on their own initiative.	In merger, the surviving or acquiring company takes initiative and tries its level best to effect merger.
Effect on Shareholders	Amalgamation affects all shareholders.	In merger, the shareholders of absorbed companies are affected.




MOTIVATORS OF MERGERS AND AQUISITIONS

- ▶ EQUITY SHAREHOLDERS
 - ▶ MANAGERS
 - ▶ PROMOTERS
- 

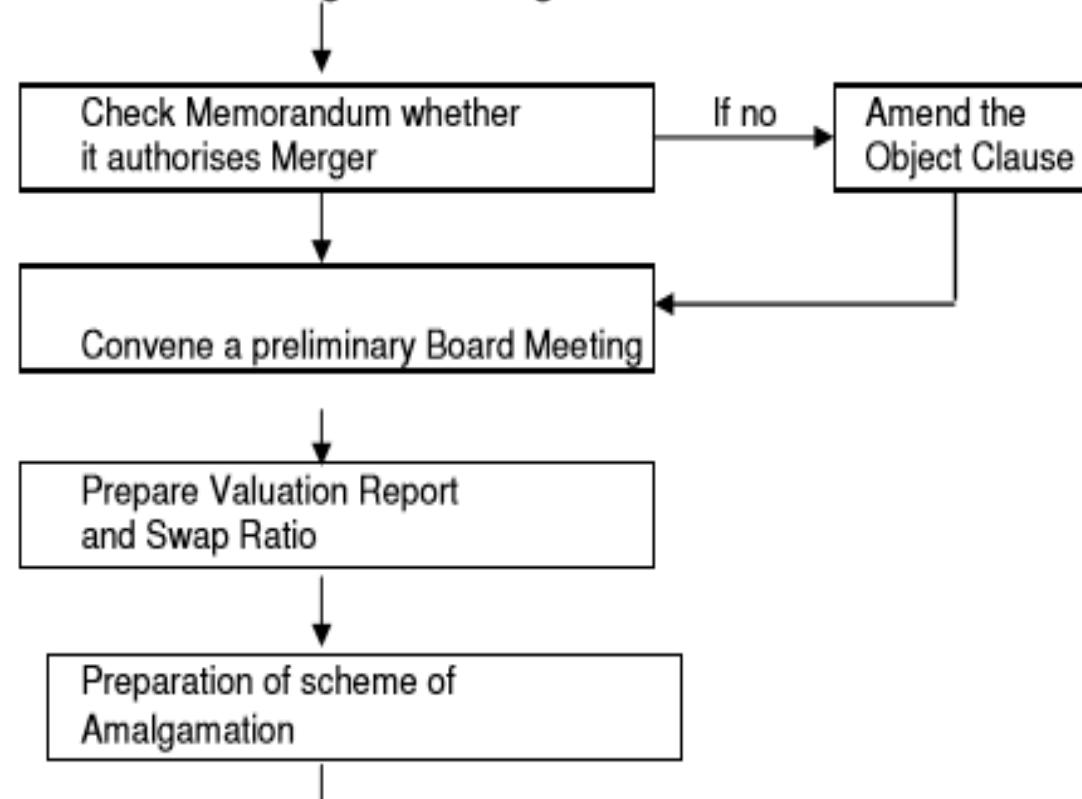


IMPACT OF MERGERS ON GENERAL PUBLIC

- ▶ CONSUMERS
 - ▶ WORKERS
 - ▶ GENERAL PUBLIC
- 

STEPS INVOLVED IN MERGER - A FLOW CHART

Process of Merger and Amalgamation



CONTINUED IN NEXT SLIDE

Convene Board meeting to approve the scheme, valuation report, swap ratio

Inform Stock Exchanges before meeting and outcome of the meeting

Application under Clause 24 of Listing Agreement filing the proposed scheme of Amalgamation

Application to the court seeking direction to call general meeting/creditors meeting

Convene general meeting

Inform the Stock Exchanges as and when required

Reporting results of the meeting to the concerned High Court

Petition to the court for Confirmation of the scheme

Obtaining court order sanctioning scheme

Filing copy of court order with ROC

Transfer of assets and liabilities

Allotment of shares to shareholders of transferor company

Listing of shares at Stock Exchange

Post merger integration

PROBLEMS ON EXCHANGE RATIO

1. You are required to determine the share exchange ratio to be offered to the shareholders of B Ltd. based on

Particulars	A Ltd.	B Ltd.
E/S capital of Rs10 each	200000	100000
P/S capital	40000	-
Share premium	-	4000
P&L Account	76000	8000
10% Debentures	30000	10000
Total liabilities	346000	122000
Fixed assets	244000	70000
Current assets	102000	52000
Total assets	346000	122000
PAT after Tax and Pref. Div.	48000	30000
Market price per share	24	27

- Net Asset Value
- EPS &
- Market price
- Which should be preferred from the point of view of A Ltd.?

Solution : Calculation of SER under different methods
 Acquiring Co. = A Ltd. Acquired/Target Co. = B Ltd.

► **NAV Method**

NAV = TA-TEL

PARTICULARS	A Ltd.	B Ltd.
Total assets	346000	122000
Less : TEL : 10% Deb	30000	10000
P/S	40000	-
NAV = TA-TEL	276000	112000
No. of ES (ESC/FV per ES)	20000	10000
NAV per share = NAV/No. of ES	276000/20000 = 1.38	112000/10000 = 1.12
SER = NAV per share of target co./NAV per share of acquiring co.	1.12/1.38 = 0.8116	
No. of shares to be issued by A Ltd = No. of shares of target * SER	10000* 0.8116 = 8116 Shares	

➤ EPS Method

Particulars	A LTD	BLTD
PAT AND PD (EAES)	48000	30000
No. of ES	20000	10000
EPS = EAES/ No. of ES	2.4	3
SER = EPS of target co./EPS of acquiring co	3/2.4 = 1.25	
No. of E shares to be offered by A Ltd. = No. of E shares of target co.*SER	10000* 1.25 = 12500 Shares	

- **MARKET PRICE METHOD**

SER = MP of Target co/ MP of Acquiring CO.

SER 27/24 = 1.125

No. of E shares to be offered by A Ltd. = No. of E shares of target co.*SER

10000 * 1.125 = 11250 Shares

Conclusion : A ltd should prefer share exchange ratio based on NAV method as it has to issue minimum number of shares (8100 shares) compare to other methods

2. You are required to determine the share exchange ratio to be offered to the shareholders of Y Ltd. based on

Particulars	A Ltd.	B Ltd.
E/S capital of Rs100 each	3000000	1500000
P/S capital	500000	-
Share premium	-	40000
P&L Account	760000	80000
10% Debentures	300000	100000
Total liabilities	4560000	1720000
Fixed assets	2440000	700000
Investments	1100000	520000
Current assets	1020000	500000
Total assets	4560000	1720000
PAT after Tax and Pref. Div.	340000	400000
Market price per share	240	270

- Net Asset Value
- EPS &
- Market price
- Which should be preferred from the point of view of A Ltd.?

3. Sunny Ltd. is studying the possible acquisition of Rainy Ltd. and the following information is available.


Particulars	Sunny Ltd.	Rainy Ltd.
PAT	300000	75000
Equity shares outstanding	50000	10000
P/E multiple	3	2

If the merger takes place by exchange of equity shares based on market price, what is the EPS of the new firm?




4. XYZ Ltd is considering merger with ABC Ltd. XYZ Ltd's shares are currently traded at Rs 25. it has 200000 shares outstanding and its EAT amounts to Rs 400000. ABC Ltd., has 100000 shares outstanding. Its current market price is Rs12.50 and its EAT is Rs 100000. The merger will be effected by means of a stock swap(exchange). ABC Ltd has agreed to a plan under which XYZ Ltd will offer the current market value of ABC Ltd's shares.

- i. What is the pre-merger EPS & PE ratios of both the companies?
- ii. If ABC Ltd's PE ratio is 8, what is its current market price? What is the exchange ratio? What will XYZ Ltd's post-merger EPS be?



5. Rosy Ltd. is contemplating the purchase of Lily Ltd., Rosy Ltd has 300000 shares having market price of Rs.30 per share while Lily Ltd has 200000 shares selling at Rs.20 per share. The EPS of Rosy Ltd., and Lily Ltd are Rs. 4 and Rs. 2.25 respectively. Management of both the companies are discussing proposal for exchange of 0.5 shares of Rosy Ltd for 1 share of Lily Ltd., You are required to

- i. Calculate EPS after merger
- ii. Show impact on EPS for the shareholders of both the companies.



6. L Ltd is a highly successful company and wishes to expand by acquiring other firms. Its expected high growth in earning and dividends is reflected in its PER is 17. The BOD of L Ltd has been advised that if it were to takeover firms with a lower PER than its own, using a share for share exchange, it could increase its reported EPS. P Ltd has been suggested as a possible target for takeover, which has a PE ratio of 10 & 1000000 shares in issue with a share price of Rs 15 each. L Ltd has 5000000 shares in issue with a share price of Rs 12 each.

Calculate the change in EPS of L Ltd., if it acquires P Ltd shares for Rs 15 per share, assuming that the price of L Ltd shares remain constant.

7. A Ltd is considering takeover of B Ltd and C Ltd. The financial data for the three companies are as follows:

Particulars	A Ltd	B Ltd	C Ltd
E/S capital of Rs 10 each	450	180	90
Earnings	90	18	18
Market Price of each share	60	46	46

Calculate :

- PE ratios
- EPS of A Ltd. after the acquisition of B Ltd and C Ltd separately.

Will you recommend the merger of either / both of the companies? Justify your answer.

8. S Ltd has agreed to takeover M Ltd as per the understanding between the management of the two companies, shareholders of M Ltd would receive 0.7 shares of S Ltd for each share held by them. The relevant data for the two companies are as follows:

Particulars	S Ltd (Rs in Lakhs)	M Ltd (Rs in Lakhs)
Net Sales	80	30
PAT	16	04
No. of shares	3.2	1
EPS	Rs 5	Rs 4
MPS	30	20
PE Ratio	6	5

Ignoring economies of scale and the operating strategies, you are required to calculate

- No. of shares after merger
- Combine the EPS
- Combine the PE ratio
- Market value per share
- Total market capitalization after the merger

9. Company X is considering purchase of Company Y. The following are the financial data of the two companies:

Particulars	X Ltd.	Y Ltd.
No. of Equity shares	400000	100000
EPS	Rs 6	Rs 4.5
MPS	30	20

Assuming that the management of the two companies have agreed to exchange shares in proportion to

- The relative EPS of the two companies
- 4 shares of company X for every 5 shares held in company Y
- You are required to illustrate and comment the impact of merger on EPS.

10. From the following particulars

Particulars	T Ltd.	A Ltd.
EAT (Rs)	700000	1000000
E/S outstanding	200000	400000
EPS (Rs)	3.50	2.50
PE Ratio (times)	10	14
MPS	35	35

A Ltd. is acquiring company, exchanging its shares on 1:1 basis for T Ltd.'s shares. The exchange ratio is based on the market prices of two companies.

- i. What will be the EPS subsequent to merger?
- ii. What is the change in EPS for the shareholders of A Ltd and T Ltd?
- iii. Determine the value of the post-merger firm.
- iv. Ascertain the profits accruing to shareholders of both the firms.



THANK YOU

EMERGING TRENDS IN ACCOUNTING

CHAPTER 05

MEANING OF DIGITAL TRANSFORMATION

Digital transformation refers to the strategic process of integrating digital technology into different areas of a business to change its processes.

The major goal of Digital transformation is to improve productivity, increase agility & to shift company culture to digital age.

Definition of Digital Transformation

“ It is the changes associated with the application of digital technology in all aspects of human society”

- Wikipedia

“At its heart, digital transformation is about connecting better with digital customers”

- Peggy chen

Features of Digital Transformation

1. Changing the way
2. Core operational
3. Rapidly & Radically change
4. Drive growth
5. Aspects of Human Society

Objectives of Digital Transformation

1. To increase speed to market with new products and services
2. To increase employee productivity
3. To increase responsiveness to customer

challenges of Digital Transformation

1. Lack of Employee engagement
2. Inadequate management support
3. Data Privacy & Security concerns
4. Budgetary constraints.
5. Limited in house Skills & expertise

Big Data Analytics In Accounting

Big Data can be defined as extremely large sets of unstructured data coming in various forms gathered from different sources at a rate so fast that it is way beyond the processing power of a traditional server.

It is characterised by 3 Vs where-

- 1) Volume
- 2) Velocity
- 3) Variety

Objectives of Big Data in Accounting

1. Visualization Software
2. Process larger amounts of accounting Data
3. Improves Risk analysis
4. Risk Management
5. Data governance & Privacy

Cloud Computing in Accounting

Cloud computing is a paradigm that focuses on sharing data and computations over a Scalable network nodes.

Example of such nodes include end users, data centres & Web services.

In terms such network of nodes as a **cloud**



Benefits of cloud computing in Accounting

1. Reduced costs
2. Geographically unlimited Access
3. Increased performance
4. Unlimited Data storage, processing capacity and automated backup
5. User friendly
6. Enables sharing of companies financial data to clients

Accounting with Drones

1. Drones are better inspecting, observing and monitoring than humans.
2. They are more flexible than humans and can carry various data recording and generating devices.
3. They are frequently used for photography, surveillance, observations and recording in many industries such as film making, mining, agriculture and surveillance.
4. The readings and videos of drone can be fed into software applications for analysis and understanding.



5. This use of drone technology can be efficiently applied in asset valuation ,observations and inventory counts

6.It is also helpful in conducting risk assessment work.

Mechanical Robots

- Robots are frequently used in inventory and warehouse projects along side human workers.
- Some industries have connected their robots to cloud based alert system that analyses the data feeds and and prevents disruptions to manufacturing by constantly maintaining for potential breakdowns.

Software bots

- They are simple or complex computer programs designed to do specific actions such as automating repetitive task or stimulating human users.
- Bot is short for Robot
- Automation or use of software bots deliver value for clerical and spreadsheet process that are repetitive and rule based.

GREEN ACCOUNTING

- The green accounting is a type of accounting that attempts to factor environmental costs into financial results of operations.
- It has been argued that gross domestic product ignores the environment and therefore policymakers need a revised model that incorporates green accounting.



Green Accounting involves putting a value on a country's natural Resources like forests and seas.

It is also known as Environmental Accounting, Environmental Reporting Environmental Sensitivity.

Limitation of Green Accounting

- There is no standard accounting method
- Comparison between two countries or firms is not possible if method of accounting is different.
- It mainly consider cost internal to the company and excludes cost to society.
- Input for Green Accounting is not easily available because costs and benefits relevant to the environment are not easily measureable.
- The cost for its tools and application initially is high.

HUMAN RESOURCE ACCOUNTING



Meaning Of Human Resource Accounting

Human resource accounting is defined as:

- The art of valuing,
- recording and
- presenting systematically
- the worth of human resources in the books of account of an organization.

Importance of Human Resource Accounting

- **Information of manpower planning**
- **Information for making personnel policies**
- **Utilization of human resources**
- **Proper placement**
- **Increase Morale and motivation**
- **Attract best human resource**

MODELS OF HUMAN RESOURCES ACCOUNTING, OR, VALUATION OF HRA

MODELS OF HRA

HR COST ACCOUNTING

- Historical cost Method
- Replacement cost method
- Opportunity cost method
- Standard cost method

HR VALUE ACCOUNTING

- Herman's Model
- Lev - Schwartz's Model
- Flamholtz's Model
- Jaggi & Lau's Model

(1) Historical Cost Approach

- **Developed by: BRUMMET, FLAMHOLTZ and PYLE**
- **Actual costs incurred on human resources are capitalized and written off over the expected useful life of human resources.**
- **Procedure for capitalization and amortization remains the same for other physical assets.**

(2) Replacement Cost Approach

- Developed by RENSIS LIKERT and ERIC G.FLAMHOLTZ
- Valuation on the basis of the cost the firm will have to undertake if existing human resources are required to be replaced with other persons of equivalent experience and talent.
- Allows for changes in the cost of acquiring and developing employees.
- Determination of the value of total human organization on the basis of the assumption that a similar organization is to be created from scratch.

(3) Opportunity Cost Approach

- **Developed by HEKIMIAN and JONES**
- **Values human resources on the basis of the economic concept of opportunity cost**
- **A human resource asset has a value only when it is scarce. i.e employment in one division is possible and not in the other division.**

Standard cost Approach

- The standard cost method of human resource accounting involves **determining the total cost of recruiting and hiring each employee, as well as the cost of any training or development**



Models of HRA

Lev and Schwartz Model

- ❑ This model determines the value of human capital embodied in a person at a particular time
- ❑ It is the present value of his remaining future earnings from employment in the form of direct & indirect payments & benefits

(B) Flamaholtz Model (1971)

- Individual's value to an organization is determined by the services he is expected to render to the organization during the period he is likely to remain with the organization in various positions or services states.
- The present value of human resource may be derived by discounting the realizable value of expected future services at a specified rate.

HERMANSON'S MODEL

- This model is given by ROGER H HERMANSONS.
- This model is based on assumption that a relationship can be established between employees salary and his value to the organisation.
- In this the present value of discounted wages of future is calculated for each year for coming 5 years.
- The present value is further adjusted by efficiency ratio.

Jaggi and Lau Model

- Valuation of assets on group basis.
- A group implies homogeneous employees who may or may not belong to the same department or division.
- Easy evaluation on group basis.



Inflation Accounting

DEFINITION OF INFLATION ACCOUNTING

- ❑ A state in which the value of money is falling that is prices are rising.
- ❑ A process of steadily rising prices resulting in diminishing purchasing power of a given nominal sum of money.

Inflation Accounting - It refers to the process of adjusting the financial statements of a company to show the real financial position of the company during inflationary period.

It requires adjustments in financial statements of a company according to current price index prevalent in the economy.

Inflation Accounting involves recording of business transactions at current value, to analyze the impact of changes in price or business transactions on costs and revenues, assets and liabilities of a company.

Inflation Accounting

Advantages

- 1 Fair View
- 2 Accurate Depreciation
- 3 Reasonable Assessment
- 4 True Value Reflection
- 5 No Overstatements

Disadvantages

- 1 Never-Ending Process
- 2 Complicated
- 3 Subjectivity
- 4 Merely Theoretical
- 5 Expensive

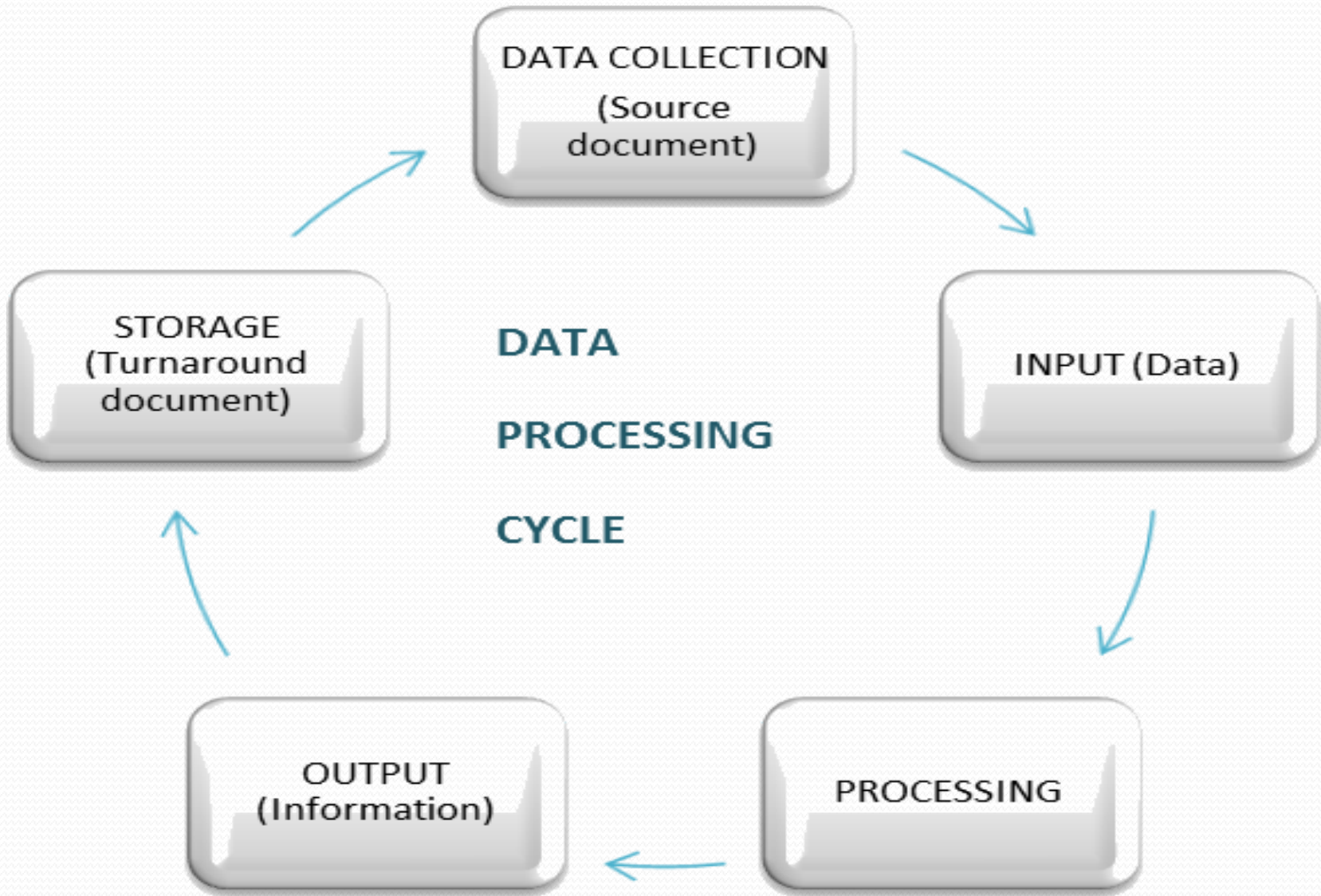
Inflation Accounting Methods

- ▶ CPP - Current Purchasing Power
- ▶ CCA - Current Cost Accounting
- ▶ The Finnish AHI-Method (Aktivoitujen Hankintamenojen Indeksointisovellutus)

Database definition



- **A database is a collection of information that is organized so that it can easily be accessed, managed, and updated.**
- Example: A telephone book
- Write down three other examples of databases (they do not have to be computer based)



MANAGEMENT ACCOUNTING

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SYLLABUS

▶ **UNIT 1: INTRODUCTION TO MANAGEMENT ACCOUNTING**

Meaning, Definition, Objectives, Nature and Scope, Role of Management Accountant, Relationship between Financial Accounting and Management Accounting, Relationship between Cost Accounting and Management Accounting, Advantages and Limitations of Management Accounting; Management Reporting – Requisites of a Good Reporting System, Principles of Good Reporting System, Kinds of Reports, Drafting of Reports under Different Situations.

▶ **UNIT 2: RATIO ANALYSIS**

Ratio Analysis–Meaning and Definition of Ratio, Meaning of Accounting Ratio, Ratio Analysis Uses and Limitations, Classification of Ratios– Liquidity Ratios, Profitability Ratios and Solvency Ratios Problems



➤ **UNIT 3: CASH FLOW ANALYSIS**

Meaning and Definition of Cash Flow Statement, Concept of Cash and Cash Equivalents, Uses and Limitations of Cash Flow Statement, Difference between Cash Flow Statement and Fund Flow Statement; Provisions of Ind. AS-7; Procedure for Preparation of Cash Flow Statement – Cash Flow from Operating Activities – Cash Flow from Investing Activities and Cash Flow from Financing Activities; Preparation of Cash Flow Statement according to Ind. AS-7

➤ **UNIT 4: MARGINAL COSTING**

Meaning and Definition of Marginal Cost, Marginal Costing, Features of Marginal Costing, Terms used in Marginal Costing – P/V Ratio, BEP, Margin of Safety, Angle of Incidence; Break Even Analysis – Assumptions and Uses - Problems. Break Even Chart Problems

Decision Making under Marginal Costing – Make or Buy Decisions, Profitable Product Mix, Addition of a New Product, Discontinuance of an Existing Product – Simple Problems



➤ **UNIT 5: BUDGETARY CONTROL**

Introduction – Meaning & Definition of Budget and Budgetary Control, Objectives of Budgetary Control,

Essential Requirements of Budgetary Control, Advantages and Disadvantages of Budgetary Control,

Types of Budgets- Functional Budget, Cash Budget, Sales Budget, Purchase Budget and Production

Budget; Fixed and Flexible Budgets - Problems on Flexible budget and Cash budget only

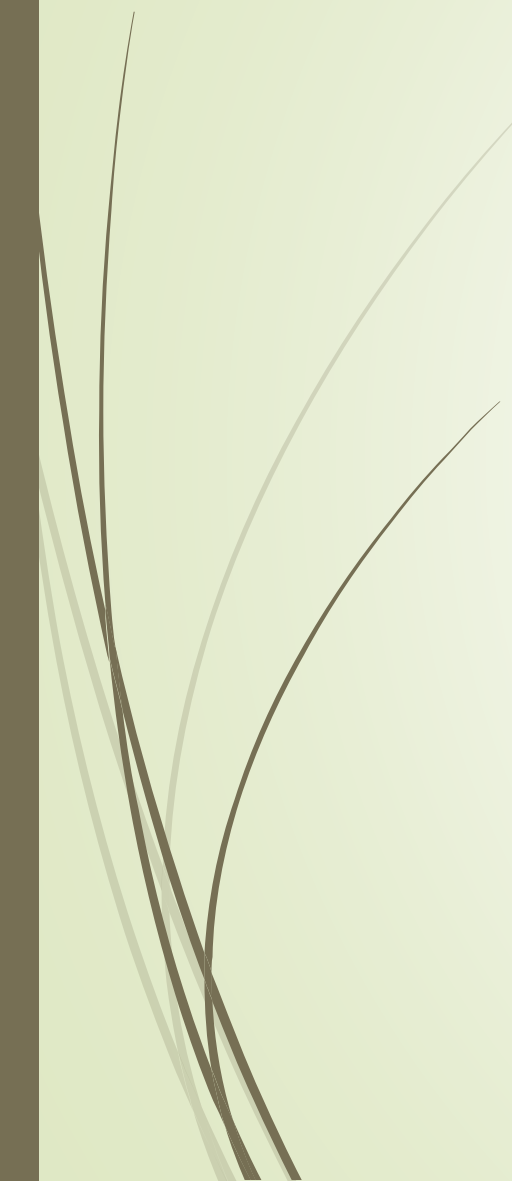


UNIT 1:
INTRODUCTION TO MANAGEMENT ACCOUNTING





EVOLUTION OF MA

- PRIOR TO 1825 – BOOK KEEPING
 - 1825 – 1925 : FINANCIAL AND COST ACCOUNTING
 - 1925 – 1975 : MANAGEMENT ACCOUNTING
 - SINCE 1975 : MANAGEMENT ACCOUNTING AND INFORMATION SYSTEMS
- 

INTRODUCTION

- ▶ Accounting involves collection, recording, classification and presentation of financial data.
- ▶ Meaning of the term 'Accounting' and the different users has already been covered in the earlier semesters
- ▶ The word 'Accounting' can be classified into three categories:





INTRODUCTION TO MA

- ▶ Management accounting can be viewed as Management-oriented Accounting.
- ▶ Basically it is the study of managerial aspect of financial accounting, "accounting in relation to management function".
- ▶ The primary task of management accounting is, therefore, to redesign the entire accounting system so that it may serve the operational needs of the firm.
- ▶ If furnishes definite accounting information, past, present or future, which may be used as a basis for management action. The financial data are so devised and systematically development that they become a unique tool for management decision.



MEANING & CONCEPT OF MANAGEMENT ACCOUNTING:

- ▶ Management Accounting is a new approach to accounting. The term Management Accounting is composed of two words — Management and Accounting. It refers to Accounting for the Management.
- ▶ Accounting which is primarily concerned with the provision of information relating to the various aspects of the business like costs, profits, funds, etc., to the management for taking right decision is called Management Accounting.
- ▶ Management accounting is that field of accounting, which deals with providing information including financial accounting information to managers for their use in planning, decision-making , performance evaluation, control, management of costs and cost determination for financial reporting.
- ▶ Managerial accounting contains reports prepared to fulfill the needs of managements.



Definition of Management Accounting:

- “Management Accounting is concerned with accounting information, which is useful to the management”. - Robert N. Anthony.
- “Management Accounting is concerned with the efficient management of a business through the presentation to management of such information that will facilitate efficient planning and control”. - Brown and Howard.
- “A system of collection and presentation of relevant economic information relating to an enterprise for planning, controlling and decision making”. – ICWAI

CONCLUSION

Thus, management accounting is concerned with data collection from internal and external sources, analyzing, processing, interpreting and communicating information for use, within the organization, so that management can more effectively plan, make decisions and control operations. The information to be collected and analyzed has been extended to its competitors in the industry. This provides more meaningful clues for proper decision-making in the right direction.

- The information in the management accounting system is used for three different purposes:
- A. Measurement
- B. Control and
- C. Decision-making

Situation specific: The reports in managerial accounting are situation specific. Information in the accounting statements is to be culled out to meet the requirements of the relevant situation and presented to the management for specific problem, situation or decision.



OBJECTIVES / FUNCTIONS OF MANAGEMENT ACCOUNTING:

- Storehouse of Reliable Data
- Modification and Presentation of Data
- Communication and Coordination
- Financial Analysis and Interpretation
- Control
- Supplying Information to Various Levels of Management
- Reporting to Management
- Helpful in taking Strategic Decisions



Nature / Characteristics of Management Accounting:

- Providing Accounting Information
- Concerned with forecasting
- Cause and effect analysis
- Use of Special Techniques and concepts
- Taking Important Decisions
- Achieving of Objectives
- Supplies Information and not decision
- Increase in Efficiency



SCOPE OF MANAGEMENT ACCOUNTING:

- Financial Accounting
- Cost Accounting
- Revaluation Accounting
- Budgetary Control
- Inventory Control
- Statistical Methods
- Interim Reporting
- Taxation
- Office Services
- Internal Audit



ROLE OF MANAGEMENT ACCOUNTANT:

- Stewardship Accounting
- Long-term and Short-Term Planning
- Developing Management Information System (MIS)
- Maintaining Optimum Capital Structure
- Participating in Management Process
- Decision-Making
- Reporting and control
- Appraisal of external effects
- Administration of tax
- Protection of assets

Relationship / Differences between Management Accounting and Financial Accounting:

Basis	Financial Accounting	Management Accounting
Age	It is several centuries old.	It is just a few decades old.
Subject matter	It is concerned with determining the profit or loss of a particular period and the financial position as on a particular date.	It is concerned with presentation of information to the management for the efficient discharge of managerial functions.
Events	It considers only monetary events.	It considers both monetary and non-monetary events.
Coverage	It deals with the overall performance of the enterprise.	It deals with details of the various divisions, departments, products or other sub-divisions of the enterprise.
Focus	Its focus is on all aspects of business operation.	Its focus is on any particular aspect of the business operation.
Users of data	It is designed to provide information to shares holders, debenture holders, creditors, investors and the government.	It is designed to provide information to the insiders, i.e., management for taking right decision.
Nature of Data	It is concerned with historical data.	It is concerned with past data as well as estimates for the future.
Periodicity of reporting	Period of reporting is longer when compared with Management Accounting.	Period of reporting is shorter.

Relationship / Differences between Management Accounting and Financial Accounting (Continued):

Principles and Conventions	It is governed by certain accounting principles and conventions.	It is not governed by any accounting principles and conventions.
Objectivity	It is based on measurement rather than judgment. It is more objective and less subjective.	It is based on judgment rather than measurement. It is less objective and more subjective.
Standardization	It is meant for external use and is standardized.	It is meant for internal use and not standardized.
Flexibility	Since it is standardized, it is more rigid and less flexible.	Since it is not standardized, it is less rigid and more flexible.
Legal Compulsion	It has become more or less compulsory to all forms of business organization.	It is purely optional, though it is desirable because of its immense utility.
Compulsory Auditing	Auditing of accounts kept under Financial Accounting is compulsory for Joint Stock Companies.	Auditing of statements prepared under management accounting is not compulsory.
Dependence	It can exist independently of Management Accounting.	It is dependent on Financial Accounting.

Difference between cost accounting and management accounting

Basis	Cost Accounting	Management Accounting
Functions	It is primarily concerned with ascertainment of cost and profitability, and control of cost with the help of techniques, such as standard costing, budgetary control and responsibility accounting.	It is concerned with all such matters in a wider perspective which would go to assist the management in the formulation of policies, improvement of productivity, profitability, etc.
Scope	Cost accounting primarily deals with cost data.	It has a wider scope when compared to Cost Accounting. It considers both cost and revenue data.
Decision making	Cost Accounting takes into account mostly the cost factors. It suggests to the management the best of the alternatives by the use of differential costing technique.	It takes into consideration the cost as well as non-cost factors, while deciding upon the alternatives.
Interpretation	Cost Accounting just reports cost data.	It not only reports financial and cost data, but also interprets such data in the light of other relevant information.
Parties interested	Both internal and external parties are interested in the data provided by Cost Accounting.	Only internal parties are interested in the data provided by Management Accounting.



NEED/ IMPORTANCE/ADVANTAGES OF MANAGEMENT ACCOUNTING:

- Increases efficiency
- Proper planning
- Measurement of performance
- Maximizing profitability
- Improves service to customers
- Effective management control



Limitations of Management Accounting:

- Accuracy is not ensured
- A tool in the hands of management
- Strength and Weakness
- Costly Affair
- Lack of Knowledge and Understanding
- Persistence on Intuitive Decision-making
- Psychological Resistance
- Evolutionary Stage



MANAGEMENT REPORTING INTRODUCTION

- The success or failure of any business undertaking depends primarily on earning revenue that would generate sufficient resources for sound growth.
- To achieve this objective, the management should discharge its functions efficiently and effectively.
- The reporting systems are highly useful to the management for effective planning and control.
- A regular system of reporting is considered as a better guidance for prompt decision making. Hence, it is necessary to have a good management reporting system.

DEFINITION OF MANAGEMENT REPORTING

- According to Kohler reporting refers to *"A body of information organized for presentation or transmission to others. It often includes interpretations, recommendations and findings with supporting evidence in the form of other reports"*.
- In other words the process of providing information to the management is known as Management Reporting. The word "Information" refers to the data processed or evaluated for a specific purpose.
- **Objectives of Management Reporting**
 1. To ensure the operational efficiency of the concern.
 2. To facilitate the maximum utilization of resources.
 3. To enable to motivating improving discipline and morale.
 4. To help the management for effective decision making.



Requisites of a Good Reporting System

- Proper Form
- Contents
- Promptness
- Accuracy
- Comparability
- Consistency
- Relevancy
- Simplicity
- Flexibility
- Cost-Benefit Analysis
- Principle of Exception
- Controllability



Principles of Good Reporting System

- Proper Flow of Information
- Proper Timing
- Accurate Information
- Relevant Information
- Basis of Comparison
- Reports should be Clear and Simple
- Cost
- Evaluation of Responsibility
- Principle of Scheduling
- Factual



Kinds of Reports

- Formal or Informal Reports
- Short or Long Reports
- Informational or Analytical Reports
- Proposal Report
- Vertical or Lateral Reports
- Internal or External Reports
- Periodic Reports
- Functional Reports

Report Meant for the Top Level of Management : Examples

- Top Level Management is concerned with the formulating policies planning and setting goals and objectives. This level of management consisting of the Board of Directors including Chairman. Managing Directors. General Manager or any other chief executive as the case may be. The report to this level of management should be specifically summarized with all aspects of operating performance together with a comparison of actuals with budgeted performance. The usual reports sent to this level of management are:
 - (a) Reports on budgeted and actual profit
 - (b) Reports on sales and production
 - (c) Capital budget
 - (d) Master budget
 - (e) Periodical financial reports
 - (f) Plant utilization report
 - (g) Machine and labour utilization report
 - (h) Reports on research and development activities
 - (i) Project evaluation report
 - (G) Report on stock of raw materials, work in progress and finished goods
 - (k) Overhead cost absorption and efficiency reports



Reports Meant for Middle Level Management

- The Middle Management is constituted of the heads of all departments such as production department headed by production manager. marketing department headed by marketing manager and so on.
- This level of management is concerned with the functioning and control of their departments. They act mainly as coordinating executives to administer policies directly through operating supervisors and evaluate their performance.
- Hence. they may require more detailed information about their departments and at frequent intervals. Generally. the middle level management should receive the following reports at different intervals:



Examples:

➤ **(a) Purchase Manager:**

- (1) Reports on material price and usage variance
- (2) Reports on material carrying cost, loss of material in the storage etc.
- (3) Reports on trends in the pertaining of various items of materials.

➤ **(b) Materials Manager:**

- (1) Reports on stock of raw materials, work in progress and finished goods
- (2) Reports on material wastage and losses
- (3) Reports on stock of materials planning and control
- (4) Reports on level of materials stock at the stores
- (5) Reports on surplus and deficiency report.



➤ **(c) Production Manager:**

- (1) Reports on budgeted and actual production
- (2) Reports on overtime work and ideal time
- (3) Reports on labour utilization statement
- (4) Reports on machine utilization statement
- (5) Reports on scrap production cost
- (6) Reports on any accident causing dislocation of activity.

➤ **(d) Sales Manager:**

- (1) Reports on budgeted and actual sales
- (2) Reports on sales efficiency
- (3) Reports on orders received and orders executed
- (4) Reports on cash sales and credit sales
- (5) Reports on stock of finished goods
- (6) Reports on market share and market potential
- (7) Reports on sales promotion efficiency.

REPORTS MEANT FOR JUNIOR LEVEL MANAGEMENT

► The lower level management is directly responsible for executing various policies assigned by top management. This level of management is constituted of Foremen, Supervisors and sectional in charges etc. They are in touch with the day-to-day performance of their section. The report meant for this level are mainly in terms of physical units. The usual reports sent to this level are :

- (1) Reports on labour efficiency variance
- (2) Reports on ideal time, overtime and machine utilization
- (3) Reports on materials usage variance
- (4) Reports on credit collections and outstanding

DRAFTING OF REPORTS UNDER DIFFERENT SITUATIONS.

➤ Writing and Designing a Report

1. Deciding the Nature and Purpose of the Report

2. Planning the Structure of the Report

(Collection of necessary facts and data, Analysis of factual information & Discussion)

(Heading, Address, Contents, Terms of Reference & Body of the Report)

3. Drafting of a Report

(Collection of data and its analysis, Format of a report, Writing of report, (guiding principles),
Presentation of report)



THANK YOU

UNIT 1

E-BUSINESS

Topics of UNIT 1

- Introduction
- E-Commerce – Definition
- History of E-commerce
- Differences between E-Commerce and E-Business.
- Comparison of Traditional Commerce and E-commerce
- Advantages and Disadvantages of E-Commerce
- E-Commerce Business Models – B to B, B to C, C to C, C to B and P to P (Peer to Peer) Models.
- Emerging trends, Web Auctions.
- Virtual Communities, Portals.
- E-Business Revenue Models.

Introduction

- E-Business is application of ICT(Information and communication Technology) to support activities of Business.
- Commerce is exchange of goods and services between one or more persons.
- Using ICT for Commerce is know as E-Business.

E-Commerce – Definition

- The process of buying and selling goods and services electronically involving transaction using the internet, networks and other digital technologies.
- E-Commerce is those commercial transactions carried out using electronic means like internet, networks and digital technologies.

History of E-commerce

- 1950 -1960 IBM pioneers OLTP(On line Transaction processing) a way of handling money transactions on real time basis using sophisticated computers.
- 1980 CompuServe, Prodigy and AOL (American online) let people to shop from home using there computers and Telephone lines.
- 1989 Tim Burns Lee invented WWW which started a revolution in E-Commerce.
- 1994 Jeff Benzos starts Amazon.
- 1994 Marc Andreessen develops Netscape Navigator web browser which allows credit card transaction securely this helps the growth of E-Commerce further

Differences between E-Commerce and E-Business.

E – Commerce

Open system [statistics]

Not secured

Deals more with technology

Always operate on Internet

Involves all types of commerce transaction

Used for small and bulky transaction

Focused on Business to consumer activities

Does not involve the use of EDI

e-commerce is an extension of a traditional business model

E - Business

Closed System

Secured

Deals with processes needed to facilitate e-commerce

Always operates on intranet

Involves explicitly business transaction

Used for bulky transaction

Focused more on business to business activities

Uses EDI

e-business is an online business model

Comparison of Traditional Commerce and E-commerce

Traditional Commerce	E- Commerce
Touch and feel	No Touch and feel
Brick and Mortar store (Fixed Place)	On line store (No Fixed Place)
Fixed Time	No fixed time (24/7/365)
Less flexible to add or remove product	Flexible to add or remove product
Cost of doing business is High	Cost of doing business is Low
Middleman cannot be eliminated in some cases so cost of goods will be high	Middleman can be eliminated so cost of goods will be low
Physical visit to the store cannot be eliminated	Physical visit is not there
Inventory size is huge	Inventory size is small
Market for products is limited	Market for products is world wide

Advantages of E-Commerce

- **Non-Cash Payment:** E-Commerce enables the use of credit cards, debit cards, smart cards, electronic fund transfer via bank's website, and other modes of electronics payment.
- **24x7 Service availability:** E-commerce automates the business of enterprises and the way they provide services to their customers. It is available anytime, anywhere.

- **Advertising/Marketing: E-commerce increases the reach of advertising of products and services of businesses. It helps in better marketing management of products/services.**
- **Improved Sales: Using e-commerce, orders for the products can be generated anytime, anywhere without any human intervention. It gives a big boost to existing sales volumes.**

- **Support: E-commerce provides various ways to provide pre-sales and post-sales assistance to provide better services to customers.**
- **Inventory Management: E-commerce automates inventory management. Reports get generated instantly when required. Product inventory management becomes very efficient and easy to maintain.**
- **Communication improvement: E-commerce provides ways for faster, efficient, reliable communication with customers and partners.**

- **Lower Cost**

- **Doing e-business is cost effective; it reduces logistical problems and puts a small business on a par with giants companies.**
- **For example: A basic over-the-counter transaction costs Rs.50 to process; over the Internet, the same transaction costs about Rs.10.**

- **Economy**

- **Unlike the brick-and-mortar environment, in e-commerce there is no physical store space, insurance, or infrastructure investment. All you need is an idea, a unique product, and a well-designed web storefront to reach your customers, plus a partner to do fulfillment. This makes e-commerce a lot more economical.**

- **Higher Margins**

- E-commerce means higher margins. For example, the cost of processing an airline ticket is Rs500. According to one travel agency, processing the same ticket online costs Rs.100. Along with higher margins, businesses can gain more control and flexibility and are able to save time when manual transactions are done electronically.

- **Quick Comparison Shopping**

- E-commerce helps consumers to do comparison shop. Automated online shopping assistants called hop bots search online stores and find deals on everything from apples to printer ribbons.

• **Better Customer Service**

- E-commerce means better and quicker customer service. Online customer service makes customers happier. Instead of calling your company on the phone, the web merchant gives customers direct access to company personal account online. This saves time and money. For companies that do business with other companies, adding customer service online is a competitive advantage. The overnight package delivery service, where tracking numbers allow customers to check the whereabouts of a package online, is one good example.

● **Productivity Gains**

- Weaving the web throughout an organization means improved productivity. For example IBM incorporated the web into every corner of the firm – products, marketing, and practices. The company figured it would save \$750 million by letting customers find answers to technical questions via its website. The total cost savings in 1999 alone was close to \$1 billion.
- **Teamwork E-mail is one example of how people collaborate to exchange information and work on solutions. It has transformed the way organizations interact with suppliers, vendors, business partners, and customers. More interactions mean better results.**

- **Knowledge Markets**

- E-commerce helps create knowledge markets. Small groups inside big firms can be funded with seed money to develop new ideas. For example, DaimlerChrysler has created small teams to look for new trends and products. A Silicon Valley team is doing consumer research on electric cars and advising car designers.

- **Information Sharing, Convenience, And Control**

- Electronic marketplaces improve information sharing between merchants and customers and promote quick, just-in-time deliveries. Convenience for the consumer is a major driver for changes in various industries. Customers and merchants save money; are online 24 hours a day, 7 days a week; experience no traffic jams, no crowds, and do not have to carry heavy shopping bags

Disadvantages of E-Commerce

- **Security**
- Security continues to be a problem for online businesses. Customers have to feel confident about the integrity of the payment process before they commit to the purchase.
- **System And Data Integrity**
- Data protection and the integrity of the system that handles the data are serious concerns. Computer viruses are rampant, with new viruses discovered every day. Viruses cause unnecessary delays, file backups, storage problems, and other similar difficulties. The danger of hackers accessing files and corrupting accounts adds more stress to an already complex operation.

• **System Scalability**

- A business develops an interactive interface with customers via a website. After a while, statistical analysis determines whether visitors to the site are one-time or recurring customers. If the company expects 2 million customers and 6 million shows up, website performance is bound to experience degradation, slowdown, and eventually loss of customers. To stop this problem from happening, a website must be scalable, or upgradable on a regular basis. Scalability is a costly affair.

• **E-commerce Is Not Easy**

- So far, success stories in e-commerce have forced large business with deep pockets and good funding. According to a report, small retailers that go head-to-head with e-commerce giants are fighting losing battle.
- As in the brick-and-mortar environment, they simply cannot compete on price or product offering. Brand loyalty is related to this issue, which is supposed to be less important for online firms. Brands are expected to lower search costs, build trust, and communicate quality. A search engine can come up with the best music deals, for example, yet consumers continue to flock to trusted entities such as HMV.

- **Consumer Search Is Not Efficient or Cost-effective**

- On the surface, the electronic marketplace seems to be a perfect market, where worldwide sellers and buyers share and trade without intermediaries. However, a closer look indicates that new types of intermediaries are essential to e-commerce. They include electronic malls that guarantee legitimacy of transactions. All these intermediaries add to transaction costs.
- **Products People won't buy online**
- Imagine a website called furniture.com or living.com, where venture capitalists are investing millions in selling home furnishings online. In the case of a sofa, you would want to sit on it, feel the texture of the fabric etc. Beside the sofa test, online furniture stores face costly product returns which make the product harder to sell online.

- **Customer Relations Problems**

- Not many businesses realize that even e-business cannot survive over the long term without loyal customers.

- **Corporate Vulnerability**

- The availability of product details, catalogs, and other information about a business through its website makes it vulnerable to access by the competition. The idea of extracting business intelligence from the website is called web framing.

- **High Risk Of Internet Start-up**

- Many stories unfolded in 1999 about successful executives in established firms leaving for Internet start-ups, only to find out that their get-rich dream with a dot com company was just a dream.

E-Commerce Business Models

- B to B Model
- B to C Model
- C to C Model
- C to B Model
- P to P (Peer to Peer) Model.
- Other Models are G to P, G to G etc..

Business to Business Model

- Business to Business [B2B] : B2B (business – to-business) is a kind of ecommerce, which refers to a company selling or buying from other companies.
- One company communicates with other companies through electronic Medias to buy and sell products.
- Some of these transactions include sending and receiving orders, invoice and shopping orders.
- It is an attractive alternative to the current process of printing, mailing of various business documents.

- Consider a hypothetical example.
- Anand Company sells automobile parts and Vinod Company assembles this part and then sells the automobile to customers.
- Vinod Company comes across the Web site of Anand Company and finds it suitable.
- Vinod Company therefore, requests for more information about Anand Company and finally, decides to purchase automobile parts from Anand Company.
- To do this, Vinod Company places an order on the Web site of Anand Company. After Anand Company receives the order details, it validates the information.
- As soon as the order is confirmed, the payment procedures are settled.
- Finally, Anand Company sends an Acknowledgement of payment to Vinod Company and delivers the goods as per the shipment details decided between the two organizations.

- **Advantages of B2B model are:**

- It can efficiently maintain the movement of the supply chain and the manufacturing and procuring processes.
- It can automate corporate processes to deliver the right products and services quickly and cost-effectively.
- The B2B model is predicted to become the largest value sector of the industry within a few years.
- This is said to be the fastest growing sector of e-commerce.
- By using this model purchasing bureaucracy can be eliminated.
- Improved efficiency in ordering material.

- **Disadvantages of B2B model are:**
- Low barriers to entry for competitors.
- Explosive growth in B2B website leading to bad competition .
- No of fake websites growing on daily basis.
- Increased fraudulent transactions
- Quality of goods are reduced due to competition to supply goods at very low cost
- No direct contact between buyer and seller which may lead to cheating

Business to Consumer Model

- Business – to Consumer [B2C] : Business – to Consumer [B2C] is basically a concept of online marketing and distributing of products and services over the internet.
- It is a natural progression for many retailers or marketer who sells directly to the consumer.
- The general idea is, if you could reach more customers, service them better, make more sales while spending less to do it that would be the formula of success for implementing a B2C e-commerce infrastructure.

- Consider a hypothetical example in which a transaction is conducted between a business organization and a consumer.
- A business house, Reliance retail Store, displays and sells a range of products on their Web site.
- The detailed information of all their products is contained in the huge catalogs maintained by RR Department Stores.
- Now, a consumer, Ashok, wants to buy a gift for his wife.
- He therefore, logs on to the site of RR Department Stores and selects a gift from the catalog.

- He also gets the detailed information about the gift such as, the price, availability, discounts, and so on from their catalog.
- Finally, when he decides to buy the gift, he places an order for the gift on RR Web site.
- This information is then validated by RR Department Store and stored in their database.
- On verification of the information the order is processed.
- Therefore, as you can see, the B2C model involves transactions between a consumer and one or more business organizations.

• **Advantages of B2C are :-**

- Extensive search capabilities by item, corporate name, division name, location, manufacturer, partner, price or any other specified needs.
- Reduced marketing and advertising expenses to compete on equal balance with much bigger companies.
- Reduced price to customer.
- Reduced transaction cost.
- Its eliminate middlemen.
- Reduce customer service and sales support service.
- Unlimited Market Place

- **Disadvantages of B2C are :-**

- It is not always the safest and reliable place to conduct business
- Usually a lot of phone calls and mailings are needed
- Any bad review by customer on the website may damage the image of the company and this may reduce the sales
- Quality of the product may not be guaranteed always

Consumer to Consumer

- The C2C model involves transaction between consumers.
- Here, a consumer sells directly to another consumer.
- Web sites that provide a consumer to advertise and sell their products online to another consumer.
- However, it is essential that both the seller and the buyer must register with the auction site.
- While the seller needs to pay a fixed fee to the online auction house to sell their products, the buyer can bid without paying any fee.
- The site brings the buyer and seller together to conduct deals.

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- Example

- When a customer plans to sell his products to other customers on the Web site of eBay .
- He first needs to interact and get registered with an eBay site, which in this case acts as a facilitator of the overall transaction.
- Then, the seller can host his product on www.ebay.com, which in turn charges him for this.
- Any buyer can now browse the site of eBay to search for the product he interested in.
- If the buyer comes across such a product, he places an order for the same on the Web site of eBay.
- eBay now purchase the product from the seller and then, sells it to the buyer. In this way, though the transaction is between two customers, an organization acts as an interface between the two organizations.

- **Advantages of C2C are:-**

- Customers can directly contact sellers and eliminate the middle man.
- Anyone can sell and advertise his product on internet .
- Sellers can reach both national and international customer.
- Simplified buying and searching process.

- **Disadvantages of C2C are:-**

- The number of internet related auction frauds have also increases.
- Unnecessarily inflated prices by creating multiple buyers.
- More credit card/payment frauds.
- Chances of scams like selling stolen goods.

Consumer to Business

- Is a business model where the end consumers creates products and services which are consumed by business and organizations.
- It is diametrically opposite to the popular concept of B2C where the companies makes goods and services available to the end consumers.

P to P (Peer to Peer) Model.

- P to P enables internet users to share files and computer resource directly without having to go through a central web server.
- Under this model people of same group exchange goods and services (Ex : Sharing between students, between same age group individuals etc)

Other types of e-commerce models

- Government-to-Government (G2G) model: This model involves transactions between 2 governments. For example, if the American government wants to buy oil from the Arabian government, the transaction involved is categorized in the G2G model.
- Government-to-Consumer (G2C) model: In this model, the government transacts with an individual consumer. For example, a government can enforce laws pertaining to tax payments on individual consumers over the Internet by using the G2C model.
- Consumer-to-Government (C2G) model: In this model, an individual consumer interacts with the government. For example, a consumer can pay his income tax or house tax online. The transactions involved in this case are C2G transactions.

Emerging trends in E-Commerce

- Real time shopping experience at online shopping
- Using mobiles and android apps for transaction
- Multi-Channel
- Big-Data
- Customization and Personalization
- Valuing customer engagements than conversion ratio
- Push Notifications
- Social Networking sites
- Mobile POS and accessing Via Mobile
- Retailers support to Omni-Channel consumers.

- Real-time shopping Experience at Online shopping
- There is no doubt the people prefer to talk to real sales person and hold the product in their hand but do not think that e-commerce sites cannot offer you such pleasure.
- Most online retailers have facilities to chat online, get suggestions and answer to all your queries, online subscription even allow you to hold the product and touch it and some even lets you chat all along while you are shopping with chat log.

- Using Mobiles and Android apps for transaction
- With the mobile devices out numbering the desktops the use of these devices for buying will increase in the near future.
- Additionally the websites must act like any app and must be very responsive in terms of design.
- We have many kinds of apps now that assist consumers to check out on his own, use payment wallet, store coupon codes like India plaza coupons, loyalties, card numbers and have GPS for proper advertisement of companies.
- There are also apps that will let you compare the prices of the same product at different outlets.

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- Multi-Channel: Consumers these days expect a very effortless transaction, and they expect that a commodity added to the cart will be available if one calls the customer care or land up in the store.
- This will encourage the IT directors to invest in commerce packages, e-commerce POS systems and CRM systems.

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- **BIG DATA :**

- Big data are handling a lot of data.
- This has been a concept that has been drawing the interest of the e-commerce site owners, and it is here to stay.
- IT is synching offline data and online data together so that the retailers decision making capacity may be enhanced.
- In a nutshell. It allows retailers to understand the hidden consumer patterns.

- ## Customization and Personalization

- In an extremely volatile market one must be ready for change all times-not other wise but for personalization. Personalized recommendations will find more prominence in the market.
- Valuing Customer Engagements than conversion ratio
- Till date the conversion rates were given the most priority but with the rise in e-commerce sites, gathering new customers will be very tough. So, naturally retailers will depend on holding on to the existing customers. Customer engagement will ensure people develop a liking for your site and follow you regularly

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- **Push Notifications :**

- Pull browsing is the latest trend now, but it is not far when push browsing will overtake it. Messaging notifications, basket notifications for selective items on your home page are all going to catch up momentum.
- **Social Networking Sites :**
- As the social networking sites increase in popularity, retailers must be using this platform for marketing and selling their products. Face book, Twitter, LinkedIn will be the platforms where you will get data about the latest discounts and offers

- Mobile POS and Accessing Via Mobile:
- The idea of Mobile POS to make each and every employee work and allow the customer transact without being to the billing counter. Thanks to the Android 4.2 jellybean and iOS6 that allows apps that lets the customer do endless jobs with such apps.
- Retailers Support to Omni-Channel Consumers:
- Now that mobile apps are there in the market that lets you compare prices, check the reviews online and share the product with friends, retailers will be integrating their separate channels into one for offering support to the consumers

Web Auctions.

- An auction is a market mechanism by which sellers place offers and buyers make sequential bids.
- Auctions are characterized by the competitive nature by which a final price is reached.
- Auctions have been an established method of commerce for centuries, and they are especially suited to deal with products and services for which conventional marketing channels are ineffective or inefficient.
- Auctions can expedite the disposal of items that need liquidation or a quick sale, and they ensure prudent execution of contracts.

- The Internet provides an infrastructure for executing auctions at lower cost, and with many more involved sellers and buyers.
- Online auctions are places that people can go in order to buy or sell goods or services online for a small fee. Anyone can sell an item and anyone can bid on an item.
- The highest bidder wins the auction and pay for the good or service and then expects for to receive their winning in the next couple of days through the mail or some other way of delivery.
- Example:
 - Auction-Warehouse - <http://www.auction-warehouse.com>
 - Craigslist - <http://www.craigslist.org>
 - E-Bay – <http://www.ubid.com>

- Individual consumers and corporations alike can participate in this rapidly growing form of e-commerce.
- There are several types of auctions, each with its motives and procedures.
- Auctions are divided here into two major types:
 - Forward auctions,
 - Reverse auctions.

- Forward auctions.
- Forward auctions are used mainly as a selling channel.
- A single seller auctions item(s) to many potential buyers.
- Different mechanisms in a forward auction are as follows.
- English auctions.
- Buyers bid on one item at a time.
- The bidding price increases with additional bids.
- The highest bidder wins (if price is the only criterion).

- Yankee auctions.
 - These are similar to English auctions, but multiple identical items are offered.
 - You can bid on any number of items.
 - Biddings prices are escalating.
- Dutch auctions.
 - These are usually for multiple, identical items (e.g., flowers).
 - Prices are set high and are reduced as the auction clock runs down until a bid for a specific quantity is submitted.

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- Reverse auctions.
- In reverse auctions, there is one buyer, who wants to buy a product or a service.
- Suppliers are invited to submit bids.
- The supplier who submits the lowest bid wins.
- Several rounds may take place if the lowest bid is not satisfactory to the seller.
- Auctions are used in B2C, B2B, C2B, e-government, and C2C commerce, and they are becoming popular in many countries.

- Electronic auctions started in the 1980s on private networks, but their use was limited.
- The Internet opens many new opportunities for e-auctions, and millions of sellers and buyers to participate.
- Auctions can be conducted from the seller's site or from a third-party site.
- For example, eBay, offers hundreds of thousands of different items in several types of auctions .
- Major companies, including Amazon.com, offer online auctions as well.

- **Bartering.**

- Bartering is exchange of goods or services without a monetary transaction.
- In addition to the individual-to-individual bartering ads that appear in some newsgroups, bulletin boards, and chat rooms, there are several intermediaries that arrange for corporate bartering
- (e.g., barterbrokers.com). These intermediaries try to find partners to a barter.

• **BENEFITS OF WEB AUCTIONS TO SELLERS**

- Increased revenues from broadening customer base and shortening cycle time
- Optimal price setting, determined by the market (more buyers)
- Saves on the commission to intermediaries. (Physical auctions' fees are very expensive compared to e-auctions.)
- Can liquidate large quantities quickly
- Improved customer relationship and loyalty (in the case of specialized B2B auction sites and electronic exchanges).

● **Benefits of Web Auction to Buyers**

- Opportunities to find unique items and collectibles
- Chance to bargain, instead of buying at a fixed price
- Entertainment. Participation in e-auctions can be entertaining and exciting.
- Anonymity. With the help of a third party, buyers can remain anonymous.
- Convenience. Buyers can trade from anywhere, even with a cell phone; they do not have to travel to an auction place.

● **Benefits of Web Auction to Auctioneers**

- High stickiness : to the Web site (customers stay sticky to sites longer and come back more often) generates more ad revenue to auctioneer
- Expansion of the auction business.

Virtual Communities

- The term is originally attributed to Howard Rheingold's book "The Virtual Community," which was published in 1993.
- A virtual community is a group of people who share common interests, feelings or ideas, or pursue similar goals over the Internet or over any collaborative network.
- Social media is the most common vehicle for this sharing and interaction, which can potentially transcend geographical boundaries, race, culture, political views and religion when people are connected by common interest or agenda.

- Importance of Virtual community
- Instant information exchange that is not possible in a real-life community.
- Interaction allows people to engage in many activities from their home, such as shopping, paying bills, and searching for specific information.
- Users of online communities also have access to thousands of specific discussion groups where they can form specialized relationships and access information in such categories as: politics, technical assistance, social activities, health and recreational pleasures.

- Virtual communities provide an ideal medium for different types of relationships because information can easily be posted and response times can be very fast.
- Communities can give users a feeling of membership and belonging.
- Users can give and receive support, and it is simple and cheap to use.
- Virtual communities can be commercially successful, making money through membership fees, subscriptions, usage fees, and advertising commission.

Portals.

- A web portal is most often one specially-designed Web page / catalogue at a website which brings information together from diverse sources in a uniform way.
- Usually, each information source gets its dedicated area on the page for displaying information often, the user can configure which ones to display.

- Types of Portals:
- The portals can be differentiated on the basis of their content and intended users.
- **Vertical Portal:**
- These are web portals which focus only on one specific industry, domain or vertical.
- Vertical portals provide tools, information, articles, research and statistics on the specific industry or vertical.
- Examples: Construction Plus (www.constructionplus.com), Chemical Industry (www.chemindustry.com)

- **Horizontal Portal:**

- These are web portals which focus on a wide array of interests and topics.
- They focus on general audience and try to present something for everybody.
- Examples: Yahoo (www.yahoo.com), MSN (www.msn.com)

- Geographical Portals:
- Geographical portal can be either horizontal or vertical portals which caters to a particular region or place.
- Examples:
- Craigslist (www.craigslist.com),
- Countyweb (www.countyweb.com)

- **Marketplace portals:**

- Market space portals exist to support the business-to-business and business-to-customer e-commerce,
- software support for e-commerce transactions and ability to find and access rich information about the products on sale also, ability to participate in discussion groups with other vendors and/or buyers.
- They may be vertical, horizontal or geographical in type.
- Example: EC21 (www.ec21.com), eBay (www.eBay.com).

- **Search portals:**

- Search portals aggregate results from several search engines into one page.
- Here the main focus is on searching for information wanted by the customer.
- Example: Google (www.google.com), (www.ask.com) .

- **Media Portals:**

- Media portals focus on entertainment, business or consumer news.
- Popular media portals update users on current news, affairs and information.
- Some media portals provide access to local and foreign TV programs such as soap operas, sports and live events.
- Examples: BBC (www.bbc.co.uk), Guardian (www.guardian.co.uk).

- **Access Portal:**

- Access portal can be defined as a type of portal associated with Internet Service Provider (ISP).
- Examples: Wanadoo (www.wanadoo.com) and now (www.orange.co.uk), AOL (www.aol.com).

E-Business Revenue Models.

- **Web Catalogue Revenue Models:-**
- This model would use electronic catalogue and shopping cart providing access to customers throughout the world.
- Business using this type of a model include online sellers of computers, electronic items, books, music, videos, toys, flowers, gifts, clothes etc.
- Payment received from customers is the source of earning revenue.

- **Digital Content Revenue Model:-**
- Information services such as legal information, corporate information, government information, news and resources for libraries etc.
- Normally, a customer has to subscribe to such services by paying certain amount as subscription fee.
- This fee becomes the main source of generating revenue for the e-business.

- **Advertising, Subscription Mixed Revenue Model:-**
- In this type, subscribers pay a fee and accept some level of advertising.
- Thus an e-business can earn its revenue from both the sources, that is, through subscription and advertisement.

- **Advertising Supported Revenue Model:-**
- In this model services/information is provided free of charge to certain audience and advertisement is given in this service and the amount paid by advertising company is the revenue for the e-business.

• **Fee for Transaction Revenue Model:-**

- There are business offering services for which they charge a fee based on the number or size of transactions they process.
- The business provides information to the customers which is required to complete a transaction and revenue is purely earned on that basis.

● **Fee For Service Revenue Model :-**

- The fee is charged on the basis of value of some service rendered.
- Professional services provided online by lawyers, doctors, accountants etc relate to this type of revenue model.

Introduction to Research

UNIT 1

TOPICS

- ✘ Meaning,
- ✘ Characteristics and Significance of Business Research;
- ✘ Types of Research – Exploratory, Descriptive and Causal Research;
- ✘ Steps in research process.

MEANING OF RESEARCH

- ✘ In Common parlance research means search for knowledge.
- ✘ A Research simply means Search for a facts.
- ✘ Answer to questions and solution to problems it is a purposive Investigation.
- ✘ Research is a process of Investigation.
- ✘ It is to find Explanation to Un Explained It is an Organized Inquiry; it is adding Knowledge to the existing Knowledge.
- ✘ phenomenon
- ✘ Research is a systematic and logical study of an Issue or Problem or Phenomenon.
- ✘ Research is a systematic investigative process employed to increase knowledge by discovering new facts.

CHARACTERISTICS AND SIGNIFICANCE OF BUSINESS RESEARCH;

✘ CHARACTERISTICS OF RESEARCH

- ✘ Research helps to familiarizing the new insights or outcome of Business.
- ✘ Research helps in understanding accurately the characteristics of a particular individual, situation or a group that influence business.
- ✘ Research helps to determine the frequency with which something occurs or with which it is associated with something else which help in sales forecasting.

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- ✘ Research validates existing business data.
- ✘ Research helps to identify the trends of phenomena.
- ✘ Research helps in getting solution to a problem
- ✘ Research helps to formulate business strategy
- ✘ Research helps to improve effectiveness of present system.

SIGNIFICANCE OF BUSINESS RESEARCH;

- ✘ Research has a special role in solving various operational and planning problems of business entity.
- ✘ Operations research and market research are considered crucial and their results assist in business decisions.

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- ✘ Market research investigates the structure and development of a market for the purpose of formulating efficient policies for purchasing , production and sales
- ✘ Operations research refers to application of mathematical, logical and analytical techniques to the solution of business problems of cost minimization or profit maximization .

TYPES OF RESEARCH

- ✘ Exploratory Research.
- ✘ Descriptive Research.
- ✘ Causal Research.
- ✘ Basic or Fundamental Research.
- ✘ Social Research.
- ✘ Field studies
- ✘ Case study Research
- ✘ Action Research.
- ✘ Market Research.

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- ✘ Exploratory Research : Research carried out to explore some new things or ideas and develop a hypothesis rather than testing is called as exploratory research.
- ✘ Hypothesis means assumption which has to be proved or disproved.
- ✘ Exploratory research is conducted into an issue or problem where there are few or no earlier studies to refer to.
- ✘ Exploratory research is conducted because a problem has not been clearly defined.

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- ✘ Descriptive Research : Descriptive research includes surveys and fact- finding enquires of different kinds.
- ✘ The major purpose of this type of research is description of the state of affairs as it exists at present.
- ✘ This type of research is commonly used in business research.
- ✘ It is also known as Ex- Post facto research.
- ✘ Ex : Frequency of shopping ,
Preference of customers.

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- ✘ Causal Research: This research is done to understand the cause and effect relationship.
- ✘ In this type of research emphasis is on a specific hypotheses about the effects of changes of one variable on another variable.
- ✘ In this research a experiment is done where a independent variable is changed or manipulated to see how it affects a dependent variable by controlling the effects of extraneous variables.
- ✘ Ex : Change in price of a product and its effect on substitute product.

- - ✘ Basic or Fundamental or Pure Research :
 - ✘ Research carried out to increase understanding of fundamental principles. Research conducted only for knowledge sake.
 - ✘ Ex: How the universe begin.

- ✘ Social Research : Research done for understanding society's attitudes , beliefs etc.

- ✘ Field studies: Field study is done by naturalists and this studies are made on free living wild animals in there natural habitat.

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- ✘ Case study Research : Research done on a corporate to study the success or failure of a business.
- ✘ Action Research or Applied research: This research is done to find out a solution for an immediate problem.
- ✘ Market Research: Research done by companies to study the trends in the market.

STEPS IN RESEARCH PROCESS

- ✘ Define research Problem
- ✘ Review the literature (review concepts, theories and previous research findings)
- ✘ Formulate hypotheses
- ✘ Data collection
- ✘ Analyze data (Test hypotheses if any)
- ✘ Interpret and report (report writing)

FORMULATING THE RESEARCH PROBLEM

- ✘ The researcher must single out the problem he wants to study, i.e., he must decide the general area of interest or aspect of a subject-matter that he would like to inquire into.
- ✘ Initially the problem may be stated in a broad general way and then the ambiguities, if any, relating to the problem be resolved.

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- ✘ Then, the feasibility of a particular solution has to be considered before a working formulation of the problem can be set up.
- ✘ The formulation of a general topic into a specific research problem, thus, constitutes the first step in a scientific enquiry.

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- ✘ Essentially two steps are involved in formulating the research problem, vi., understanding the problem thoroughly, and rephrasing the same into meaningful terms from an analytical point of view.

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- ✘ The best way of understanding the problem is to discuss it with one's own colleagues or with those having some expertise in the matter.
- ✘ In an academic institution the researcher can seek the help from a guide who is usually an experienced man and has several research problems in mind.

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- ✘ In private business units or in government, the problem is usually earmarked by the administrative agencies with whom the researcher can discuss as to how the problem originally came about and what considerations are involved in its possible solutions.

- - ✘ The researcher must at the same time examine all available literature to get himself acquainted with the selected problem.
 - ✘ He may review two types of literature—the conceptual literature concerning the concepts and theories, and the empirical literature consisting of studies made earlier which are similar to the one proposed.
 - ✘ The basic outcome of this review will be the knowledge as to what data and other materials are available for operational purposes which will enable the researcher to specify his own research problem in a meaningful context.

- ✘ After this the researcher rephrases the problem into analytical or operational terms i.e., to put the problem in as specific terms as possible.
- ✘ This task of formulating, or defining, a research problem is a step of greatest importance in the entire research process.
- ✘ The problem to be investigated must be defined unambiguously for that will help discriminating relevant data from irrelevant ones.

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- ✘ In fact, formulation of the problem often follows a sequential pattern where a number of formulations are set up, each formulation more specific than the preceding one, each one phrased in more analytical terms, and each more realistic in terms of the available data and resources.

REVIEW THE LITERATURE (REVIEW CONCEPTS, THEORIES AND PREVIOUS RESEARCH FINDINGS)

- ✘ Once the problem is formulated, a brief summary of it should be written down.
- ✘ It is compulsory for a research worker writing a thesis for a Ph.D. degree to write synopsis of the topic and submit it to the necessary Committee or the Research Board for approval.
- ✘ At this juncture the researcher should undertake extensive literature survey and review connected with the problem.

- ✘ For this purpose, the abstracting and indexing journals which are published or unpublished and bibliographies are the first place to go to.
- ✘ Academic journals, conference proceedings, government reports, books etc., must be tapped depending on the nature of the problem.

- - ✘ In this process, it should be remembered that one source will lead to another.
 - ✘ The earlier studies, if any, which are similar to the study should be carefully studied.
 - ✘ A good library will be a great help to the researcher at this stage.

FORMULATE HYPOTHESES

- ✘ After extensive literature survey, researcher should state in clear terms the working hypothesis.
- ✘ Working hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences.
- ✘ In most types of research, the development of working hypothesis plays an important role.
- ✘ Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested.

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- ✘ The role of the hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track.
- ✘ It sharpens his thinking and focuses attention on the more important facets of the problem.
- ✘ It also indicates the type of data required and the type of methods of data analysis to be used.

DESIGN RESEARCH (INCLUDING SAMPLE DESIGN)

- ✘ The research problem having been formulated in clear cut terms, the researcher will be required to prepare a research design, i.e., he will have to state the conceptual structure within which research would be conducted.
- ✘ The preparation of such a design facilitates research to be as efficient as possible yielding maximal information.

- - ✘ In other words, the function of research design is to provide for the collection of relevant evidence with minimal expenditure of effort, time and money.
 - ✘ But how all these can be achieved depends mainly on the research purpose.
 - ✘ Research purposes may be grouped into four categories, vi.,
 - ✘ • Exploration,
 - ✘ • Description,
 - ✘ • Diagnosis, and
 - ✘ • Experimentation.

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- ✘ A flexible research design which provides opportunity for considering many different aspects of a problem is considered appropriate.
- ✘ if the purpose of the research study is that of exploration or accurate description of a situation of an association between variables, the suitable design will be one that minimizes bias and maximizes the reliability of the data collected and analyzed.

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- ✘ The preparation of the research design, appropriate for a particular research problem, has to consider the following:
 - ✘ The means of obtaining the information;
 - ✘ The skills of the researcher and his staff (if any);
 - ✘ Explanation of the way in which selected means of obtaining information will be organized and the reasoning leading to the selection
 - ✘ The time available for research
 - ✘ The cost factor relating to research, i.e., the finance available for the purpose.

SAMPLE DESIGN AND TYPES OF SAMPLING

- ✘ Survey means testing whole population but quite often this methods can not adopted because of cost and time. So, we select only a few items from the universe for our study purposes. The items so selected constitute what is technically called **Sample**.

- - ✘ The researcher must decide the way of selecting a sample or what is popularly known as the sample design.
 - ✘ In other words, a sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given population.
 - ✘ Thus, the plan to select 12 of a city's 200 drugstores in a certain way constitutes a sample design.

TYPES OF SAMPLING

- ✘ Sampling can be classified as
- ✘ Probability sampling
- ✘ Non-Probability sampling
- ✘ Probability samples are those based on simple random sampling, systematic sampling, stratified sampling, cluster/area sampling
- ✘ Non-probability samples are those based on convenience sampling, judgment sampling and quota sampling techniques.

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- ✘ Deliberate sampling: Deliberate sampling is also known as purposive or non-probability sampling.
- ✘ This sampling method involves purposive or deliberate selection of particular units of the universe for constituting a sample which represents the universe.
- ✘ Depending on ease of access researcher selects sample. It is also called convenience sampling.

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- ✘ Judgment sampling : Researcher's judgment is used for selecting items which he considers as representative of the population.
- ✘ For example, a judgment sample of college students might be taken to secure reactions to a new method of teaching.
- ✘ Judgment sampling is used quite frequently in qualitative research where the desire happens to develop hypotheses rather than to generalize to larger populations.

- - ✘ Simple random sampling: This type of sampling is also known as chance sampling or probability sampling where each and every item in the population has an equal chance of inclusion in the sample. Each item in the population has the same probability of being selected.
 - ✘ For example, if we have to select a sample of 300 items from a universe of 15,000 items, then we can put the names or numbers of all the 15,000 items on slips of paper and conduct a lottery.

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- ✘ Systematic sampling: The most practical way of sampling is to select every 15th name on a list, every 10th house on one side of a street and so on.
- ✘ Sampling of this type is known as systematic sampling.
- ✘ An element of randomness is usually introduced into this kind of sampling by using random numbers to pick the first unit and then every n th element is selected until the desired number of sample is secured.

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- ✘ Stratified sampling: If the population from which a sample is to be drawn does not constitute homogeneous group, then stratified sampling technique is applied so as to obtain representative sample.
- ✘ In this technique, the population is stratified into a number of non-overlapping subpopulations or strata and sample items are selected from each stratum.
- ✘ If the items selected from each stratum is based on simple random sampling the entire procedure, first stratification and then simple random sampling, is known as stratified random sampling.

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- ✘ Quota sampling: Interviewers are simply given quota to be filled from different strata, the actual selection of items for sample being left to the interviewer' judgment. This is called quota sampling.
- ✘ The size of the quota for each stratum is generally proportionate to the size of that stratum in the population.
- ✘ Quota sampling is thus an important form of non-probability sampling.
- ✘ Quota samples generally happen to be judgment samples rather than random samples.

- - ✘ Cluster sampling and area sampling: Cluster sampling involves grouping the population and then selecting the groups or the clusters rather than individual elements for inclusion in the sample. The sample size must often be larger than the simple random sample to ensure a level of accuracy
 - ✘ The clustering approach makes the sampling procedure relatively easier and increase the efficiency of field work, especially in the case of personal interviews.

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- ✘ Area sampling: Area sampling is quite close to cluster sampling and is often talked about when the total geographical area of interest happens to be big one.
- ✘ Under area sampling we first divide the total area into a number of smaller non-overlapping areas, generally called geographical clusters,
- ✘ then a number of these smaller areas are randomly selected, and all units in these small areas are included in the sample.
- ✘ Area sampling is especially helpful where we do not have the list of the population concerned.
- ✘ It also makes the field interviewing more efficient since interviewer can do many interviews at each location.

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- ✘ Multi-stage sampling: This technique is meant for big inquiries extending to a considerably large geographical area like an entire country.
- ✘ Under multi-stage sampling the first stage may be to select large primary sampling units such as states, then districts, then towns and finally certain families within towns.
- ✘ If the technique of random-sampling is applied at all stages, the sampling procedures is described as multi-stage random sampling.

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- ✘ Sequential sampling: This is somewhat a complex sample design where the ultimate size of the sample is not fixed in advance but is determined according to mathematical decisions on the basis of information yielded as survey progresses.
- ✘ This design is usually adopted under acceptance sampling plan in the context of statistical quality control.
- ✘ Sequential sampling is considered desirable when the universe happens to be small and a known characteristic of it is to be studied intensively.
- ✘ .

DATA COLLECTION

- ✘ There are several ways of collecting the appropriate data which differ considerably in context of money, time and other resources at the disposal of the researcher.
- ✘ Primary data can be collected either through experiment or through survey.

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- ✘ If the researcher conducts an experiment, he observes some quantitative measurements, or the data, with the help of which he examines the truth contained in his hypothesis.
- ✘ But in the case of a survey, data can be collected by any one or more of the following ways:
 - ✘ Observation Method
 - ✘ Personal interview
 - ✘ Telephone interviews
 - ✘ Mailing of questionnaires
 - ✘ Schedules

- - ✘ Observation Method: This method implies the collection of information by way of investigator's own observation, without interviewing the respondents.
 - ✘ The information obtained relates to what is currently happening and is not complicated by either the past behavior or future intentions or attitudes of respondents.
 - ✘ This method is no doubt an expensive method and the information provided by this method is also very limited.
 - ✘ This method is not suitable in inquiries where large samples are concerned.

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- ✘ Personal interview: The investigator follows a rigid procedure and seeks answers to a set of pre-conceived questions through personal interviews.
- ✘ This method of collecting data is usually carried out in a structured way where output depends upon the ability of the interviewer to a large extent.

- ✘ Telephone interviews: This method of collecting information involves contacting the respondents on telephone itself.
- ✘ This is not a very widely used method but it plays an important role in industrial surveys in developed regions, particularly, when the survey has to be accomplished in a very limited time.

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- ✘ Mailing of questionnaires: The researcher and the respondents do not come in contact with each other if this method of survey is adopted.
- ✘ Questionnaires are mailed to the respondents with a request to return after completing the same.
- ✘ It is the most extensively used method in various economic and business surveys.
- ✘ Before applying this method, usually Pilot Study for testing the questionnaire is conducted which reveals the weaknesses, if any, of the questionnaire.
- ✘ Questionnaire to be used must be prepared very carefully so that it may prove to be effective in collecting the relevant information.

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- ✘ Schedules: Under this method the enumerators are appointed and given training.
- ✘ They are provided with schedules containing relevant questions.
- ✘ These enumerators go to respondents with these schedules.
- ✘ Data are collected by filling up the schedules by enumerators on the basis of replies given by respondents.
- ✘ Much depends upon the capability of enumerators so far as this method is concerned.
- ✘ Some occasional field checks on the work of the enumerators may ensure sincere work.

ANALYZE DATA (TEST HYPOTHESES IF ANY)

- ✘ After the data have been collected, the researcher turns to the task of analyzing them.
- ✘ The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences.
- ✘ The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis.
- ✘ Thus, researcher should classify the raw data into some purposeful and usable categories.

- - ✘ Coding operation is usually done at this stage through which the categories of data are transformed into symbols that may be tabulated and counted.
 - ✘ Editing is the procedure that improves the quality of the data for coding. With coding the stage is ready for tabulation.
 - ✘ Tabulation is a part of the technical procedure wherein the classified data are put in the form of tables.

- - ✘ The mechanical devices can be made use of at this juncture.
 - ✘ A great deal of data, especially in large inquiries, is tabulated by computers.
 - ✘ Computers not only save time but also make it possible to study large number of variables affecting a problem simultaneously.

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- ✘ Analysis work after tabulation is generally based on the computation of various percentages, coefficients, etc., by applying various well-defined statistical formulae.
- ✘ In the process of analysis, relationships or differences supporting or conflicting with original or new hypotheses should be subjected to tests of significance to determine with what validity data can be said to indicate any conclusion(s).
- ✘ In brief, the researcher can analyse the collected data with the help of various statistical measures.

- - ✘ **HYPOTHESIS-TESTING:**

- ✘ After analyzing the data as stated above, the researcher is in a position to test the hypotheses, if any, he had formulated earlier.
- ✘ Do the facts support the hypotheses or they happen to be contrary.
- ✘ This is the usual question which should be answered while testing hypotheses.

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- ✘ Various tests, such as Chi square test, t-test, F-test, have been developed by statisticians for the purpose.
- ✘ The hypotheses may be tested through the use of one or more of such tests, depending upon the nature and object of research inquiry.
- ✘ Hypothesis -testing will result in either accepting the hypothesis or in rejecting it.
- ✘ If the researcher had no hypotheses to start with, generalizations established on the basis of data may be stated as hypotheses to be tested by subsequent researches in times to come.

INTERPRET AND REPORT (REPORT WRITING)

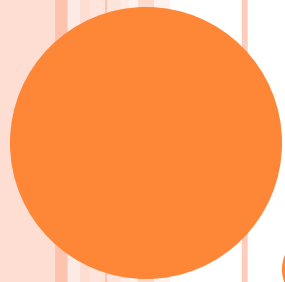
- ✘ If a hypothesis is tested and upheld several times, it may be possible for the researcher to arrive at generalization, i.e., to build a theory.
- ✘ As a matter of fact, the real value of research lies in its ability to arrive at certain generalizations.
- ✘ If the researcher had no hypothesis to start with, he might seek to explain his findings on the basis of some theory. It is known as interpretation.
- ✘ The process of interpretation may quite often trigger off new questions which in turn may lead to further researches.

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- ✘ Finally, the researcher has to prepare the report of what has been done by him.
- ✘ Writing of report must be done with great care keeping in view the following:
 - ✘ The layout of the report should be as follows:
 - ✘ The Preliminary Pages: The report should carry title and date followed by acknowledgement and foreword.
 - ✘ Then there should be a table of contents followed by a list of tables and list of graphs and charts, if any, given in the report.

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- ✘ The Main Text: The main text of the report should have the following parts:
 - ✘ a. Introduction: It should contain a clear statement of the objective of the research and an explanation of the methodology adopted in accomplishing the research.
 - ✘ The scope of the study along with various limitations should as well be stated in this part.

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- ✘ b. Summary of findings: After introduction there would appear a statement of finding and recommendations in non-technical language.
- ✘ If the findings are extensive, they should be summarized.
- ✘ c. Main report: The main body of the report should be presented in logical sequence and broken-down into readily identifiable sections.
- ✘ d. Conclusion: Towards the end of the main text, researcher should again put down the results of his research clearly and precisely. In fact, it is the final summing up.

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- ✘ The End Text: At the end of the report, appendices should be enlisted in respect of all technical data.
- ✘ Bibliographies, list of books, journals, reports, etc., consulted, should also be given in the end.
- ✘ Index should also be given specially in a published research report.



UNIT II

SECURITY FOR E-BUSINESS

TOPICS

- Security threats – An area view – implementing E-commerce security – encryption – Decryption,
- Protecting client computers
- E-Commerce Communication channels and web servers Encryption,
- SSL protocol, Firewalls, Cryptography methods, VPNs, protecting, networks, policies and procedures



SECURITY THREATS – AN AREA VIEW

- With worldwide retail e-commerce sales projected to increase, the industry is booming without plans to stop any time soon.
- Because of this, many businesses are unprepared for the security threats that come with running an **e-commerce** company. In an ideal world, brick-and-mortar stores can run without worrying too much about security due to systems and setups put in place by the government of their respective localities.
- Things are quite different with e-commerce businesses, however; the onus to protect yourself is on you, and having a clear understanding of the various security threats and ways to protect yourself is important



6 DANGEROUS E-COMMERCE SECURITY THREATS TO WATCH OUT FOR

- **1. Phishing attacks**
- Many e-commerce business owners aren't aware of how much of a threat phishing poses to their business, yet it is consistently one of the main ways hackers take over e-commerce sites.
- **Phishing** is a method in which a hacker sends deceptive emails disguised as an email from someone or an organization that you know in an attempt to get you to reveal your login details.



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- **2. Spam emails**

- Spam emails are also one of the major threats to e-commerce stores, and it is one of the major ways through which some of the attacks on this list are carried out.
- In a lot of cases, phishing attacks and malware attacks are carried out through spam emails. Spammers also occasionally hack the email accounts of individuals or organizations you know and then use these emails to send spam emails aimed at compromising your ecommerce store hoping that you will believe them to be legitimate.
- These emails can sometimes link to phishing sites or link to infected sites that can compromise your computer security.



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- **3. Distributed denial of service (DDoS) attacks**
- A distributed denial of service attack, or **DDoS attack**, is an attack in which an attacker uses multiple computers to hit your server with fake traffic in order to make your website inaccessible, or unable to function properly, for legitimate users.
- While many are used to hearing about sites “hacked” or compromised in a way that leads to data being exposed, very few are familiar with DDoS attacks and how damaging they can be; even the biggest e-commerce brands have fallen victim to these attacks.
- There have been **reports** of major e-commerce platforms such as Etsy, Shopify and PayPal suffering significant downtimes due to these attacks. Smaller e-commerce businesses are particularly at risk if measures are not taken to protect against malicious traffic.



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- **4. SQL injections**

- SQL injections are generally regarded as the **most common form of cyber attack** today, and e-commerce businesses aren't exempt.
- These attacks involve hackers trying to gain access to your e-commerce site by injecting malicious SQL commands into existing scripts that your site needs to operate. Once successful, this changes how your site reads key data and allows the hacker to execute certain commands on your site or shut it down at will.
- Pretty much any e-commerce site that uses an SQL database is vulnerable to an SQL attack. Methods you can use to prevent an SQL attack includes making use of whitelists that ensure only certain people can access certain portions of your website, making sure your website is regularly updated and making use of latest technology, and regularly scanning your web applications for vulnerabilities.



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- **5. Malware**

- Hackers will sometimes take things to the next level and target the computer of a key person who has advanced-level access to an e-commerce site or target the server hosting the e-commerce site itself. When they want to do this, they often use malware.
- Malware will often allow a hacker to take over your e-commerce server and execute commands as if you were the one doing so in the worst case scenario; in the best case scenario, they will allow hackers to gain access to data on your system/server or hijack some of your traffic. This could result in lots of lost revenue for your e-commerce business.



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- **6. Credit and debit card fraud**
- Credit and debit card fraud is even more insidious, and research shows it is the number one kind of identity theft fraud, responsible for a whopping **35.4 percent of all identity theft fraud**. Credit and debit card fraud is so serious that an estimated \$24+ billion is lost to it annually.
- In essence, credit and debit card fraud occurs when users steal the credit card or debit card details of unsuspecting victims and then use it to make a purchase on your e-commerce store. Not knowing that the details used to purchase from you is stolen, you go ahead and release the product or service to them. When the real user learns of this fact, they request a refund or issue a chargeback to your e-commerce business.
- This results in lost revenue and could potentially hurt your standing with your payment processor.



.ENCRYPTION

- As our use of E-commerce continues to soar, the need for encryption of customer data (as well as inventories, company financial information, etc.) increases exponentially as well.
- You must be knowing the fact that whenever you sign up on a website for a membership, club, or even just for their weekly newsletter, your personal information is stored in a certain database.
- Once you start to purchase products or services from that retailer or service company, those transactions are stored in your —history‖ for a record of your activity with that company.
- If you think about it, you now have a majority of your personal information tied to your purchase history, including your basic personal details and the most secret of all the information and that is none other than your credit card information and more.



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- If it weren't for encryption, if a hacker were to breach the initial security of these websites, they would have access to all of your vital information.
- To try and prevent our system from this unethical approach that generally leads to a serious consequences of mishap, companies have special and dedicated teams within their organization that, not only are responsible for encrypting the data to keep it secure, but are also constantly reviewing new technologies to support an even stronger encryption and data security solution.



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- It is INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 8, ISSUE 10, OCTOBER 2019 ISSN 2277-8616 2882 IJSTR©2019 www.ijstr.org a continuing fight and commitment to an increased vigilance that keeps these experts steps ahead of hackers and thieves to keep your data safe.
- Here at Unleaded Group, we are committed to keeping our clients and their customers safe with the latest encryption technologies.



IMPLEMENTING E-COMMERCE SECURITY – ENCRYPTION – DECRYPTION,

- **Encryption** is the process of translating plain text data (plaintext) into something that appears to be random and meaningless (ciphertext).
- **Decryption** is the process of converting ciphertext back to plaintext. ... A symmetric key is used during both the **encryption and decryption** processes



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- **E-commerce** relies on **encryption** to secure data transmission by controlling data access and protect information on the internet and in the end improve consumer confidence.
- **Decryption** is reverse of **encryption**; it transforms **encrypted** data back into original, intelligible form.



PROTECTING CLIENT COMPUTERS

- Secure websites :
- Secure sites use encryption technology to transfer information from your **computer** to the online merchant's **computer**.
- Encryption scrambles the information in order to prevent **computer** hackers from obtaining it from route



7 MUST-HAVE SECURITY TOOLS FOR ECOMMERCE COMPANIES

- Firewalls
- SSL certifications
- Biometrics
- Scanning for Loopholes
- Threat Detection Tools
- Security Planners
- Security Plugins



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○ 1. FIREWALLS

- Once a website is online, anyone can access it. Not all the traffic received will be genuine, certain malefactors will try and harm your website, especially if it houses sensitive information.
- Firewalls are deployed as protective barriers between the internet and your website/web application. They screen each and every connection request received from private networks, identify possible malicious intent or attacks, and filter out unwanted traffic.
- Firewalls can be hardware or software. However, hardware firewalls can pose some latency and costing issues. So it is always better to go for either software or hybrid configurations.
- In addition to keeping a tab on network and server requests, and ensuring they meet appropriate security criteria, intelligent or advanced firewalls can also further challenge traffic to confirm its legitimacy.
- They also scan your internal networks and servers to identify vulnerabilities and patch them accordingly.



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- **2. SSL CERTIFICATIONS**

- **Secure Socket Layer (SSL)** certificates encrypt the communication happening between your website and the user.
- Any third party trying to listen and steal information, will not be able to decipher the content of your interactions. Nowadays, it is mandatory for websites to attain an SSL certificate and operate in an HTTPS environment.
- In fact, Google's algorithm considers HTTP websites to be unsafe and penalizes them by affecting their search engine rankings.



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- **3. BIOMETRICS**

- Biometrics use a person's physical characteristics to verify their identity and authenticity. These include your eyes, voice, or behavioral characteristics. Biometric data is perhaps one of the most reliable ways to confirm a person's legitimacy since it can't be replicated or forged easily.
- Here are five common types of biometric data:
- **Facial recognition:** identifies and remembers the person's unique facial features, patterns, and contours.
- **Iris recognition:** scans the unique patterns of your Iris, the colorful area around your pupil.
- **Fingerprint scanner:** scans the fingerprints and memorized the pattern of various ridges and valleys on your skin.
- **Voice recognition:** measures the sound waves your voice makes when you speak.
- **Behavioral characteristics:** observes how a particular user interacts with computer systems or software. It could be the unique way in which you solve a security-authentication puzzle, or how you move the mouse, your keystrokes, etc.



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- **4. SCANNING FOR LOOPHOLES**

- You can use scanning tools like [FreeScan](#) by Qualys. FreeScan gives you an overview of your security and compliance profile and recommends fixes and improvements.
- It allows you five free scans which include the following audits:
 - Network Vulnerability Scan for Server and App
 - Patch Tuesday PC Audit
 - OWASP Web Application Audit
 - SCAP Compliance Audit
- Periodical scanning will help you detect malicious scripts, misconfigurations, or vulnerabilities present in your website.
- Most tools available online cover a wide range of security areas, from network to server to web application vulnerabilities.
- You can also checkout popular alternatives to FreeScan like Detectify, Pentest Web Server Vulnerability Scanner, Probe.ly, etc.



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- **5. THREAT DETECTION TOOLS LIKE TRUSTWAVE**
- One successful mantra for an impenetrable website is being proactive with your security measures. It is always better to prevent cyber attacks than deal with the aftermath of one.
- Trustwave is a threat detection and response company that will detect, assess, and classify vulnerabilities on your web application, network, and databases.
- Their security testing services and SpiderLabs testing give you an insight into the latest loopholes, malwares, attack vectors, and breaches, so that your system's security measures are powerful enough to protect you from the latest cyber attacks and exploits.
- You can also checkout Trustwave's alternatives like Secureworks, Rapid 7, and Qualys.



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- **6. SECURITY PLANNERS**

- If you're a small business, then hatching an elaborate security plan that tightens all loose ends in your system might not be feasible.
- You might face budgetary constraints in trying to employ the right resources and manpower.
- If you're facing such an issue, you can use tools like [FCC Small Biz Cyber Planner](#).
- Developed by the Federal Communications Commission, this tool helps you create custom security [plans for your business](#).
- You can select the key security areas you want to focus on, and the tool will automatically generate a plan accordingly.
- Its plans include details like data theft and financial loss mitigation, immediate steps to take in case of an infection, best practices on spyware, and recommendations for installing new security software.
- It also has a cyber security tip sheet that mentions security best practices you should follow.



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- **7. SECURITY PLUGINS**

- All eCommerce websites run on some platform, be it Magento, Shopify, WooCommerce, or OpenCart, etc.
- The best part of using an eCommerce CMS is that you'll find a ton of extensions in the platform's repository, which can be used to enhance the functionality of your store.
- Look for appropriate security plugins your platform offers and choose one on the basis of your needs.
- You can either go for end-to-end solutions, or extensions that look after specific aspects of your store's security.



E-COMMERCE COMMUNICATION CHANNELS AND WEB SERVERS ENCRYPTION,

- **Email Marketing**
- Without question, email marketing is the most commonly invested marketing channel.
- It's cost efficient, and it targets consumers directly.
- Popular services such as MailChimp and Constant Contact, allow even the most novice users to design and schedule effective email campaigns.
- Even if you decide to pay a third party to generate email campaigns, the costs are relatively much lower than other forms of advertising.



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- The brilliant part about email marketing is that no matter what customers will have eyes on your company, even if it's for a split second before they delete the email.
- Planting your company name in the minds of consumers is an integral part of long term brand growth.
- They may delete an email the first time, but if they don't unsubscribe, it's usually a good indicator that they have interest in your products/services, they're just not ready to buy right now.
- Email marketing can work right away, or farther down the road when the right deal comes along.
- Emails also allow you to use detailed analytics to determine whether or not customers are clicking on your campaigns.
- You can also use A/B testing to identify popular marketing elements and adjust your campaigns on the fly.



- - **Pay-Per-Click (PPC)**

- As you can imagine there are a lot of PPC channels out there to choose from, but based on volume of traffic, the two channels you really need to consider are Google Adwords and Facebook Ads.
- Google Adwords works by using a ‘query click’ system. For instance, you are an online stationery store who has purchased an ad related the specific search query: “stationery products”. When a consumer enters “Stationery products” into a Google Search, your ad pops up.
- It’s a highly targeted method, however the only downside is cost.
- Google charges a pretty penny these days, which is understandable considering their user base.
- Facebook is not as expensive but it’s definitely no slouch.



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- Unlike Google's query based system,
- Facebook is content based, so your campaigns not only have to be targeted they have to look good.
- There's many reasons to invest with Facebook Ads:
- Facebook has a massive database of information on its users; gender, age, location, politics, marriage status, career, hobbies, interests, etc.
- This allows marketers to completely customize their target strategy with precise accuracy. Accurate advertising means a much higher return on investment.
- Facebook owns Instagram. Many people just maintain their Facebook accounts, and instead actively use Instagram everyday.
- Facebook Ads allows you to customize your campaign to appear on Instagram as well. Fashion, fitness, and entertainment are three very popular industries on Instagram.
- Instagram targets a younger demographic, so depending on your product, this may be the right option for you.



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- **SEO (Search Engine Optimization)**
- Naturally, we can't talk marketing without talking SEO. It's kind of our bread and butter.
- It also happens to be the most effective way to improve your e-commerce rankings in popular search engines like Google and Bing.
- High search engine rankings and indexing is important; according to recent studies around 16% of new e-commerce customers come from organic search.
- The challenge with SEO is that Google's algorithm is always evolving, so as a marketer you have to stay on top of the latest trends in order to stay competitive and maintain a high ranking.
- The primary takeaway from strong SEO is that when a customer organically stumbles upon your site in a search engine, chances are they are looking for a consumer solution that your company can provide.
- In other words, SEO brings you paying customers.



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- **Content Marketing**

- Content marketing is not only a great way to improve your SEO.
- it also keeps your customer engaged and acts as a window to your company's industry.
- A blog is a great example of content marketing.
- Let's say you sell nutritional supplements online. If your blog publishes weekly dietary plans, tips, and recipes your customers are going to experience a give and take relationship with your company: you provide them with the strategies and tips, and in return they continue to shop your store.
- By blogging and creating intelligently crafted content you are also setting up your brand as an expert, which motivates consumers to buy your products over a company who provides zero content for their customers.



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- **Social Media Marketing**

- This refers to the unpaid side of social media.
- Facebook, Instagram, Twitter, Pinterest, Snapchat, the list goes on.
- The one thing all these platforms share in common is that they're designed to showcase an individual's personality, or lifestyle.
- For an e-commerce business this a great way to build trust with your customers by highlighting your human side.



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- You don't have to post selfies of the CEO, it just means scaling back on the advertising side of things.
- Instead, focus on familiarizing your audience with the business, and engaging followers with contests, replies, reposts and shoutouts.
- Highlighting your company values through posts and engagement will prompt followers with similar values to feel a bond. Think of social media as tool to show your customers what you both have in common.
- We should also mention affiliate marketing which has become very popular.
- There are thousands of popular social media influencers and companies are paying them to advertise their products for their followers.
- The demographic are typically younger, so we recommend researching affiliate marketing to see if it's right for you.



- - **Re-Targeting**

- This isn't quite a specific channel, but it is a very important strategy to consider.

- Retargeting means marketing to consumers who have already showed interest in your company.

- **Abandon Carts –**

- Any e-commerce business understands the pain of seeing an abandon cart.

- By targeting these customers you are simply reminding them of a purchase that they were considering making.

- The intent to buy is there, they just need a little motivation.



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- **Up-selling or cross-selling** –
- When a customer has already made a purchase, it's a good opportunity to highlight complimentary products.
- For instance, if a customer buys a printer, why not offer them some paper?
- How do you accomplish retargeting?
- The best way is through email. In order to retarget a customer you'll need to have some sort of contact information.
- **Wrapping Up**
- Allocating your marketing budget can be a challenge with so many different online channels.
- Every business varies in what will be their most successful course of action.
- A good way to determine what's right for your business is by looking at your audience. Are they young?
- Try advertising on Instagram. Is most of your traffic organic? Ramp up your SEO. Is your brand highly personable? Flex your stuff on social media!



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- **The Tools used for secure channel of communication are:**
- 1. Secure Sockets Layer (SSL)
- 2. Certificate authorities (CAs)
- 3. Virtual private networks
- **Secure Sockets Layer (SSL) :**
- Secure Sockets Layer (SSL) A commonly used encryption technique for scrambling data as it is passed across the Internet from a customer's web browser to a merchant's web server.



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- Secure Electronic Transaction (SET)
- A standard for public-key encryption intended to enable secure e-commerce transactions.
- Lead-development by MasterCard and Visa.
- Secure Sockets Layer Protocol (SSL)
- SSL is a security protocol, originally developed by Netscape, but now supported by all browsers such as Microsoft Internet Explorer.
- SSL is used in the majority of B2C e-commerce transactions since it is easy for the customer to use without the need to download additional software or a certificate.
- When a customer enters a secure checkout area of an e-commerce site SSL is used and the customer is prompted that 'you are about to view information over a secure connection' and a key symbol is used to denote this security.



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- When encryption is occurring they will see that the web address prefix in the browser changes from http://' to https://' and a padlock appears at the bottom of the browser window.
- The main facilities it provides are security and confidentiality.
- SSL enables a private link to be set up between customer and merchant.
- Encryption is used to scramble the details of an e-commerce transaction as it is passed between sender and receiver and also when the details are held on the computers at each end.
- It would require a determined attempt to intercept such a message and decrypt it.



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- The detailed stages of SSL are as follows: -
- Client browser sends request for a secure connection.
- Server responds with a digital certificate which is sent for authentication.
- Client and server negotiate session keys, which are symmetrical keys used only for the duration of the transaction.
- Since, with enough computing power, time and motivation, it is possible to decrypt messages encrypted using SSL, much effort is being put into finding more secure methods of encryption such as SET.
- From a merchant's point of view there is also the problem that authentication of the customer is not possible without resorting to other methods such as credit checks.



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- **Certificate authorities (CAs):**
- For secure e-commerce, there is a requirement for the management of the vast number of public keys.
- This management involves procedures and protocols necessary throughout the lifetime of a key — generation, dissemination, revocation and change together with the administrative functions of time/date stamping and archiving.
- The successful establishment of a CA is an immense challenge of trust building and complex management.
- There are two opposing views on how that challenge should be met
- Decentralize & market-driven, creating brand-name-based 'islands of trust' such as the Consumers Association.
- There is a practical need for a local physical office to present certificates of attestable value,
- e.g. passports, drivers' licences. Banks and the Post Office have a huge advantage.



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- **Virtual private networks:**
- A virtual private network (VPN) is a private wide-area network that runs over the public network, rather than a more expensive private network. The technique by which VPN operates is sometimes referred to as 'tunnelling; and involves encrypting both packet headers and content using a secure form of the Internet Protocol known as IPSec.
- VPNs enable the global organization to conduct its business securely, but using the public Internet rather than more expensive proprietary systems



SSL PROTOCOL, FIREWALLS, CRYPTOGRAPHY METHODS, VPNS, PROTECTING, NETWORKS, POLICIES AND PROCEDURES

- The **SSL** certificate in **e-commerce** responds to the acronym Secure Sockets Layer. It was developed by Netscape in 1994. It is defined as a web **protocol** designed to provide greater security in online communications. This certificate provides a secure channel between two devices (mobile phones, computers, etc.)
- **SSL** Stands for secure sockets layer. Protocol for web browsers and servers that allows for the authentication, encryption and decryption of data sent over the Internet.



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- when **SSL** is used to secure communication between a web browser and a web server. This turns a website's address from HTTP to HTTPS, the 'S' standing for 'secure'.
- A **Firewall** is a network security device that monitors and filters incoming and outgoing network traffic based on an organization's previously established security policies. At its most basic, a **firewall** is essentially the barrier that sits between a private internal network and the public Internet.



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- A **firewall** is an **essential** part of your business' security system. Without it, your network is open to threats. A **firewall** keeps destructive and disruptive forces out, and controls the incoming and outgoing network traffic based on security parameters that you can control and refine.



CRYPTOGRAPHY METHODS

- Definition of 'Cryptography'
- **Definition:** Cryptography is associated with the process of converting ordinary plain text into unintelligible text and vice-versa. It is a method of storing and transmitting data in a particular form so that only those for whom it is intended can read and process it. Cryptography not only protects data from theft or alteration, but can also be used for user authentication.

Description: Earlier cryptography was effectively synonymous with encryption but nowadays cryptography is mainly based on mathematical theory and computer science practice.



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- *Modern cryptography concerns with:*
- Confidentiality - Information cannot be understood by anyone
- Integrity - Information cannot be altered.
- Non-repudiation - Sender cannot deny his/her intentions in the transmission of the information at a later stage
- Authentication - Sender and receiver can confirm each
- Cryptography is used in many applications like banking transactions cards, computer passwords, and e-commerce transactions.



- *Three types of cryptographic techniques used in general.*
- 1. Symmetric-key cryptography
- 2. Hash functions.
- 3. Public-key cryptography
- **Symmetric-key Cryptography:** Both the sender and receiver share a single key. The sender uses this key to encrypt plaintext and send the cipher text to the receiver. On the other side the receiver applies the same key to decrypt the message and recover the plain text.
- **Public-Key Cryptography:** This is the most revolutionary concept in the last 300-400 years. In Public-Key Cryptography two related keys (public and private key) are used. Public key may be freely distributed, while its paired private key, remains a secret. The public key is used for encryption and for decryption private key is used.
- **Hash Functions:** No key is used in this algorithm. A fixed-length hash value is computed as per the plain text that makes it impossible for the contents of the plain text to be recovered. Hash functions are also used by many operating systems to encrypt passwords.



VPNs,

- A virtual private network, better known as a VPN, protects your identity and browsing activity from hackers, businesses, government agencies, and other snoops. When connecting to the internet, your data and IP address are hidden by a type of virtual tunnel. This keeps others from spying on your online activity.



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- When you sign up with a VPN provider, you first log onto that service before you connect to the internet. Once you are connected, others can't see your activity. Your VPN provider will encrypt your data, scrambling it so that hackers, government agencies, and businesses can't see what websites you visit, messages you send, social media sites you use, or files you download.



POLICIES AND PROCEDURES

- Applicable Laws & Regulations
- **Regulatory Technology & Data Protection**
- Foreign Direct Investment Policy
- Foreign Exchange Management Act, 1999
- Companies Act, 2013
- Payment and Settlement Act, 2007 and other RBI regulations on payment mechanisms
- Labelling and Packaging



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- Legal Metrology Act, 2009 read with Legal Metrology (Packaged Commodity) Rules, 2011
- Sales, Shipping, Refunds and Returns
- Moreover, Regulations prescribed by the relevant ministry/state regulations
- Information Technology Act, 2000
- Additionally, Information Technology (Intermediaries Guidelines) Rules, 2011
- Information Technology Act, 2000 (IT Act) and General Data Protection Regulations (GDPR).
- Consumer Protection Act, 1986



- - **Tax Legal**

- Income Tax Act, 1961

- Double Taxation Avoidance Agreement

- Goods and Services Tax

- Indian Contract Act, 1872

- Indian Copyright Act, 1957

- The Patents Act, 1970

- Intellectual Property Issues

- Labour laws





UNIT II

PROBLEM IDENTIFICATION AND RESEARCH DESIGN

TOPICS

- Literature Review – Process, Identification of Research Gap and Problem,
- Cited Reference Software-Zotero and Mendeley.
- Research Design – Statement of the Problem,
- Objectives of the Study,
- Scope of the Study,
- Research Methodology
- Types of Data: Primary Data & Secondary Data, Sampling, Tools & Techniques of Data Analysis and Report Presentation.

Definition of a Literature Review

- A **literature review** is a descriptive, analytic summary of the existing material relating to a particular topic or area of **study**.
- A **literature review** includes surveying of scholarly articles, books and other sources
 - (e.g. dissertations, conference proceedings relevant
 - to a particular issue, area of research, or theory).
 - Provides a short description and critical evaluation of
 - work critical to the topic.
 - Offers an overview of significant literature published
 - on a topic.

Literature Review – Process

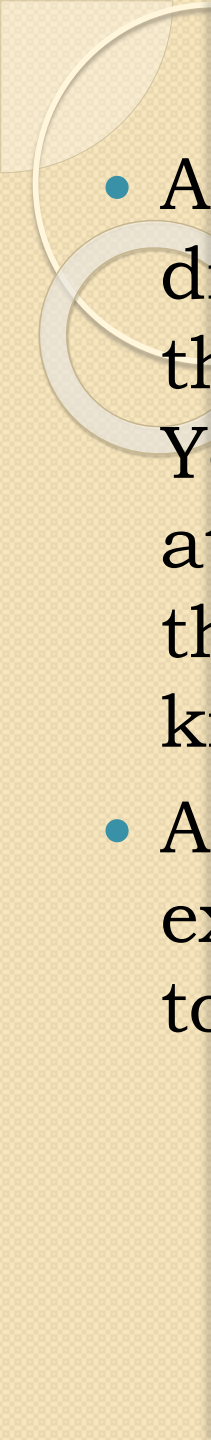
- The literature review process involves a systematic examination of prior scholarly works.
- **Process of literature review are**
- Choose a topic.
- Define your research question.
- Decide on the scope of your review.
- How many studies do you need to look at?
- Select the databases you will use to conduct your searches.
- Make a list of the databases you will search.
- Conduct your searches and find the literature.
- Review the literature.

Identification of Research Gap and Problem,

- Research gap is a research question or problem which has not been answered appropriately in a given field of study.
- Identifying gaps and generating research questions can be regarded as the first and most important step in writing a research paper.
- Research gap is the research problem discovered after you'd conducted a rigorous literature review.

Research problem

- A research problem, in general, refers to some difficulty which a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same.
- Problem statement is a constructed sentence how you describe your research problem which is usually a subset of your research problem.

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- A research problem is a specific issue, difficulty, contradiction, or gap in knowledge that you will aim to address in your research. You might look for practical problems aimed at contributing to change, or theoretical problems aimed at expanding knowledge.
 - A good research problem should address an existing gap in knowledge in the field and lead to further research

Components of a research problem

- There must be an individual or a group which has some difficulty or the problem.
- There must be some objective(s) to be attained at. If one wants nothing, one cannot have a problem.
- There must be alternative means (or the courses of action) for obtaining the objective(s) one wishes to attain.

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- This means that there must be *at least two means available to a researcher* for his research if he has no choice of means, he cannot have a problem.
- There must remain some doubt in the mind of a researcher with regard to the selection of alternatives. This means that research must answer the question concerning the relative efficiency of the possible alternatives.
- There must be some environment(s) to which the difficulty pertains.


Cited Reference Software-Zotero and Mendeley.

- **Zotero** saves your citation library to your local computer, but syncs with multiple computers so you can work from home or school.
- **Mendeley** is a program that lives on your local computer, but syncs with a web account archive web pages and import citations from sites such as Amazon, Flickr, and ArtSTOR

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- **Zotero** is free and open source software, and has a large user group, user forums and a developer community.
- **Zotero** is probably the easiest to download and learn. If you want to archive web pages.
- **Zotero and Mendeley** allow you to capture a screenshot of the page as well as other data about the page.

Research Design – Statement of the Problem,

- First of all the problem should be stated in a broad general way, keeping in view either some practical concern or some scientific or intellectual interest.
- For this purpose, the researcher must immerse himself thoroughly in the subject matter concerning which he wishes to pose a problem.
- In case of social research, it is considered advisable to do some field observation and as such the researcher may undertake some sort of preliminary survey or what is often called *pilot survey*.

- 
- Then the researcher can himself state the problem or he can seek the guidance of the guide or the subject expert in accomplishing this task. Often, the guide puts forth the problem in general terms, and it is then up to the researcher to narrow it down and phrase the problem in operational terms.
 - In case there is some directive from an organisational authority, the problem then can be stated accordingly the problem stated in a broad general way which may contain various ambiguities which must be resolved by cool thinking and rethinking over the problem.
 - At the same time the feasibility of a particular solution has to be considered and the same should be kept in view while stating the problem.

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- A statement of the problem is used in research work as a claim that outlines the problem addressed by a study.

Objectives of the Study

- Research objectives describe concisely what the research is trying to achieve.
- They summarize the accomplishments a researcher wishes to achieve through the project and provides direction to the study
- Your objectives should be stated using action verbs that are specific enough to be measured, for example: to compare, to calculate, to assess, to determine, to verify, to calculate, to describe, to explain, etc.


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- The purpose of research is to discover answers to questions through the application of scientific procedures.
- The main aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though each research study has its own specific purpose,

- we may think of research objectives as falling into a number of following broad groupings:
 - 1. To gain familiarity with a phenomenon or to achieve new insights into it (studies with this object in view are termed as *exploratory or formulative research studies*);
 - 2. To portray accurately the characteristics of a particular individual, situation or a group (studies with this object in view are known as *descriptive research studies*);

- 
- 3. To determine the frequency with which something occurs or with which it is associated with something else (studies with this object in view are known as *diagnostic research* studies);
 - 4. To test a hypothesis of a causal relationship between variables (such studies are known as *hypothesis-testing research studies*).


Scope of the Study

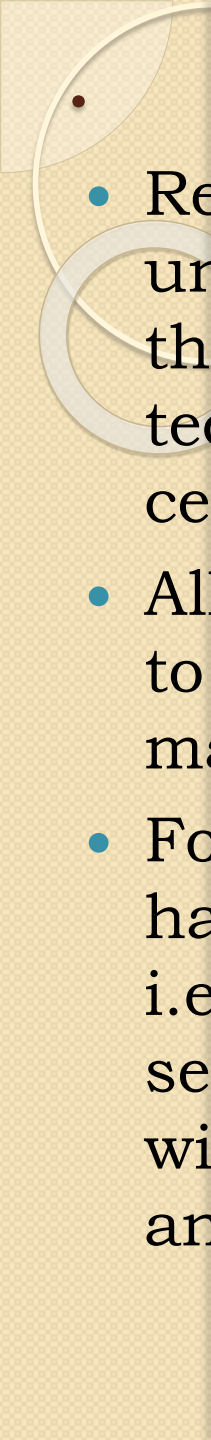
- The scope of a study explains the extent to which the research area will be explored in the work and specifies the parameters within the study will be operating.
- Basically, this means that you will have to define what the study is going to cover and what it is focusing on.


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- The Scope of study in the thesis or research paper contains the explanation of what information or subject is being analyzed.
 - It is followed by an explanation of the limitation of the research.
 - Research usually limited in scope by sample size, time and geographic area


Research Methodology


- *Research methodology is a way to systematically solve the research problem.*
- *It may be understood as a science of studying how research is done scientifically.*
- *In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them.*
- *It is necessary for the researcher to know not only the research methods/techniques but also the methodology.*

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- Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode, the median or the standard deviation or chi-square, how to apply particular research techniques, but they also need to know which of these methods or techniques, are relevant and which are not, and what would they mean and indicate.

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- Researchers also need to understand the assumptions underlying various techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not.
 - All this means that it is necessary for the researcher to design his methodology for his problem as the same may differ from problem to problem.
 - For example, an architect, who designs a building, has to consciously evaluate the basis of his decisions, i.e., he has to evaluate why and on what basis he selects particular size, number and location of doors, windows and ventilators, uses particular materials and not others and the like. Similarly,

- 
- The scope of research methodology is wider than that of research methods.
 - Thus, when we talk of research methodology we not only talk of the research methods but also consider the logic behind the methods we use in the context of our research study and explain why we are using a particular method or technique and why we are not using others so that research results are capable of being evaluated either by the researcher himself or by others. Why a research study has been undertaken,

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- Similarly in research the scientist has to expose the research decisions to evaluation before they are implemented.
 - He has to specify very clearly and precisely what decisions he selects and why he selects them so that they can be evaluated by others also.
 - From what has been stated above, we can say that research methodology has many dimensions and research methods do constitute a part of the research methodology.



- how the research problem has been defined, in what way and why the hypothesis has been formulated, what data have been collected and what particular method has been adopted, why particular technique of analysing data has been used and a host of similar other questions are usually answered when we talk of research methodology concerning a research problem or study.

Types of Data

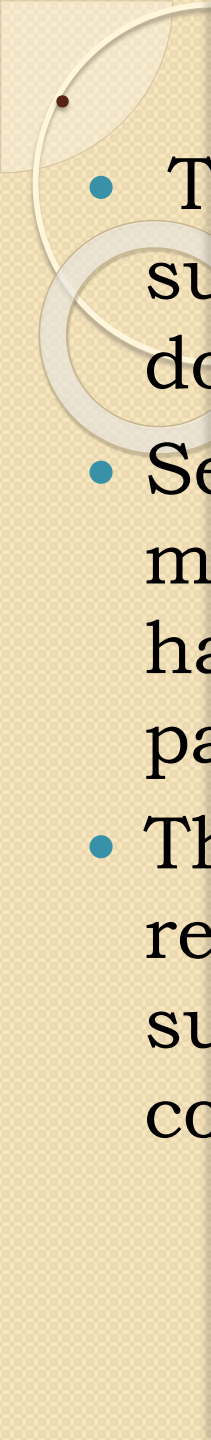
- **Primary Data & Secondary Data**

A. PRIMARY DATA

- We collect primary data during the course of doing experiments in an experimental research but in case we do research of the descriptive type and perform surveys, whether sample surveys or census surveys, then we can obtain primary data either through observation or through direct communication with respondents in one form or another or through personal interviews.
- This, in other words, means that there are several methods of collecting primary data, particularly in surveys and descriptive researches.

Important ones are:

- **OBSERVATION METHOD**
- The observation method is the most commonly used method specially in studies relating to behavioral sciences.
- Observation becomes a scientific tool and the method of data collection for the researcher, when it serves a formulated research purpose, is systematically planned and recorded and is subjected to checks and controls on validity and reliability.
- Under the observation method, the information is sought by way of investigator's own direct observation without asking from the respondent.

- 
- The main advantage of this method is that subjective bias is eliminated, if observation is done accurately.
 - Secondly, the information obtained under this method relates to what is currently happening; it is not complicated by either the past behavior or future intentions or attitudes.
 - Thirdly, this method is independent of respondents' willingness to respond and as such is relatively less demanding of active cooperation on the part of respondents.

Limitations of OBSERVATION METHOD

- It is an expensive method.
- The information provided by this method is very limited.
- Unforeseen factors may interfere with the observational task. At times, the fact that some people are rarely accessible to direct observation creates obstacle for this method to collect data effectively

Controlled and uncontrolled observation

- Controlled observation takes place according to definite pre-arranged plans, involving experimental procedure.
- In Controlled observation, we use mechanical (or precision) instruments as aids to accuracy and standardisation. Such observation has a tendency to supply formalised data upon which generalisations can be built with some degree of assurance
- Generally, controlled observation takes place in various experiments that are carried out in a laboratory or under controlled conditions,

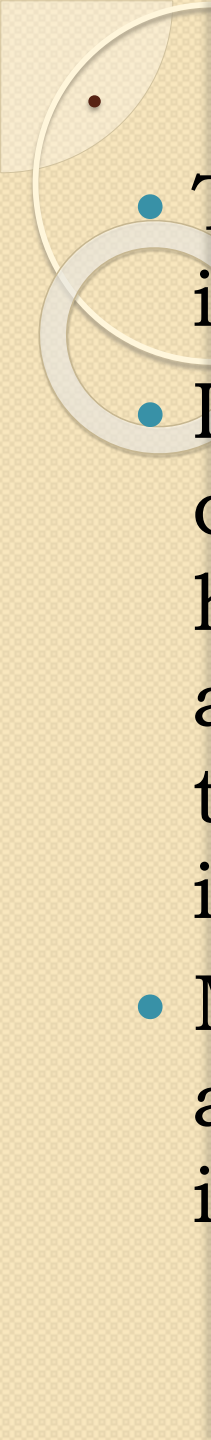
- Non-controlled observation, no attempt is made to use precision instruments.
- The major aim of this type of observation is to get a spontaneous picture of life and persons.
- It has a tendency to supply naturalness and completeness of behavior, allowing sufficient time for observing it.
- The main pitfall of non-controlled observation is that of subjective interpretation.
- There is also the danger of having the feeling that we know more about the observed phenomena than we actually do whereas uncontrolled observation is resorted to in case of exploratory researches.

II. INTERVIEW METHOD

- The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses.
- This method can be used through personal interviews and, if possible, through telephone interviews.

PERSONAL INTERVIEWS:

- Personal interview method requires a person known as the interviewer asking questions generally in a face-to-face contact to the other person or persons.
- This sort of interview may be in the form of direct personal investigation or it may be indirect oral investigation.
- In the case of direct personal investigation the interviewer has to collect the information personally from the sources concerned.
- He has to be on the spot and has to meet people from whom data have to be collected.

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- This method is particularly suitable for intensive investigations.
 - Indirect oral examination can be conducted under which the interviewer has to cross-examine other persons who are supposed to have knowledge about the problem under investigation and the information, obtained is recorded.
 - Most of the commissions and committees appointed by government to carry on investigations make use of this method.

Types of Interview

- Structured interviews
- Unstructured interviews
- Focused interviews
- Clinical interview
- Non-directive interview

Structured interviews

- The method of collecting information through personal interviews is usually carried out in a structured way.
- Structured interviews involve the use of a set of predetermined questions and of highly standardised techniques of recording. Thus, the interviewer in a structured interview follows a rigid procedure laid down, asking questions in a form and order prescribed.

Unstructured interviews

- Unstructured interviews do not follow a system of pre-determined questions and standardised techniques of recording information.
- In a non-structured interview, the interviewer is allowed much greater freedom to ask, in case of need, supplementary questions or at times he may omit certain questions if the situation so requires.
- He may even change the sequence of questions. He has relatively greater freedom while recording the responses to include some aspects and exclude others.
- Analysis of unstructured responses becomes much more difficult and time-consuming .
- Unstructured interviews also demand deep knowledge and greater skill on the part of the interviewer.
- Unstructured interview, however, happens to be the central technique of collecting information in case of exploratory or formulative research studies.

Focused interviews

- Focused interview is meant to focus attention on the given experience of the respondent and its effects.
- Under it the interviewer has the freedom to decide the manner and sequence in which the questions would be asked and has also the freedom to explore reasons and motives.
- The main task of the interviewer in case of a focused interview is to confine the respondent to a discussion of issues with which he seeks conversance.
- Such interviews are used generally in the development of hypotheses and constitute a major type of unstructured interviews

Clinical interview


- The clinical interview is concerned with broad underlying feelings or motivations or with the course of individual's life experience.
- The method of eliciting information under it is generally left to the interviewer's discretion.

Non-directive interview

- In non-directive interview, the interviewer's function is simply to encourage the respondent to talk about the given topic with a bare minimum of direct questioning.
- The interviewer often acts as a catalyst to a comprehensive expression of the respondents' feelings and beliefs and of the frame of reference within which such feelings and beliefs take on personal significance.

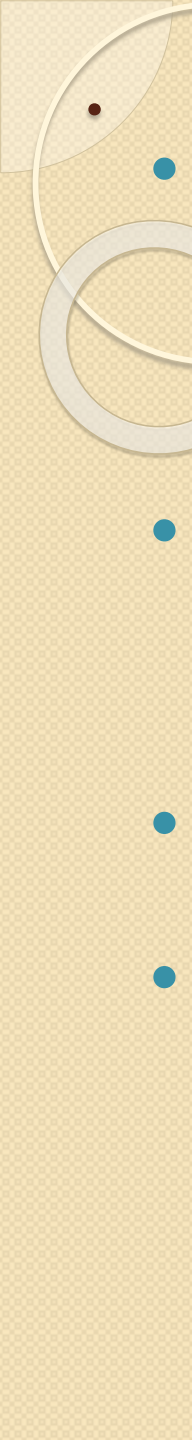
The merits of the interview method

- More information and that too in greater depth can be obtained.
- Interviewer by his own skill can overcome the resistance, if any, of the respondents; the interview method can be made to yield an almost perfect sample of the general population.
- There is greater flexibility under this method as the opportunity to restructure questions is always there, specially in case of unstructured interviews.
- Observation method can as well be applied to recording verbal answers to various questions.
- Personal information can as well be obtained easily under this method.

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- Samples can be controlled more effectively as there arises no difficulty of the missing returns; non-response generally remains very low.
 - The interviewer can usually control which person(s) will answer the questions. This is not possible in mailed questionnaire approach. If so desired, group discussions may also be held.
 - The interviewer may catch the informant off-guard and thus may secure the most spontaneous reactions than would be the case if mailed questionnaire is used.
 - The language of the interview can be adopted to the ability or educational level of the person interviewed and as such misinterpretations concerning questions can be avoided.
 - The interviewer can collect supplementary information about the respondent's personal characteristics and environment which is often of great value in interpreting results.


Weaknesses of the interview method

- It is a very expensive method, specially when large and widely spread geographical sample is taken.
- There remains the possibility of the bias of interviewer as well as that of the respondent; there also remains the headache of supervision and control of interviewers.
- Certain types of respondents such as important officials or executives or people in high income groups may not be easily approachable under this method and to that extent the data may prove inadequate.
- This method is relatively more-time-consuming, specially when the sample is large and recalls upon the respondents are necessary.

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- The presence of the interviewer on the spot may over-stimulate the respondent, sometimes even to the extent that he may give imaginary information just to make the interview interesting.
 - Under the interview method the organisation required for selecting, training and supervising the field-staff is more complex with formidable problems.
 - Interviewing at times may also introduce systematic errors.
 - Effective interview presupposes proper rapport with respondents that would facilitate free and frank responses. This is often a very difficult requirement.


Pre-requisites and basic requirement of interviewing:

- interviewers should be carefully selected, trained and briefed.
- They should be honest, sincere, hardworking, impartial and must possess the technical competence and necessary practical experience.
- Occasional field checks should be made to ensure that interviewers are neither cheating, nor deviating from instructions given to them for performing their job efficiently.
- Provision should also be made in advance so that appropriate action may be taken if some of the selected respondents refuse to cooperate or are not available when an interviewer calls upon them.
- Interviewing is an art governed by certain scientific principles.

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- Friendly atmosphere of trust and confidence must be created, so that respondents may feel at ease while talking to and discussing with the interviewer.
 - The interviewer must ask questions properly and intelligently and must record the responses accurately and completely.
 - At the same time, the interviewer must answer legitimate question(s), if any, asked by the respondent and must clear any doubt that the latter has.
 - The interviewers approach must be friendly, courteous, conversational and unbiased.
 - The interviewer should not show surprise or disapproval of a respondent's answer but he must keep the direction of interview in his own hand, discouraging irrelevant conversation and must make all possible effort to keep the respondent on the track.

TELEPHONE INTERVIEWS:

- This method of collecting information consists in contacting respondents on telephone itself. It is not a very widely used method, but plays important part in industrial surveys, particularly in developed regions.
- The chief merits of such a system are:
 - 1. It is more flexible in comparison to mailing method.
 - 2. It is faster than other methods i.e., a quick way of obtaining information.
 - 3. It is cheaper than personal interviewing method; here the cost per response is relatively low.

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- 4. Recall is easy; callbacks are simple and economical.
 - 5. There is a higher rate of response than what we have in mailing method; the non-response is generally very low.
 - 6. Replies can be recorded without causing embarrassment to respondents.
 - 7. Interviewer can explain requirements more easily.
 - 8. At times, access can be gained to respondents who otherwise cannot be contacted for one reason or the other.
 - 9. No field staff is required.
 - 10. Representative and wider distribution of sample is possible.

Demerits of Telephone Interview

- 1. Little time is given to respondents for considered answers; interview period is not likely to exceed five minutes in most cases.
- 2. Surveys are restricted to respondents who have telephone facilities.
- 3. Extensive geographical coverage may get restricted by cost considerations.
- 4. It is not suitable for intensive surveys where comprehensive answers are required to various questions.
- 5. Possibility of the bias of the interviewer is relatively more.
- 6. Questions have to be short and to the point; probes are difficult to handle.

III. QUESTIONNAIRE METHOD

- This method of data collection is quite popular, particularly in case of big enquiries.
- It is being adopted by private individuals, research workers, private and public organisations and even by governments.
- In this method a questionnaire is sent (usually by post) to the persons concerned with a request to answer the questions and return the questionnaire.
- A questionnaire consists of a number of questions printed or typed in a definite order on a form or set of forms.
- The questionnaire is mailed to respondents who are expected to read and understand the questions and write down the reply in the space meant for the purpose in the questionnaire itself.
- The respondents have to answer the questions on their own. The method of collecting data by mailing the questionnaires to respondents is most extensively employed in various economic and business surveys.

MERITS OF QUESTIONNAIRE METHOD

- 1. There is low cost even when the universe is large and is widely spread geographically.
- 2. It is free from the bias of the interviewer; answers are in respondents' own words.
- 3. Respondents have adequate time to give well thought out answers.
- 4. Respondents, who are not easily approachable, can also be reached conveniently.
- 5. Large samples can be made use of and thus the results can be made more dependable and reliable.

DEMERITS OF QUESTIONNAIRE METHOD

- 1. Low rate of return of the duly filled in questionnaires; bias due to no-response is often indeterminate.
- 2. It can be used only when respondents are educated and cooperating.
- 3. The control over questionnaire may be lost once it is sent.
- 4. There is inbuilt inflexibility because of the difficulty of amending the approach once questionnaires have been dispatched.
- 5. There is also the possibility of ambiguous replies or omission of replies altogether to certain questions; interpretation of omissions is difficult.
- 6. It is difficult to know whether willing respondents are truly representative.
- 7. This method is likely to be the slowest of all

Pilot survey

- Pilot survey is the replica and rehearsal of the main survey.
- Such a survey, being conducted by experts, brings to the light the weaknesses (if any) of the questionnaires and also of the survey techniques.
- From the experience gained in this way, improvement can be effected.

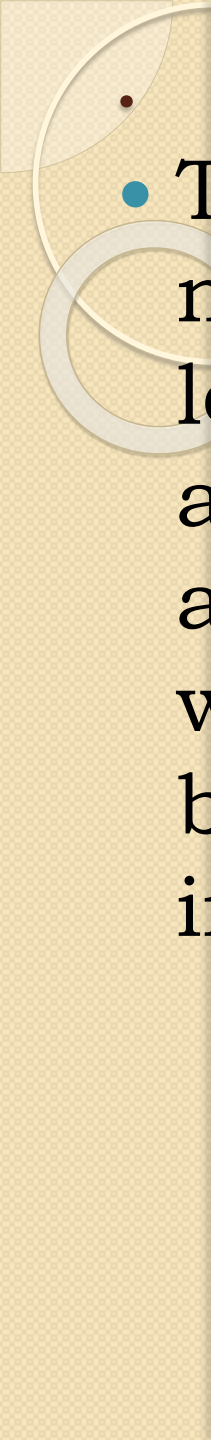
SCHEDULE METHOD

- This schedule method of data collection is very much like the collection of data through questionnaire, with little difference which lies in the fact that schedules (proforma containing a set of questions) are being filled in by the enumerators who are specially appointed for the purpose.
- These enumerators along with schedules, go to respondents, put to them the questions from the proforma in the order the questions are listed and record the replies in the space meant for the same in the proforma.

SECONDARY DATA


- Secondary data means data that are already available i.e., they refer to the data which have already been collected and analyzed by someone else.
- When the researcher utilizes secondary data, then he has to look into various sources from where he can obtain them. In this case he is certainly not confronted with the problems that are usually associated with the collection of original data.

- Secondary data may either be published data or unpublished data.
- Usually published data are available in various publications of the central, state and local governments;
- various publications of foreign governments or of international bodies and their subsidiary organisations; technical and trade journals; books, magazines and newspapers; reports and publications of various associations connected with business and industry, banks, stock exchanges, etc.;
- • Reports prepared by research scholars, universities, economists, etc. in different fields; and public records and statistics, historical documents, and other sources of published information.

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- The sources of unpublished data are many; they may be found in diaries, letters, unpublished biographies and autobiographies and also may be available with scholars and research workers, trade associations, labour bureaus and other public/ private individuals and organisations.

Characteristic of secondary data


- Reliability of data: The reliability can be tested by finding out such things about the said data:
 - (a) Who collected the data?
 - (b) What were the sources of data?
 - (c) Were they collected by using proper methods
 - (d) At what time were they collected?
 - (e) Was there any bias of the compiler?
 - (f) What level of accuracy was desired?
 - (g) Was it achieved?


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- 2. Suitability of data: The data that are suitable for one enquiry may not necessarily be found suitable in another enquiry. Hence, if the available data are found to be unsuitable, they should not be used by the researcher.
 - In this context, the researcher must very carefully scrutinize the definition of various terms and units of collection used at the time of collecting the data from the primary source originally.
 - Similarly, the object, scope and nature of the original enquiry must also be studied.
 - If the researcher finds differences in these, the data will remain unsuitable for the present enquiry and should not be used.


- Adequacy of data:
- If the level of accuracy achieved in data is found inadequate for the purpose of the present enquiry, they will be considered as inadequate and should not be used by the researcher.
- The data will also be considered inadequate, if they are related to an area which may be either narrower or wider than the area of the present enquiry.
- From all this we can say that it is very risky to use the already available data.
- The already available data should be used by the researcher only when he finds them reliable, suitable and adequate. But he should not blindly discard the use of such data if they are readily available from authentic sources and are also suitable and adequate for in that case it will not be economical to spend time and energy in field surveys for collecting information.

Factors to consider when choosing a Data collection method

- Nature, scope and object of enquiry:
- This constitutes the most important factor affecting the choice of a particular method.
- The method selected should be such that it suits the type of enquiry that is to be conducted by the researcher.
- This factor is also important in deciding whether the data already available (secondary data) are to be used or the data not yet available (primary data) are to be collected.

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- Availability of funds: Availability of funds for the research project determines to a large extent the method to be used for the collection of data.
 - When funds at the disposal of the researcher are very limited, he will have to select a comparatively cheaper method which may not be as efficient and effective as some other costly method.
 - Finance, in fact, is a big constraint in practice and the researcher has to act within this limitation.

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- Time factor:
 - Availability of time has also to be taken into account in deciding a particular method of data collection.
 - Some methods take relatively more time, whereas with others the data can be collected in a comparatively shorter duration.
 - The time at the disposal of the researcher, thus, affects the selection of the method by which the data are to be collected.

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- Precision required:
 - Precision required is yet another important factor to be considered at the time of selecting the method of collection of data.

Sampling Analysis


- Sampling analysis the most ticklish question is:
 - What should be the size of the sample or how large or small should be 'n'?
 - If the sample size ('n') is too small, it may not serve to achieve the objectives and if it is too large, we may incur huge cost and waste resources.

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- As a general rule, one can say that the sample must be of an optimum size i.e., it should neither be excessively large nor too small.
- Technically, the sample size should be large enough to give a confidence interval of desired width and as such the size of the sample must be chosen by some logical process before sample is taken from the universe.

Size of the sample should be determined by a researcher keeping in view the following points:

- Nature of universe:
- Universe may be either homogenous or heterogeneous in nature. If the items of the universe are homogenous, a small sample can serve the purpose. But if the items are heterogeneous, a large sample would be required. Technically, this can be termed as the dispersion factor.

- Number of classes proposed:
- If many class-groups (groups and sub-groups) are to be formed, a large sample would be required because a small sample might not be able to give a reasonable number of items in each class-group.
- Nature of study:
- If items are to be intensively and continuously studied, the sample should be small. For a general survey the size of the sample should be large, but a small sample is considered appropriate in technical surveys.

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- Type of sampling:
 - Sampling technique plays an important part in determining the size of the sample. A small random sample is apt to be much superior to a larger but badly selected sample.
 - Standard of accuracy and acceptable confidence level:
 - If the standard of accuracy or the level of precision is to be kept high, we shall require relatively larger sample. For doubling the accuracy for a fixed significance level, the sample size has to be increased fourfold.

- Availability of finance:
- In practice, size of the sample depends upon the amount of money available for the study purposes. This factor should be kept in view while determining the size of sample for large samples result in increasing the cost of sampling estimates.
- Other considerations:
- Nature of units, size of the population, size of questionnaire, availability of trained investigators, the conditions under which the sample is being conducted, the time available for completion of the study are a few other considerations to which a researcher must pay attention while selecting the size of the sample.

- ***Sampling errors are the random variations in the sample estimates around the true population parameters.***

- **Features of good sampling**

- • Sample design must result in a truly representative sample.
- • Sample design must be such which results in a small sampling error.
- • Sample design must be viable in the context of funds available for the research study.
- • Sample design must be such so that systematic bias can be controlled in a better way.
- • Sample should be such that the results of the sample study can be applied, in general, for the universe with a reasonable level of confidence.

Tools & Techniques of Data Analysis and Report Presentation

- **ANALYSIS OF DATA**

- Data analysis embraces a whole range of activities of both the qualitative and quantitative type.
- It is usual tendency in behavioral research that much use of quantitative analysis is made and statistical methods and techniques are employed.
- Statistical methods and techniques have got a special position in research because they provide answers to the problems.
- Kaul defines data analysis as, " Studying the organized material in order to discover inherent facts. The data are studied from as many angles as possible to explore the new facts."

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- The following are the main purposes of data analysis:
- (i) Description:
 - It involves a set of activities that are as essential first step in the development of most fields.
 - A researcher must be able to identify a topic about which much was not known; he must be able to convince others about its importance and must be able to collect data.
- (ii) Construction of Measurement Scale:
 - The researcher should construct a measurement scale.
 - All numbers generated by measuring instruments can be placed into one of four categories:

- (a) Nominal: The number serves as nothing more than labels. For example, no 1 was not less than No. 2. Similarly, No. 2 was neither more than no 1 and nor less than no 3.
- (b) Ordinal: Such numbers are used to designate an ordering along some dimensions such as from less to more, from small to large, from sooner to later.
- (c) Interval: The interval provides more précised information than ordinal one. By this type of measurement, the researcher can make exact and meaningful decisions. For example if A, B and C are of 150 cm, 145cm and 140 cm height, the researcher can say that A is 5 cm taller than B and B is 5 cm taller than C.
- (d) Ratio Scale: It has two unique characteristics. The intervals between points can be demonstrated to be precisely the same and the scale has a conceptually meaningful zero point.

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- (iii) Generating empirical relationships:
- Another purpose of analysis of data is identification of regularities and relationships among data.
- The researcher has no clear idea about the relationship which will be found from the collected data.
- If the data were available in details it will be easier to determine the relationship.
- The researcher can develop theories if he is able to recognize pattern and order of data.
- The pattern may be showing association among variables, which may be done by calculating correlation among variables or showing order, precedence or priority.
- The derivation of empirical laws may be made in the form of simple equations relating one interval or ratio scaled variable to a few others through graph methods.

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- (iv) Explanation and prediction:
- Generally knowledge and research are equated with the identification of causal relationships and all research activities are directed to it.
- But in many fields the research has not been developed to the level where causal explanation is possible or valid predictions can be made.
- In such a situation explanation and prediction is construct as enabling the values of one set of variables to be derived given the values of another.

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- **Functions: The following are the main functions of data analysis:**

- (i) The researcher should analyze the available data for examining the statement of the problem.
- (ii) The researcher should analyze the available data for examining each hypothesis of the problem.
- (iii) The researcher should study the original records of the data before data analysis.
- (iv) The researcher should analyze the data for thinking about the research problem in lay man's term.
- (v) The researcher should analyze the data by attacking it through statistical calculations.
- (vi) The researcher should think in terms of significant tables that the available data permits for the analysis of data.

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- There are two main methods of Data Analysis:
- Qualitative Analysis.
- This approach mainly answers questions such as 'why,' 'what' or 'how.'
- Quantitative Analysis.
- Generally, this analysis is measured in terms of numbers.
- Text analysis.
- Statistical analysis.
- Diagnostic analysis.
- Predictive analysis.
- Prescriptive Analysis.

Tools of Data Analysis

- **Top 10 Data Analytics tools**
- R Programming.
- Tableau Public
- SAS
- Apache Spark.
- Excel.
- Rapid Miner
- KNIME.
- Qlik View.

1. R Programming

- R is the leading analytics tool in the industry and widely used for statistics and data modeling.
- It can easily manipulate your data and present in different ways.
- It has exceeded SAS in many ways like capacity of data, performance and outcome.
- R compiles and runs on a wide variety of platforms viz -UNIX, Windows and MacOS.
- It has 11,556 packages and allows you to browse the packages by categories.
- R also provides tools to automatically install all packages as per user requirement, which can also be well assembled with Big data.

2. Tableau Public:

- Tableau Public is a free software that connects any data source be it corporate Data Warehouse, Microsoft Excel or web-based data, and creates data visualizations, maps, dashboards etc. with real-time updates presenting on web.
- They can also be shared through social media or with the client.
- It allows the access to download the file in different formats.
- If you want to see the power of tableau, then we must have very good data source.
- Tableau's Big Data capabilities makes them important and one can analyze and visualize data better than any other data visualization software in the market.

3. Python

- Python is an object-oriented scripting language which is easy to read, write, maintain and is a free open source tool.
- It was developed by Guido van Rossum in late 1980's which supports both functional and structured programming methods.
- Python is easy to learn as it is very similar to JavaScript, Ruby, and PHP.
- Also, Python has very good machine learning libraries viz. Scikitlearn, Theano, Tensorflow and Keras.
- Another important feature of Python is that it can be assembled on any platform like SQL server, a MongoDB database or JSON.
- Python can also handle text data very well.

4. SAS

- Sas is a programming environment and language for data manipulation and a leader in analytics, developed by the SAS Institute in 1966 and further developed in 1980's and 1990's.
- SAS is easily accessible, manageable and can analyze data from any sources.
- SAS introduced a large set of products in 2011 for customer intelligence and numerous SAS modules for web, social media and marketing analytics that is widely used for profiling customers and prospects.
- It can also predict their behaviors, manage, and optimize communications.

5. Apache Spark

- The University of California, Berkeley's AMP Lab, developed Apache in 2009.
- Apache Spark is a fast large-scale data processing engine and executes applications in Hadoop clusters 100 times faster in memory and 10 times faster on disk.
- Spark is built on data science and its concept makes data science effortless.
- Spark is also popular for data pipelines and machine learning models development.
- Spark also includes a library – MLlib, that provides a progressive set of machine algorithms for repetitive data science techniques like Classification, Regression, Collaborative Filtering, Clustering, etc.

6. Excel

- Excel is a basic, popular and widely used analytical tool almost in all industries.
- Whether you are an expert in Sas, R or Tableau, you will still need to use Excel.
- Excel becomes important when there is a requirement of analytics on the client's internal data.
- It analyzes the complex task that summarizes the data with a preview of pivot tables that helps in filtering the data as per client requirement.
- Excel has the advance business analytics option which helps in modeling capabilities which have prebuilt options like automatic relationship detection, a creation of DAX measures and time grouping.

7. Rapid Miner:

- Rapid Miner is a powerful integrated data science platform developed by the same company that performs predictive analysis and other advanced analytics like data mining, text analytics, machine learning and visual analytics without any programming.
- Rapid Miner can incorporate with any data source types, including Access, Excel, Microsoft SQL, Tera data, Oracle, Sybase, IBM DB2, Ingres, MySQL, IBM SPSS, Dbase etc.
- The tool is very powerful that can generate analytics based on real-life data transformation settings, i.e. you can control the formats and data sets for predictive analysis.

8. KNIME

- KNIME Developed in January 2004 by a team of software engineers at University of Konstanz.
- KNIME is leading open source, reporting, and integrated analytics tools that allow you to analyze and model the data through visual programming,
- it integrates various components for data mining and machine learning via its modular data-pipelining concept.

9. Qlik View


- Qlik View has many unique features like patented technology and has in-memory data processing, which executes the result very fast to the end users and stores the data in the report itself.
- Data association in Qlik View is automatically maintained and can be compressed to almost 10% from its original size.
- Data relationship is visualized using colors – a specific color is given to related data and another color for non-related data.

10. Splunk:

- Splunk is a tool that analyzes and search the machine-generated data.
- Splunk pulls all text-based log data and provides a simple way to search through it, a user can pull in all kind of data, and perform all sort of interesting statistical analysis on it, and present it in different formats.

Report Presentation

- Research report is considered a major component of the research study for the research task remains incomplete till the report has been presented and/or written.
- As a matter of fact even the most brilliant hypothesis, highly well designed and conducted research study, and the most striking generalizations and findings are of little value unless they are effectively communicated to others.
- The purpose of research is not well served unless the findings are made known to others.
- Research results must invariably enter the general store of knowledge.

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- All this explains the significance of writing research report.
 - There are people who do not consider writing of report as an integral part of the research process. But the general opinion is in favor of treating the presentation of research results or the writing of report as part and parcel of the research project.
 - Writing of report is the last step in a research study and requires a set of skills somewhat different from those called for in respect of the earlier stages of research.
 - This task should be accomplished by the researcher with utmost care; he may seek the assistance and guidance of experts for the purpose.

UNIT III

DATA COLLECTION

TOPICS

- Census Method - Advantages and Disadvantages
- Sampling - Sampling Process, Methods of Sampling - Probability and Non-probability Sampling, Determination of Sample Size, Errors in Sampling
- Methods of Collecting Primary Data – Survey Method, Observation Method and Experimental Method
- Tools for Data Collection – Questionnaire (with brief discussion on Scales of Measurement – Nominal, Ordinal, Interval and Ratio), Schedule and Checklist, Preparation of Questionnaire for Attitude and Measurement using Likert Scale.

Census Method - Advantages and Disadvantages

- All items in any field of inquiry constitute a 'Universe' or 'Population.'
- A complete enumeration of all items in the 'population' is known as a census inquiry.

Advantages of Census

- It can be presumed that in such an inquiry, when all items are covered, no element of chance is left and highest accuracy is obtained.
- Employment opportunities are created temporarily till the census work is completed.
- Data collected through this method will be reliable.
- Unbiased outcome can be obtained by using data collected through survey method.

Disadvantages of Census Method

- Even the slightest element of bias in such an inquiry will get larger and larger as the number of observation increases.
- Moreover, there is no way of checking the element of bias or its extent except through a resurvey or use of sample checks.
- This type of inquiry involves a great deal of time, money and energy. Therefore, when the field of inquiry is large, this method becomes difficult to adopt because of the resources involved.
- At times, this method is practically beyond the reach of ordinary researchers.

- Government is the only institution which can get the complete enumeration carried out. Even the government adopts this in very rare cases such as population census conducted once in a decade.
- Many a time it is not possible to examine every item in the population.
- When the universe is a small one, it is no use resorting to a survey.
- It involves huge time and cost
- This method is practically beyond the reach of ordinary researchers

Sampling

- Many a time it is not possible to examine every item in the population, and sometimes it is possible to obtain sufficiently accurate results by studying only a part of total population.
- The respondents selected should be as representative of the total population as possible in order to produce a miniature cross-section.
- The selected respondents constitute what is technically called a 'sample' and the selection process is called '**sampling technique.**'
- **Sampling is the process of obtaining information about an entire population by examining only a part of it.**

Sampling Process,

- The methodology used to select sample from a larger population is known as sampling process.
- The five steps in sampling process are:
 - Identify the population.
 - Specify a sampling frame.
 - Specify a sampling method.
 - Determine the sample size.
 - Implement the plan.

Methods of Sampling - Probability and Non-probability Sampling,

- Methods of Sampling
- Probability sampling
- Non-probability Sampling
- **Probability sampling:**
- Probability samples are those based on simple random sampling, systematic sampling, stratified sampling, cluster/area sampling
- **Non Probability Sampling:**
- Non-probability samples are those based on convenience sampling, judgment sampling and quota sampling techniques.

METHODS OF SAMPLING ARE

- Probability Sampling
 - — Simple Random Sampling
 - — Systematic Sampling
 - — Stratified Random Sampling
 - — Proportionate Sampling
 - — Disproportionate Sampling
 - — Cluster Sampling
 - — Multi Stage Sampling
 - — Area Sampling
 - — Sequential Sampling
- Non Probability Sampling
 - — Accidental Sampling
 - — Quota Sampling
 - — Purposive Sampling
 - — Snow ball Sampling

- SIMPLE RANDOM SAMPLING
- It is also known as chance sampling or probability sampling where each and every item in the population has an equal chance of inclusion in the sample. This sampling technique gives each element an equal and Independent chance or Probability of selection.
- Ex: In a population of 200 students in a college under commerce faculty, each student theoretically has $1/200$ th chance of being selected. This method can be used for population of any size with homogeneous character.

- Three methods of Simple Random sampling can be used to draw sample in this approach.
- **I LOTTERY METHOD**
- Each member of the population is assigned a unique number
- — Each member is placed on a similar card or chip
- — Cards or Chips are placed in a bowl and mixed
- — A blind folded person is asked to select
-
- **II SAMPLE WITH RANDOM NUMBER**
- The use of the table of random number involves the following steps
- — Each member of the population is assigned a separate number
- — Table of random member is entered at some random point with a hind mark, at any page of the table.
- — Start selection and stop after the desired size is selected.

- **III USE OF COMPUTERS**

- Various readymade packages are available in the computers to pick the units randomly giving equal chance to all the items of given population. The package available are SPSS and XL such others.

- **SYSTEMATIC SAMPLING / FIXED INTERVAL SAMPLING**

- In systematic sampling the first unit is selected randomly and the remaining units of the sample are selected at fixed intervals.
- EX.
- 1. Every 15th Name on a list
- 2. Every 10th house on the side of a street and this method is an Improved over a simple random sampling.
- 3. It is easy and less costly method
- 4. The disadvantage is that if any hidden periodicity in the population, this method will prove to be an inefficient one.



- **STRATIFIED RANDOM SAMPLING**

- In Stratified random Sampling heterogeneous population is first stratified or grouped and then in each stratum (group), elements are drawn to constitute a sample.
- Points to be Remembered
- 1. If Population is heterogeneous stratified sample is used but not for homogeneous population.
- 2. Stratify or Group, the population into a number of sub-groups or strata.
- 3. Each Stratum (group) contains a Number of element/items/members/units.
- 4. Apply the principle of simple random technique to pick up items from each stratum (singular for group).
- 5. All the units drawn from each stratum is called sample size.
- 6. Ex. For stratified sampling
- 7. The population is sub-divided or grouped on certain bases as race, religion, region, caste, income, age, weight, height, urban, rural, gender, qualification and so on.
- 8. After grouping apply the Principles of Random sampling and units are drawn to constitute the sample size.

- **TYPES OF STRATIFIED SAMPLING**
- **1. Proportionate Stratified Sampling Ex.**
- 60% Population is female and 40% is male so Sample is 60:40 the sample are drawn from each stratum in the same proportion.
- **2. Disproportionate Stratified Sampling**
- A Stratified Sample in which the Number of elements drawn from the various strata is Independent of the Size of Strata is called disproportionated Stratified sample

- **CLUSTER SAMPLING**
- Cluster Sampling Involves grouping the population into sub- groups (clusters) and then selecting the clusters randomly to constitute a sample.
- Ex.
- A Departmental store wishes to sample its credit card holders. It has issued 15,000 cards to its customers. It need a sample size of 450 customers out of 15000 card holders. For this purpose, the store groups 150 card holders each constituting 100 groups or clusters Now the departmental store randomly picks up three groups or cluster that means 450 sample size is picked up from 100 clusters. The three clusters here will provide 450 card holders because each clusters contains 150 card holders. ($15000 / 100$ each group 150 = 3 groups selected.

- **AREA SAMPLING**
- Under Area Sampling we first divide the total Area with a number of small non overlapping areas generally called geographical cluster.
- Then a number of these smaller areas are randomly selected and all units in these small area are included in the sample.

• MULTI – STAGE SAMPLING

- Multi – stage sampling the entire geographical area is divided into different stages and in each stage a few units are picked up to constitute a sample.
- Ex: Stages
- First stage , Second stage , Third stage, Fourth stage , Fifth stage , Sixth stage
- Units
- country , states, districts ,mandals/ taluks, blocks , villages
- Ex.
- To introduce a new agricultural scheme in 1000 villages in a state with 30000 village in order to identify sample village we may apply three stage sampling
- First stage is divided in to number of districts can be drawn and few randomly sample districts can be drawn.
- Second stage these few districts are divided in to mandals and few mandals are selected by following the scientific statistical sampling techniques.
- Third stage these few mandals will be sub divided again in to villages so to make finally the stage sampling units that is village.

- **SEQUENTIAL SAMPLING**
- Under Sequential sampling the samples are drawn as and when work progresses. But sample size is not fixed in advance.
- In Sequential Sampling Research can go on taking samples one after another as long as one desires to do so.
- ▪ Sample size is not fixed or determined in advance
- ▪ Sample size increases as work progresses.
- ▪ It is used for statistical quality control

- **NON PROBABILITY SAMPLING**
- Non Probability Sampling does not adopt the theory of Probability and it does not give a representative sample of the Population.
- **Convenience Sampling or Accidental Sampling**
- It means selecting sample units in a just “hit and miss” fashion, Ex Interviewing people whom we happen to meet. This sampling also means selecting whatever sampling unit are conveniently available. Ex. A Teacher may select students in his class. This method is also known as accidental sampling because the respondents whom the researcher meets accidentally are included in the sample

- **Purposive or Judgment Sampling**
- This method means deliberate selection of sample units that conform to some pre-determined criteria. This is also known as Judgment sampling. This involves selection of cases which we judge as the most appropriate one for the given study. It is based on the Judgment of the researcher or some expert. It does not aim at securing a cross section of a population.

- **Quota Sampling**
- This is a form of convenient sampling involving selection of quota group of accessible sampling units by traits such as Sex, age, social class etc.
- Quota sampling is therefore method of stratified sampling in which selection within strata is non-random. The quota are grouped by variables such as sex, age, social class and religion in specific proportions, each investigatory may be given as assignment of quota.

- **Snow Ball Sampling**
- This sampling technique may be used in sociometric studies. A sample of a special population by using an initial set of its members as informants.
- For example If a researcher want to study the problem faced by Indian through some source like Indian Embassy. Then he can ask each one and continue this procedure until he gets an exhaustive list from which he can draw a sample or make a census survey.

Determination of Sample Size,

- Size of sample:
- This refers to the number of items to be selected from the universe to constitute a sample.
- This a major problem before a researcher.
- The size of sample should neither be excessively large, nor too small.
- It should be optimum.

- An optimum sample is one which fulfils the requirements of efficiency, representativeness, reliability and flexibility. While deciding the size of sample, researcher must determine the desired precision as also an acceptable confidence level for the estimate.
- The size of population variance needs to be considered as in case of larger variance usually a bigger sample is needed.

- The size of population must be kept in view for this also limits the sample size.
- The parameters of interest in a research study must be kept in view, while deciding the size of the sample.
- Costs and time also dictate the size of sample that we can draw.
- Budgetary constraint must invariably be taken into consideration when we decide the sample size.

Errors in Sampling

- Sampling error: Sample surveys do imply the study of a small portion of the population and as such there would naturally be a certain amount of inaccuracy in the information collected.
- This inaccuracy may be termed as sampling error or error variance.
- In other words, sampling errors are those errors which arise on account of sampling and they generally happen to be random variations (in case of random sampling) in the sample estimates around the true population values.

- Sampling error = Frame error + Chance error + Response error (If we add measurement error or the non-sampling error to sampling error, we get total error).
- The magnitude of the sampling error depends upon the nature of the universe; the more homogeneous the universe, the smaller the sampling error.
- Sampling error is inversely related to the size of the sample i.e., sampling error decreases as the sample size increases and vice-versa.

- A measure of the random sampling error can be calculated for a given sample design and size and this measure is often called the precision of the sampling plan.
- Sampling error is usually worked out as the product of the critical value at a certain level of significance and the standard error.
- As opposed to sampling errors, we may have non-sampling errors which may creep in during the process of collecting actual information and such errors occur in all surveys whether census or sample.
- We have no way to measure non-sampling errors.

Methods of Collecting Primary Data – Survey Method, Observation Method and Experimental Method

- Methods of Collecting Primary Data –
- Survey Method
- Observation Method
- Experimental Method

Survey Method

- The Survey method is the technique of gathering data by asking questions to people who are thought to have desired information.
- A formal list of questionnaire is prepared.
- Generally a non disguised approach is used.
- The respondents are asked questions on their demographic interest opinion.

Advantages of Survey Method

- As compared to other methods (direct observation, experimentation) survey yield a broader range of information.
- Surveys are effective to produce information on socio-economic characteristics, attitudes, opinions, motives etc and to gather information for planning product features, advertising media, sales promotion, channels of distribution and other marketing variables.

- Questioning is usually faster and cheaper than Observation.
- Questions are simple to administer.
- Data is reliable
- The variability of results is reduced.
- It is relatively simple to analyze, quote and interrelate the data obtained by survey method

Disadvantages of Survey Method

- Unwillingness of respondents to provide information.
- Inability of the respondents to provide information-
- This may be due to
 - **Lack of knowledge**
 - **Lapse of memory**
 - **Inability to identify their motives and provide “reasons why?” for their actions**
- Human Biases of the respondents are there, for eg: “Ego”

Observation Method

- The observation method is the most commonly used method specially in studies relating to behavioral sciences.
- Under the observation method, the information is sought by way of investigator's own direct observation without asking from the respondent.

- **Advantages of Observation Method**
- The main advantage of this method is that subjective bias is eliminated, if observation is done accurately.
- Secondly, the information obtained under this method relates to what is currently happening; it is not complicated by either the past behavior or future intentions or attitudes.

- Thirdly, this method is independent of respondents' willingness to respond and as such is relatively less demanding of active cooperation on the part of respondents as happens to be the case in the interview or the questionnaire method.
- This method is particularly suitable in studies which deal with subjects (i.e., respondents) who are not capable of giving verbal reports of their feelings for one reason or the other.



- Limitations of observation method.
- Firstly, it is an expensive method.
- Secondly, the information provided by this method is very limited.
- Thirdly, sometimes unforeseen factors may interfere with the observational task.
- At times, the fact that some people are rarely accessible to direct observation creates obstacle for this method to collect data effectively.



- While using this method, the researcher should keep in mind things like:
- What should be observed?
- How the observations should be recorded? Or how the accuracy of observation can be ensured?

- **Structured Observation**

- In case the observation is characterized by a careful definition of the units to be observed,
- The style of recording the observed information, standardised conditions of observation and the selection of pertinent data of observation, then the observation is called as structured observation.
- But when observation is to take place without these characteristics to be thought of in advance, the same is termed as unstructured observation.

- Structured observation is considered appropriate in descriptive studies, whereas in an exploratory study the observational procedure is most likely to be relatively unstructured.
- We often talk about participant and non-participant types of observation in the context of studies, particularly of social sciences.
- This distinction depends upon the observer's sharing or not sharing the life of the group he is observing.
- If the observer observes by making himself, more or less, a member of the group he is observing so that he can experience what the members of the group experience, the observation is called as the participant observation.

- But when the observer observes as a detached emissary without any attempt on his part to experience through participation what others feel, the observation of this type is often termed as non-participant observation.
- (When the observer is observing in such a manner that his presence may be unknown to the people he is observing, such an observation is described as disguised observation.)
- There are several merits of the participant type of observation: The researcher is enabled to record the natural behavior of the group.

- The researcher can even gather information which could not easily be obtained if he observes in a disinterested fashion.
- The researcher can even verify the truth of statements made by informants in the context of a questionnaire or a schedule. But there are also certain demerits of this type of observation viz., the observer may lose the objectivity to the extent he participates emotionally; the problem of observation-control is not solved; and it may narrow-down the researcher's range of experience.



- **Controlled and uncontrolled observation**
- Controlled and uncontrolled observation takes place in the natural setting, it may be termed as uncontrolled observation, but when observation takes place according to definite pre-arranged plans, involving experimental procedure, the same is then termed controlled observation.
- In non-controlled observation, no attempt is made to use precision instruments. The major aim of this type of observation is to get a spontaneous picture of life and persons.

- It has a tendency to supply naturalness and completeness of behavior, allowing sufficient time for observing it. But in controlled observation,
- we use mechanical (or precision) instruments as aids to accuracy and standardisation.
- Such observation has a tendency to supply formalised data upon which generalisations can be built with some degree of assurance.

- The main pitfall of non-controlled observation is that of subjective interpretation.
- There is also the danger of having the feeling that we know more about the observed phenomena than we actually do.
- Generally, controlled observation takes place in various experiments that are carried out in a laboratory or under controlled conditions, whereas uncontrolled observation is resorted to in case of exploratory researches.

Experimental Method

- Experiments carried out for the purpose of collecting data to be analysed and studied are carried out in the laboratory, in the field or using computer numerical models. It also can be a combination of two or three of the said techniques.

- **Experiments** are carried out for researchers to **collect data**. These **data** then can be analysed or processed to produce meaningful conclusions.
- Types of Experiment
- Laboratory experiment
- Field experiment
- Computer Numerical model experiment

Tools for Data Collection – Questionnaire (with brief discussion on Scales of Measurement – Nominal, Ordinal, Interval and Ratio),

- **QUESTIONNAIRE**
- This method of data collection is quite popular, particularly in case of big enquiries.
- It is being adopted by private individuals, research workers, private and public organisations and even by governments.

- In this method a questionnaire is sent (usually by post) to the persons concerned with a request to answer the questions and return the questionnaire.
- A questionnaire consists of a number of questions printed or typed in a definite order on a form or set of forms.
- The questionnaire is mailed to respondents who are expected to read and understand the questions and write down the reply in the space meant for the purpose in the questionnaire itself.

- The respondents have to answer the questions on their own.
- The method of collecting data by mailing the questionnaires to respondents is most extensively employed in various economic and business surveys.

ESSENTIALS OF A GOOD QUESTIONNAIRE:

- 1) Questionnaire should be comparatively short and simple i.e., the size of the questionnaire should be kept to the minimum.
- 2) Questions should proceed in logical sequence moving from easy to more difficult questions. Personal and intimate questions should be left to the end.
- 3) Technical terms and vague expressions capable of different interpretations should be avoided in a questionnaire.
- 4) Questions may be dichotomous (yes or no answers), multiple choice (alternative answers listed) or open-ended. The latter type of questions are often difficult to analyse and hence should be avoided in a questionnaire to the extent possible.

- 5) There should be some control questions in the questionnaire which indicate the reliability of the respondent. For instance, a question designed to determine the consumption of particular material may be asked first in terms of financial expenditure and later in terms of weight. The control questions, thus, introduce a cross-check to see whether the information collected is correct or not.
- 6) Questions affecting the sentiments of respondents should be avoided.
- 7) Adequate space for answers should be provided in the questionnaire to help editing and tabulation.

- 8) There should always be provision for indications of uncertainty, e.g., “do not know,” “no preference” and so on.
- 9) Brief directions with regard to filling up the questionnaire should invariably be given in the questionnaire itself.
- 10) Finally, the physical appearance of the questionnaire affects the cooperation the researcher receives from the recipients and as such an attractive looking questionnaire, particularly in mail surveys, is a plus point for enlisting cooperation. The quality of the paper, along with its colour, must be good so that it may attract the attention of recipients.

Schedule and Check list

- SCHEDULE METHOD
- This schedule method of data collection is very much like the collection of data through questionnaire, with little difference which lies in the fact that schedules (proforma containing a set of questions) are being filled in by the enumerators who are specially appointed for the purpose.

- These enumerators along with schedules, go to respondents, put to them the questions from the proforma in the order the questions are listed and record the replies in the space meant for the same in the proforma.
- In certain situations, schedules may be handed over to respondents and enumerators may help them in recording their answers to various questions in the said schedules. Enumerators explain the aims and objects of the investigation and also remove the difficulties which any respondent may feel in understanding the implications of a particular question or the definition or concept of difficult terms.

- This method requires the selection of enumerators for filling up schedules or assisting respondents to fill up schedules and as such enumerators should be very carefully selected.
- The enumerators should be trained to perform their job well and the nature and scope of the investigation should be explained to them thoroughly so that they may well understand the implications of different questions put in the schedule.

- Enumerators should be intelligent and must possess the capacity of cross examination in order to find out the truth. Above all, they should be honest, sincere, hardworking and should have patience and perseverance.
- This method of data collection is very useful in extensive enquiries and can lead to fairly reliable results.
- It is, however, very expensive and is usually adopted in investigations conducted by governmental agencies or by some big organisations.
- Population census all over the world is conducted through this method

Preparation of Questionnaire for Attitude and Measurement using Likert Scale.

- **ATTITUDE MEASUREMENT TECHNIQUES – MOTIVATIONAL RESEARCH TECHNIQUES**
- Attitude – A relatively enduring organisation of beliefs, feelings and behavioral tendencies toward socially significant objects, groups, events or symbols. It's a Predisposition to respond to a particular product or service (marketing or research)

- ***Attitude has 3 Components:***
- 1. Affective Component: It displays persons **emotions or feeling about an object**
- E.g.: I don't like my manager
- 2. Behavioral Component: It tells how we **react to the attitude that we have**
- E.g.: I want transfer to another department
- 3. Cognitive Component: It refers to persons **belief or opinion about that object**
- E.g.: I believe my boss plays favorites

- **Techniques of Measuring Attitude**
- 1. Structured – Non-disguised Technique
- 2. Unstructured – Disguised Technique
- 3. Unstructured – Non-disguised Technique
- 4. Structured – Disguised Technique
- ❖ *A method is **structured** when there is formal structure or procedure for the questioning.*
- ❖ *It is **disguised** when the respondent does not know the purpose of the interview.*

- **I. STRUCTURED – NON-DISGUISED TECHNIQUE**
- This approach employs a standardized questionnaire to collect data on beliefs, feelings, and attitude from the respondent.
- **Scaling Technique** – Process of assigning numbers to objects or observations in accordance with specific rules to represent quantities or qualities of attributes.
- We do not measure specific objects but we measure the attributes or features that define them.
- Techniques used under this method are
- Ranking Scale (Paired Comparison method, Rank order)
- Rating Scale (Graphic rating, Likert Scale, Semantic Differential Scale, Staple Scale) are used.

- **Single Question Method:** E.g.: (I think it is a good product or I think it is a poor product).
- **Multiple Questions Method:** E.g.: (Numbers of questionnaires asked about the attitude) and Physiological Tests (laboratory tests such as galvanic skin response, eye movement etc. measure attitudes of people towards products) are carried out under this approval.

Likert scale

- A **Likert scale** is a unidimensional **scale** that researchers use to collect respondents' attitudes and opinions. Researchers often use this psychometric **scale** to understand the views and perspectives towards a brand, product, or target market.
- **Likert Scale** is a type of rating **scale** used to measure attitudes or opinions. With this **scale**, respondents are asked to rate items on a level of agreement. For **example**: Strongly agree. Agree.
- **Example of a Likert scale:**
- For example, to collect product feedback, the researcher uses a Likert Scale question in the form of a dichotomous option question. He/ she frames the question as “The product was a good purchase” with the options listed as agree or disagree. The other way to frame this question is, “Please state your satisfaction level with the products,” and the options ranging from very dissatisfied to very satisfied.

- When responding to an item on the Likert Scale, the user responds based explicitly on their agreement or disagreement level.
- These scales allow determining the level of agreement or disagreement of the respondents.
- **Likert scale assumes that the strength and intensity of the experience are linear.**
Therefore it goes from a complete agreement to a complete disagreement, assuming that attitudes can be measured.

• **II. NON-STRUCTURED – DISGUISED TECHNIQUE**

- Highly unstructured and indirect form of questioning
- In this approach, the purpose of study is not discussed to respondents unlike above cases.
- A list of unstructured questions is used to collect data on consumer's attitudes.
- This art of using disguised and unstructured method is referred to as “Projective Techniques”.

- The projective techniques include several tests given to the respondents.
- They may be asked to give their comments on cartoons, pictures, stories etc.
- The stimuli used for this purpose are capable of answering the respondent to a variety of reactions.
- A number of Projective Techniques, are available to the market researchers for the purpose of analysing “why” part of consumer behavior.
- It is best suited when the respondent is not sure of his feelings and hence cannot express his answers directly or resists to reveal them.

- a) Word Association Test (W.A.I): The interviewer calls a series of listed words one by one and the respondents quickly replies the first word that enters his mind.
- The underlying assumption is that by “free associating” with certain stimuli (words) the responses are timed so that those answers which the respondent “response out” are identified.

- b) Sentence Completion: Sentence completion test is similar to word association test except that the respondent is required to complete an unfinished sentence.
- E.g.: “I do not use shampoos because....”
- “Coffee that is made quickly.....”
- c) Story Completion: In this technique the respondent is asked to complete a story, end of which is missing. This enables a researcher to find out the almost exact version of images and feelings of people towards a company’s product. This helps in finalizing the advertising and promotional themes for the product in question.

- d) Research of Ink-blot Tests (or Research Tests):
- Motivation Research employs this famous test.
- These tests are not in much use in marketing research.
- The research test expresses in a classic way the rationale behind all projective tests, that is, in filling the missing parts of a vague and incomplete stimulus, the respondent projects himself and his personality into the picture.
- A lot of ink is put on the piece of paper and reference is made of company, product, and the respondent is asked to give his view points after interpreting what he sees in the blot before him.
- The respondent say, “ugly packaging of the product”, or “excellent performance of the product”.
- This response will help the seller to finalize his marketing strategies.

- e) Psychographic Technique: This includes galvanic skin response, eye movement and eye blink test etc. which uses various Instruments with the physiological responses.
- f) Espionage Technique: There are two methods in this technique:
 - • Use of Hidden Recorders: Such as hidden tape recorders, cameras used to watch consumers as they make purchases or consume items.
 - • Rubbish Research: This is another method of espionage activity. Here, the researcher shifts through the garbage of individuals or groups and record pattern of consumption, waste, and brand preference.
- It gives most required estimates of consumption of cigarettes, medicines, liquor, and magazines etc.

- **III. NON-DISGUISED, NON – STRUCTURED TECHNIQUE**
- These techniques use a non-standardized questionnaire.
- The techniques are also called depth interview, qualitative interviews, unstructured interviews, or focused interviews.
- All these techniques are designed to gather information on various aspects of human behavior including the “why” component.

• **IV. DISGUISED, STRUCTURED TECHNIQUE**

- When we are to measure those attitudes which respondents might not readily and accurately express, we can use disguised structured techniques.
- The disguised structured questionnaire are easy to administer and code.
- Respondents are given questions which they are not likely to be able to answer accurately. In such circumstances they are compelled to 'guess at' the answers.
- The respondent's attitude on the subject is assumed to be revealed to the extent and direction in which these guessing errors are committed.

- **Uses of Motivation Research:**

- 1. Motivation Research leads to useful insights and provides inspiration to creative person in the advertising and packing world.
- 2. Knowledge and measurement of the true attitude of customers help in choosing the bestselling appeal for the product and the best way to represent the product in the sales talk, and in determining the appropriateness and weight age of various promotional methods.
- 3. Motivation Research can help in measuring changes in attitudes, thus advertising research.
- 4. Knowledge and measurement of attitudes provides us with an imaginative market segmentation tool and also enables estimating market potential of each additional segment.
- 5. Strategies to position the offer of the company in a particular market segment should be based on the findings of motivation research.

- **Limitations of Motivation Research:**
- 1. Cautions are required to be exercised not only in the application of these techniques but also the resultant data should be analyzed and interpreted according to the psychological theory.
- 2. Originally these techniques were developed to collect data from a single individual over a period of time. It is not free from draw backs while we apply these techniques to gather data from a number of individuals.
- 3. The designing and administering of these techniques need qualified and experimented researchers. Such personnel are not easily available.

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- Nominal scales
- This method is the crudest of measurement scales, classifies individuals, companies, products, brands or other entities into categories where no order is implied.
- Indeed it is often referred to as a categorical scale.
- It involves a simple count of the frequency of the cases assigned to the various categories, and if desired numbers can be nominally assigned to label each category.
- A nominal scale is a scale (of measurement) that uses labels to classify cases (measurements) into classes.

Sex	No of Students
Male	17
Female	14

Sex	No of students
Female	14
Male	17

- Ordinal scales
- Ordinal scales involve the ranking of individuals, attitudes or items along the continuum of the characteristic being scaled
- For example, if a researcher asked people to rank 5 brands of Cars in order of preference he/she might obtain responses like those in the below table

- Order of preference Brand
- 1 TATA
- 2 Mahindra
- 3 Honda
- 4 Suzuki
- 5 KIA

- Interval scales: It is only with an interval scaled data that researchers can justify the use of the arithmetic mean as the measure of average.
- The interval or cardinal scale has equal units of measurement, thus making it possible to interpret not only the order of scale scores but also the distance between them.
- However, it must be recognized that the zero point on an interval scale is arbitrary and is not a true zero.
- This of course has implications for the type of data manipulation and analysis we can carry out on data collected in this form.

- It is possible to add or subtract a constant to all of the scale values without affecting the form of the scale but one cannot multiply or divide the values.
- It can be said that two respondents with scale positions 1 and 2 are as far apart as two respondents with scale positions 4 and 5, but not that a person with score 10 feels twice as strongly as one with score 5.
- Temperature is interval scaled, being measured either in Centigrade or Fahrenheit.
- We cannot speak of 50°F being twice as hot as 25°F since the corresponding temperatures on the centigrade scale, 10°C and -3.9°C , are not in the ratio 2:1.

- Ratio scales
- The highest level of measurement is a ratio scale.
- This has the properties of an interval scale together with a fixed origin or zero point.
- Examples of variables which are ratio scaled include weights, lengths and times.
- Ratio scales permit the researcher to compare both differences in scores and the relative magnitude of scores.
- For instance the difference between 5 and 10 minutes is the same as that between 10 and 15 minutes, and 10 minutes is twice as long as 5 minutes.
- Given that sociological and management research seldom aspires beyond the interval level of measurement, it is not proposed that particular attention be given to this level of analysis.
- Suffice it to say that virtually all statistical operations can be performed on ratio scales.



UNIT III


E- Payments

Syllabus


- E-payment systems – An overview.
B to C payments, B to B payments.
Types of E- payment system –
- Credit card payment, debit cards, accumulating balance, online stored value payment systems, digital cash,
- Digital (electronic) wallets, agile wallet, smart cards and digital cheques.
Secure Electronic Transaction
- (SET) protocol


E-payment systems – An overview

- **Electronic Payment System:**
- Is means of making **payments** over an **electronic** network such as the Internet.
- **E-Cash: Electronic** financial transactions conducted in cyberspace via computer networks.

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- The emergence of e-commerce has created new financial needs that in many cases cannot be effectively fulfilled by the traditional payment systems.
 - The advent of the Electronic commerce has prompted the invention of several payment tools to facilitate the completion of business transactions over the Internet.

- There are different methods to pay electronically. Recognizing this, virtually all interested parties are exploring various types of electronic payment system and issues surrounding electronic payment system and digital currency.
- Broadly electronic payment systems can be classified into four categories:
 - Online Credit Card Payment System,
 - Online Electronic Cash System,
 - Electronic Cheque System and
 - Smart Cards based Electronic Payment System.

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- Each payment system has its advantages and disadvantages for the customers and merchants.
 - These payment systems have numbers of requirements: e.g. security, acceptability, convenience, cost, anonymity, control, and traceability.
 - Though Indian economy is basically cash driven, still India is not far behind in adopting E-payment services in retail and banking sector.

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- An e-commerce payment system facilitates the acceptance of electronic payment for online transactions.
 - Also known as a sample of Electronic Data Interchange (EDI),
 - e-commerce payment systems have become increasingly popular due to the widespread use of the internet-based shopping and banking.
 - E payment is a subset of an e-commerce transaction to include electronic payment for buying and selling goods or services offered through the Internet.

B to C payments

- The term business-to-consumer (B2C) refers to the process of selling products and services directly between a business and consumers who are the end-users of its products or services.

- B2C **payments** are generally a one-time **payment** for a product and it will usually be a smaller amount.
- B2C e-commerce is relatively simple: products are displayed on a website, consumer details are taken, and then **payment** is made on a secure checkout form with the consumers preferred **payment** type, such as a digital wallet.

B to B payments.

- B2B payments are **payments made between companies for goods or services.**

Types of E- payment systems

- Credit card payment
- Debit cards
- Digital cash
- Digital (electronic) wallets
- Agile wallet
- Smart cards
- Digital cheques

Credit card



Credit card

- A **credit card** is a payment card issued to users (cardholders) as a method of payment.
- It allows the cardholder to pay for goods and services based on the holder's promise to pay for them.

- The issuer of the card (usually a bank) creates a revolving account and grants a line of credit to the cardholder, from which the cardholder can borrow money for payment to a merchant or as a cash advance.
- It is being an ordinary piece of plastic, it - first of all the flexible tool of payment accepted in the majority of the countries of the world and if the balance of a map is paid from each month no percent are added on the buying, made so, in essence, the short-term credit is granted without the consumer paying any percent.

Advantages

1. Represents free application of funds, with known balance.
2. Is more convenient than cash.
3. Supplies the good file of the borrower.
4. Supplies a convenient method of payment for the buying made on the Internet and by phone.
5. Grants bonuses which then can be used.

Disadvantages


1. To cost it is much more than other forms of the credit, such as the arrangement or the personal loan if we do not pay in time.
2. Worsens credit rating, at an irregularity of payments.
3. Allows to create more promissory notes.

Smart Card



Smart card

- A **smart card** is a device that includes an embedded integrated circuit chip (ICC) that can be either a secure microcontroller or equivalent intelligence with internal memory or a memory chip alone.
- The **card** connects to a reader with direct physical contact or with a remote contactless radio frequency interface

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- Smart cards are made of plastic, generally PVC.
 - Smart cards can be either contact or contactless smart card. Smart cards can provide personal identification , authentication, data storage, and application processing.
 - Smart cards may provide strong security authentication for Single sign on (SSO) within large organizations.

Advantages

- It provides reduction in costs
- It has technical specification standards
- It gives security of information
- It has more organized information
- It has emergency information
- The process doesn't require paper
- One card can access multiple transactions
- It can do transactions off and on-line
- It is more convenient, since people don't have to carry cash or multiple cards
- It reduces fraud
- It has high memory capabilities
- It has the ability for on-site approval
- End-user only accessibility

Disadvantages

- Fees applied with the use of a card
- It gives liability issues if stolen or lost
- The accuracy of information is small
- Lack of technology to support users
- It is potential for too much data on one card if lost or stolen
- It is a potential area for computer hackers and computer viruses

Debit Card



Debit card

- A debit card is a plastic card that resembles credit card.
- Debit cards are directly linked to a cardholder's bank account.
- Whenever a card holder withdraws money from an ATM or uses the debit card for making payments, his/her account balance is automatically reduced.

Advantages

1. Debit card is much easier to get as compared to credit card.
2. One doesn't have to carry cash or cheque book or traveller's cheques and carry only debit card.
3. Debit cards are more willingly accepted than cheque, it happens more so when people are travelling because with debit cards the person who is taking it does not have to worry about bounced cheques and hence it is preferred over cheques.
4. With debit cards one knows that for how much limit one can purchase unlike credit cards where chances of overspending are higher.

Disadvantages

1. One needs to have enough money in his or her bank account to cover for the amount of purchase done.
2. One has less protection if the debit card is lost or stolen as compare to credit card.
3. Since money is debited instantly at the time of purchase, one has less protection if something goes wrong with the purchase because bank won't put money back into account if purchased items are not delivered, or don't work.

Digital Money



Digital Money

- Digital money or digital cash is a replacement for credit cards or cash, for online purchases, where privacy and personal safety are important.
- It can provide a secure and efficient system of money, it may also lead to an increase in a variety of crimes, including money laundering and fraud.
- Digital cash can take two forms:
 - online accounts or on smart card.
- An online account allows transactions on the Internet.
- A smart card can be thought of as an electronic purse people can carry with them.

Advantages

- Digital money is easy to use and secure
- The owner is the only person who can use the account
- People are addicted to a convenient technology
- Some kind of digital money will function like electronic checks
- Even paper checks are not going to be needed
- Once again, digital money is replacing wallets and purses full of credit cards
- Its main obstacle though to be successful is the number of people that are using it; not that much are considering it as an option yet
- While digital money is considered very convenient and easy to handle; paper money is becoming now very complicated to deal with it
- Being handicapped, naïve, or sophisticated person, you have the chance to use this card

Disadvantages

- When digital money is widely used; it could disturb the financial system.
- It can facilitate money laundering and fraud because some hackers might be able to steal the information and uses them for their benefits.
- Law enforcement suspects that it will be easy to trade drugs rather than smuggle them across borders.
- Consumers are not going to interact with their bank and its employees.
- Lack of relationship between the consumers and the business people

Digital wallet



Digital wallet

- A **digital wallet** refers to an electronic device that allows an individual to make E-C transactions.
- This can include purchasing items on-line with a computer or using a Smartphone to purchase something at a store.
- Increasingly, digital wallets are being made not just for basic financial transactions but to also authenticate the holder's credentials.
- For example, a digital-wallet could potentially verify the age of the buyer to the store while purchasing alcohol.
- It is useful to approach the term "digital wallet" not as a singular technology but as three major parts:
 1. The system (the electronic infrastructure)
 2. The application (the software that operates on top)
 3. The device (the individual portion).

Advantages

- **Lower Costs:** Employing the use of digital wallets removes the need for intermediaries, in a variety of forms
- **Competitive Advantage:** Digital wallet applications provide a more convenient transaction processing method for customers, giving businesses that employ this technology a competitive edge in the market.
- **Modern:** This opens up an entirely new aspect to payment methods in large markets, introducing many business opportunities and greater potential revenue.
- **Convenience:** Users are able to get through a purchase in mere seconds with a simple tap or scan of their mobile device.

Disadvantages

- **Investment is high:** It requires the initial development of the software as well as the continual maintenance, updates and fixes associated with it.
- **Support Technology:** The devices created at the moment will support the processing of digital wallet payments; thus, it is very limited because the technology is still new.
- **System Outages:** Information for digital wallets are stored on the cloud of business servers; therefore, the risk of a system malfunction or shut down is always present.
- **Security:** Companies must ensure that their customers' information is encrypted and well protected.

E-Cash

- An anonymous electronic cash system; equivalent to "cash" or "printed bank notes" except that it is transferred through networks with bits of information, in essence it is just another representation of monetary value; anonymity is preserved through public key cryptography, digital signatures, and blind signatures.
- E-Cash is used over the Internet, email, or personal computer to other workstations in the form of secured payments of "cash" that is virtually untraceable to the user. It is backed by real currency from real banks.

Agile Wallet

- Developed by CyberCash
- Allows customers to enter credit card and identifying information once, stored on a central server
- Information pops up in supported merchants' payment pages, allowing one-click payment

eWallet

- Developed by Launch pad Technologies
- Free wallet software that stores credit card and personal information on users' computer, not on a central server; info is dragged into payment form from eWallet
- Information is encrypted and password protected – Works with Netscape and Internet Explorer Electronic Wallets


Microsoft Wallet

- Comes pre-installed in Internet Explorer 4.0, but not in Netscape
- All information is encrypted and password protected
- Microsoft Wallet Merchant directory shows merchants setup to accept Microsoft Wallet



Advantages and Disadvantages of Electronic Cash

- **Advantages**
 - More efficient, eventually meaning lower prices
 - Lower transaction costs
 - Anybody can use it, unlike credit cards, and does not require special authorization
- **Disadvantages**
 - Tax trail non-existent, like regular cash
 - Money laundering
 - Susceptible to forgery

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- **Secure Electronic Transaction**
 - **(SET) protocol**

accumulating balance,

- **Accumulated balance** digital **payment systems** enable users to make micropayments and purchases on the Web, **accumulating** a debit **balance** that they must **pay** periodically on their credit card or telephone bills. IPIN has been widely adopted by online music sites that sell music tracks for 99 cents

online stored value payment systems,

- **Stored value systems** are a form of **electronic payment** technology. They coexist with credit and debit technology and principally target the low **value** transactions. **Online stored value systems** have very low transaction cost

digital cheques

- An electronic check, or e-check, is a form of payment made via the Internet, or another data network, designed to perform the same function as a conventional paper check. Since the check is in an electronic format, it can be processed in fewer steps

Unit 4

DATA ANALYSIS & INTERPRETATION

TOPICS

- Tabulation and Diagrammatic Representation
- Format for Data Analysis (Introduction for each question, Data for each question, Format of Table for presenting the Data, Analysis of the Data and Inference).
- Hypothesis – Meaning, Types of Hypothesis. Formulation of Hypothesis and Identifying the applicable test; Types of Errors, Z test, t test, chi-square test, ANOVA and Drawing Inferences.

Tabulation and Diagrammatic Representation

- Tabulation: When a mass of data has been assembled, it becomes necessary for the researcher to arrange the same in some kind of concise and logical order.
- This procedure is referred to as tabulation.
- Tabulation is the process of summarizing raw data and displaying the same in compact form (i.e., in the form of statistical tables) for further analysis.
- In a broader sense, tabulation is an orderly arrangement of data in columns and rows.

Tabulation is essential because of the following reasons.

- 1. It conserves space and reduces explanatory and descriptive statement to a minimum.
- 2. It facilitates the process of comparison.
- 3. It facilitates the summation of items and the detection of errors and omissions.
- 4. It provides a basis for various statistical computations.

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- Tabulation can be done by hand or by mechanical or electronic devices.
- The choice depends on the size and type of study, cost considerations, time pressures and the availability of tabulating machines or computers.
- In relatively large inquiries, we may use mechanical or computer tabulation if other factors are favorable and necessary facilities are available.
- Hand tabulation is usually preferred in case of small inquiries where the number of questionnaires is small and they are of relatively short length.

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- Hand tabulation may be done using the direct tally, the list and tally or the card sort and count methods.
- When there are simple codes, it is feasible to tally directly from the questionnaire.
- Under this method, the codes are written on a sheet of paper, called tally sheet, and for each response a stroke is marked against the code in which it falls.

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- Usually after every four strokes against a particular code, the fifth response is indicated by drawing a diagonal or horizontal line through the strokes. These groups of five are easy to count and the data are sorted against each code conveniently.
- In the listing method, the code responses may be transcribed onto a large work-sheet, allowing a line for each questionnaire. This way a large number of questionnaires can be listed on one work sheet. Tallies are then made for each question.
- The card sorting method is the most flexible hand tabulation. In this method the data are recorded on special cards of convenient size and shape with a series of holes. Each hole stands for a code and when cards are stacked, a needle passes through particular hole representing a particular code. These cards are then separated and counted. In this way frequencies of various codes can be found out by the repetition of this technique.
- We can as well use the mechanical devices or the computer facility for tabulation purpose in case we want quick results, our budget permits their use and we have a large volume of straight forward tabulation involving a number of cross-breaks.

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- Tabulation may also be classified as simple and complex tabulation.
- The former type of tabulation gives information about one or more groups of independent questions, whereas the latter type of tabulation shows the division of data in two or more categories and as such is designed to give information concerning one or more sets of inter-related questions.
- Simple tabulation generally results in one-way tables which supply answers to questions about one characteristic of data only. As against this, complex tabulation usually results in two-way tables (which give information about two inter-related characteristics of data), three-way tables (giving information about three interrelated characteristics of data) or still higher order tables, also known as manifold tables, which supply information about several interrelated characteristics of data. Two-way tables, three-way tables or manifold tables are all examples of what is sometimes described as cross tabulation.

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- ***Generally accepted principles of tabulation: Such principles of tabulation, particularly of constructing statistical tables, can be briefly states as follows:***
- 1. Every table should have a clear, concise and adequate title so as to make the table intelligible without reference to the text and this title should always be placed just above the body of the table.
- 2. Every table should be given a distinct number to facilitate easy reference.
- 3. The column headings (captions) and the row headings (stubs) of the table should be clear and brief.
- 4. The units of measurement under each heading or sub-heading must always be indicated.
- 5. Explanatory footnotes, if any, concerning the table should be placed directly beneath the table, along with the reference symbols used in the table.
- 6. Source or sources from where the data in the table have been obtained must be indicated just below the table.
- 7. Usually the columns are separated from one another by lines which make the table more readable and attractive. Lines are always drawn at the top and bottom of the table and below the captions.
- 8. There should be thick lines to separate the data under one class from the data under another class and the lines separating the sub-divisions of the classes should be comparatively thin lines.
- 9. The columns may be numbered to facilitate reference.

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- 10. Those columns whose data are to be compared should be kept side by side. Similarly, percentages and/or averages must also be kept close to the data.
- 11. It is generally considered better to approximate figures before tabulation as the same would reduce unnecessary details in the table itself.
- 12. In order to emphasise the relative significance of certain categories, different kinds of type, spacing and indentations may be used.
- 13. It is important that all column figures be properly aligned. Decimal points and (+) or (–) signs should be in perfect alignment.
- 14. Abbreviations should be avoided to the extent possible and ditto marks should not be used in the table.
- 15. Miscellaneous and exceptional items, if any, should be usually placed in the last row of the table.
- 16. Table should be made as logical, clear, accurate and simple as possible. If the data happen to be very large, they should not be crowded in a single table for that would make the table unwieldy and inconvenient.
- 17. Total of rows should normally be placed in the extreme right column and that of columns should be placed at the bottom.
- 18. The arrangement of the categories in a table may be chronological, geographical, alphabetical or according to magnitude to facilitate comparison. Above all, the table must suit the needs and requirements of an investigation.

E-BUSINESS MARKETING TECHNOLOGIES

UNIT 4 :

TOPICS

- E-Commerce and marketing B to B and B to C marketing and branding strategies.
- Web transaction logs,
- Cookies,
- Shopping cart database,
- DBMS,
- SQL,
- Data mining,
- CRM (customer relationship Management)
- System – permission marketing, affiliate marketing, viral marketing.

E-Commerce and marketing B to B and B to C marketing and branding strategies.

- **Marketing is** defined as the set of tools, processes, and strategies you use to actively promote your product, service, and company.
- **Branding is** the **marketing** practice of actively shaping your **brand**.
- **Branding is** about defining who you are as a company.

B to B marketing

- **What Are The Four Types Of B2B Markets?**
- Business buyers can be either profit or non-profit companies.
- To help you get a better idea of the different types of business customers in B2B markets, Below are four basic categories:
- Producers,
- Resellers,
- Governments
- Institutions.

- **Producers:**

- Producers are companies that purchase goods and services that are transformed into other products.
- They include both producers and service providers. Examples General Motors, McDonald's, Dell.
- All these companies must purchase certain products in order to produce the goods and services they create.
- Ex: General Motors needs steel and hundreds of thousands of other products for the production of cars.

■ **Resellers:**

- Resellers are companies that sell goods and services produced by other companies without any material change.
- These include wholesalers, brokers and retailers.
- Walmart , Metro cash and Carry, Big bazar etc.
- Large wholesalers, brokers and retailers have a lot of market power.
- If you can get them to buy your products, your sales may increase exponentially.

■ **Government:**

- The biggest purchaser of goods and services is the government .
- It buys everything you can imagine, from paper and fax machines to tanks and weapons, buildings, highway construction services and medical and security services.
- Governments and local governments are also buying huge quantities of products.
- They contract with companies that provide all kinds of services to citizens, from transport to garbage collection.
- Business-to – Government (B2G) markets are when companies sell to local, state , and federal governments, represent a major selling opportunity, even for smaller retailers.
- In fact, many government entities state that their agencies must award a certain amount of business to small businesses, minority and women-owned enterprises, and businesses owned by disabled veterans.

- **Institutions:**
- Institutional markets include non-profit organizations such as the Red Cross, Temples, hospitals, charities, private colleges, civic clubs, and so on.
- Like government and non-profit organizations, they buy a huge quantity of products and services.
- Keeping costs down is particularly important to them.
- The lower their costs, the more people they can provide their services.

B to B marketing strategies.

- **Absolutely fundamental B2B marketing strategies are**
- Research. ...
- Niche-driven **Strategy**. ...
- A High Performance Website. ...
- Search Engine Optimization (SEO) ...
- Social Media. ...
- Advertising. ...
- Referral **Marketing**.

■ **Research**

-
- Research is the bedrock of any modern marketing effort. From marketplace research to brand research, detailed scientific studies will help you make more informed decisions.
- They'll give you an objective basis for your marketing and provide you valuable baselines for measuring your results.
- By conducting research, you'll know your clients better — which puts you in a position to serve them better.
- Market research also gives you insight into how your processes are performing.
- You'll know which aspects of your firm are performing most successfully and develop a better understanding of which services you should offer.
- The impact of research is clear. studies on the impact of research have shown that firms that conduct systematic research on their prospects and clients grow three to ten times faster and are up to two times more profitable than peers that don't pursue research.

■ **Niche-driven Strategy**

- One of your most important business considerations period – is specialization and niche targeting.
- Research has repeatedly shown that the fastest-growing firms tend to be specialists in a carefully targeted niche.
- This should be an area of the industry that you understand *thoroughly*, a space in which you can become an undisputable expert and leader.
- Specialization makes all of your marketing efforts easier, because it tends to define exactly what you do and immediately distinguish you from the competition.
- A specialization is a differentiator that proves itself.

- **A High Performance Website**
- In today's professional services marketplace, your firm's website is one of your most crucial assets.
- It is much more than a digital billboard or brochure.
- A successful website is the hub of a firm's online presence and an information-rich projection of its expertise into the marketplace.
- Your website is a critical tool for building visibility.
- Potential clients search online to find service providers, and they need to be able to find your firm's website in order for you to have a chance at winning their business. Plus, your website enables you to demonstrate your firm's expertise and become well-known throughout the marketplace.

- Research paints a clear picture of the importance of a professional services firm's website.
- In fact, 80% of people look at website when checking out service providers the most commonly used information source by far.
- And as new visitors reach your site, robust educational content and carefully targeted offers can drive leads to closer and closer engagements, eventually bringing qualified leads straight to you.

- A second component of your website you need to consider is design. Web and graphic design can influence your audience's perceptions, aid recall, and swiftly and intuitively differentiate a business.
- The power of design to engage audiences is often under appreciated — which means it offers a tremendous opportunity to set firms apart and convey the credibility firms need to thrive.
- Finally, another increasingly essential consideration for your website is its usability across a wide range of devices, including mobile. Responsive design, which allows your website to adapt to suit a user's device, has become a key feature as more people use mobile devices to do business.

- **Search Engine Optimization (SEO)**
- As we alluded to in the previous item, your target audience has to be able to find your site for it to be effective. That's where search engine optimization comes in.
- This is such a key piece of the online marketing puzzle that in our studies, high-growth firms list it as the most effective online marketing technique available to them.
- Though SEO is a complex and evolving discipline, it ultimately consists of two primary components.

- **On-site SEO** uses targeted keyword phrases to communicate the concepts on your site that matter to your audience. These keyword phrases typically focus on your services and expertise.
- The purpose of on-site SEO is to communicate to search engines what your website is about. This allows search engines to produce more relevant results to searchers. And when audiences search for insight on your area of specialty, they'll find you.
- **Off-site SEO** takes the form of links to your website, either through outside engagement or guest articles in other publications, for example. These efforts work to increase your site's authority as a widely recognized leader on your topic.
- As more high authority and relevant websites link to your website, search engines will begin to see your site as more credible – resulting in higher rankings.

■ Social Media

-
- If you needed any more proof that social media is here to stay for professional services firms, we've got you covered.
- Research has found that over 60% of buyers check out new service providers on social media, making it a more commonly used source of information than formal referrals and recommendations.
- Even the *nature* of referrals has changed in the wake of social media.
- A recent study on referral marketing has found that 17% of expertise-based referrals are made on the basis of interactions on social media.
- Put simply, social media is an accelerator for the reach of your reputation, expertise, and content.
- It allows you to network and connect with valuable contacts and influencers, as well as monitor your brand by social listening.

- **Advertising**
- There are a number of platforms on which your firm can advertise effectively:
- Industry publications and websites
- Social media
- Search Engine Marketing (SEM) – Google Ads, as well as Bing and Yahoo
- Retargeting – A cookie-based technology that uses a simple JavaScript code to anonymously “follow” your audience across the Web and serve relevant ads
- Advertising doesn’t just promote your services – it can also play an important role in driving content downloads, increasing both your expertise and visibility.

- It's important, however, to use forms of advertising best-suited to professional services. LinkedIn, retargeting, and other industry-focused advertising tend to work best, because they allow you to most directly target appropriate industry audiences, which leads to more conversions, higher click-through rates, and lower cost per download.
- Search engine marketing (SEM), on the other hand, often can be more expensive and harder to target for professional services' purposes. Similarly, Facebook ads tend to be less effective because the platform is used at a lower rate by professional services buyers than other social media networks..
- However, it's important to remember there are many variations of each of these advertising types. Professional services firms might find them more or less successful depending on budget, ad purpose, targeting, and industry niche.

■ **Referral Marketing**

- We mentioned that the nature of professional services referrals has changed – and this has major implications for your B2B marketing strategy. Our studies of [referral marketing strategies in professional services](#) have revealed an important new facet of the practice – over 81.5% of providers have received a referral from someone who wasn't a client.
- Where do these referrals come from? The vast majority are based on a firm's reputation for specific expertise.
- By using content marketing in conjunction with the rest of the tactics in this list, you can build a brand with a widespread reputation for specialty in your area – and an understanding of your expertise even among audiences that haven't worked with you directly. This brand recognition can lead to referrals and new business.

- **Marketing Automation, CRM, and Lead Nurturing**
- **Marketing Automation:** Marketing automation replaces high-touch, repetitive manual processes with automated ones – supported by technology solutions. It brings together all of your online marketing channels into one centralized system for creating, managing, and measuring programs and campaigns.
- As with any technological tool, it's essential to select the right marketing automation software for your firm. Make sure the size, complexity, and scalability of a prospective solution is a good match for your needs.

- **CRM:** Another essential software is a Customer Relationship Management System (CRM). Many firms use a CRM to track and organize opportunities and client information. In short, a CRM will help you stay organized and connected, no matter how sophisticated your operations grow.
- Your CRM serves as the database for all the information you collect about opportunities and clients, including specific interactions with them. The information can be entered, stored, and accessed by employees in different firm departments, synchronizing efforts across your firm.

- **Lead Nurturing:** But CRM isn't the end of the story. Remember the lead-nurturing content funnel? Your website is one critical piece of that puzzle – and email marketing is another. Targeted, analytics-driven email marketing campaigns allow you to deliver soft and hard offers for specific buyer roles, tailored to a buyer's particular place in the buying process.
- Similarly, drip email campaigns enable you to send more targeted offers to segments of your audience over a set period of time. This builds closer engagement (and educates further) through successive, relevant content and offers.

■ **Testing and Optimization**

- We started with research, but we're not finished with our scientific approach. Testing and optimization allow you to iterate your marketing efforts and make ongoing decisions based on hard data rather than intuition.
- Just as research is the bedrock of your marketing, testing and optimization is your continuous guide. You should never stop testing your marketing campaigns and adjusting them accordingly. This includes:
 - A/B testing of emails, landing pages– Using A/B testing tools (like Optimizely or Unbounce), learn which of two emails or landing pages converts users more successfully based in variances of language, design, or other elements.
 - Email and landing page rendering– Use tools like Email on Acid to test how emails will render on different devices and platforms, ensuring that they look and function as they should.

■ **Analytics and Reporting**

- Similarly, it is critical to analyze the right metrics in order to measure results effectively. You will need tools in place to collect accurate data on all your efforts, from your website to social media to SEO.
- Google Analytics is an essential tool for measuring and [analyzing your site traffic](#). MOZ can help you study and improve your SEO results, while tools like Hootsuite provide detailed social media analytics.
- Analytics and testing help you truly understand what is working and what is not. Embrace them, use them. They will help you turn your marketing efforts from an art form into a science.

B to C marketing strategies.

- Business to customer **marketing**, commonly known as **B2C marketing**, is a set of **strategies**, practices, and **tactics** that a company uses to push its products or services to customers.
- **B2C** campaigns don't just focus on the benefit or value that a product offers, but also on invoking an emotional response from the customer.

- **B2C marketing strategies**
- Connect with prospects on a human level. Let's start with content marketing.
- Host creative and engaging contests.
- Add a free offer with every purchase.
- Prioritize searcher intent for SEO.
- Run retargeting programs.
- Create membership programs.
- Use social media.
- Build micro-influencer relationships.

- **1. Connect with prospects on a human level**
- Let's start with content marketing. If you're focused on building relationships with your prospects, you must treat them like human beings — not like potential ATMs who will dispense cash for your products.
- Whether you're writing blog articles or posting on social media, create content that's authentic to your voice and brand. Communicate with people on a human level, whether you're sharing your own story or helping them understand their frustrations.
- The idea here is to present yourself and your business as a solution to whatever pain points your customers personally experience.

- **•Example**

- Let's say that you create online courses to help people lose weight. Maybe you struggled with your own weight earlier in your life, so you know how it feels to struggle with yo-yo diets and New Year's Resolutions that never pan out.
- Use those experiences to connect with your audience. Post before and after photos, talk about weight-loss strategies that failed, and share your personal struggles. You can also talk about how you feel now that you've conquered your weight-loss struggles and triumphed over your former pain.
- People connect to stories like this. The message you're sending is simple: "I figured out a way to beat this problem. Let me help you do the same."

■ **2. Host creative and engaging contests**

- Everyone loves a contest. The idea of winning something for free is almost too attractive to pass up — especially if an entry doesn't require much effort or time.
- You can host a contest on your blog, social media, or anywhere else that seems appropriate. Many entrepreneurs use [webinars](#) to hold contests. This way, you boost attendance for your webinar and gain exposure through the contest at the same time.
- The important thing is to make sure you're following the rules on whatever platform you choose. It's also essential to give away something that your target audience will view as valuable.
- You might be tempted to give away something expensive that doesn't relate to your business. Sure, lots of people would love a new flat-screen television, but if your online courses have nothing to do with TV, the contest won't have the desired result. Choose a giveaway that's related to what you do.

- **Example**

- Maybe you create online courses and other digital products on public speaking. You've created a mini-course and two full-length courses, so you decide to give away access to your mini-course in a contest.
- Let as many people know about your mini-course contest as possible. Describe what the course entails and how many people can win. Then, let potential participants know how they can enter the contest.
- You're an expert on public speaking, right? So maybe you could ask people to post photographs of themselves during public speaking engagements, or maybe you could ask them to record 15-second speeches. Whatever the rules, stick by them and choose a winner fairly. If you don't want to do a contest, host a giveaway instead.

■ **3. Add a free offer with every purchase**

- Also known as a gift with purchase, a free offer with every purchase adds even more value to the product you sell. In other words, it lets people know that they're getting something extra without having to part with more money.
- That's a win for everyone involved. You get paid for your product, and the customer gets a bonus item in return.
- The free offer can be anything you want. Maybe it's a mini-course that's related to your main course. Or perhaps it's an e-book or workbook that will help your customers get better use out of your online course.



- **Example**

- Many of our Kajabi Heroes teach spirituality-based online courses.
- If you fall into that same niche, you could create a bonus offer for every purchase related to helping people find their own spirituality.
- Devotions, guided meditations, and similar products can prove extremely popular among your target audience. Alternatively, you could share a short e-book that complements your online course or create a video that shares your story.
- The important thing is to make sure your offer has true value. If you don't want to create something as a bonus, you could offer a discount on another one of your products. For instance, everyone who buys your primary online course gets your mini-course for free.

■ **4. Prioritize searcher intent for SEO**

- Many entrepreneurs fail to consider searcher intent when they optimize their content for SEO. We assume that all Google searches, for instance, are the same.
- They're not.
- Searcher intent refers to the reason behind a Google search. For example, if you want something to eat, you might search for "Chinese restaurants near me." If you're interested in cooking, you might search for "Chinese recipes for beginners."
- The type of search indicates its intent. Some consumers are just gathering information, others are comparing their options, and still more are ready to buy.
- Ideally, you'll create content for people in each phase. That way, they know you have all the answers.

- **Example**

- Let's say, for instance, that you're interested in getting in better shape.
- You might start by researching different types of physical activity:
- High-impact, Low-impact , Running , Cycling , Yoga , Weight Training etc
- You're in the information-gathering phase at this point. You don't know how you want to get in better shape because you're not yet informed about the options that exist.
- You can target consumers in this phase by preparing comparison articles and charts. Help people understand their options so they can make an educated decision.

- ■ But what if you already know what type of fitness interests you? For years, you've told yourself you'll start jogging every day, but now you're committed.
- In this phase, you're already aware. You're looking for the best product to help you become a consistent jogger.
- For this audience, you might create content on the benefits of jogging, jogging posture, daily guides, and more.
- You're demonstrating your expertise and presenting your product as a way to dive deeper into the subject.
- When you break down your audience by searcher intent, you can create content that's custom designed for each segment.
- You'd be surprised by how well this tactic works, especially if you're comfortable in your knowledge of your buyer personas.

■ **5. Run retargeting programs**

- Retargeting sounds like a difficult concept, but it's actually pretty simple. It's all about reconnecting with consumers who have connected with your business in the past. It's particularly relevant for B2C marketing.
- As a form of paid advertising, retargeting can put a dent in your budget. However, if you use it correctly, the ROI can make the expense worth it.
- When a consumer makes contact with your business, a sequence gets triggered. The next time the customer visits Facebook, for example, he or she will see an ad for your business.
- That customer might not immediately click on the ad or buy from you. However, seeing the ad reinforces your brand image and helps the consumer remember your company in the future.

- **Example**
 - Maybe you teach online courses related to web design. You help aspiring designers become better at their work and find paying jobs.
 - You could remarket to potential customers who visit your website to read one of your blog posts or check out a landing page.
 - If you have Facebook Ads set up, you can use a Facebook Pixel to retarget those customers.
 - After visiting your site, the customer logs on to Facebook to check his or her wall. Right there in the feed is an advertisement for your web design course.

■ **6. Create membership programs**

- Think of a membership program as a form of gamification.
- It encourages consumers to interact with your business so they can rise up the membership levels.
- Also called a loyalty program, a membership program combines competitiveness and rewards.
- As consumers move up the membership levels, they gain access to more rewards, which enhances their relationship with your business.

■ **Example**

- You could create three membership levels for your business:
- **Bronze:** Customers at the bronze level receive free discounts on your digital products every quarter.
- **Silver:** Those who reach the silver level get a special downloadable asset twice a year in addition to the discounts.
- **Gold:** At the top level, consumers receive bronze and silver rewards as well as a free 15-minute phone consultation every year.
- Obviously, you could name the levels whatever you want and choose the rewards.
- You also decide how customers move up the levels.
- For instance, bottom-tier members might have spent between \$1 and \$100 in the preceding year, while silver members have to spend \$300 and gold members have to spend \$500.

■ **7. Use social media**

- Many brands have achieved amazing success using social media.
- Some of them advertise on social, while others take the organic approach.
- If you don't have any money in the budget for paid social, focus on building your following through strategic B2C marketing.
- There are lots of ways to get people more active on social when it comes to your brand.

▪ **Example**

- Let's say you've just opened an Instagram account. You want to attract people who might be interested in your online courses, but you're not sure where to start.
- Your strategy might look something like this:
- Follow 10 people per day who are interested in your niche or industry.
- Create a branded hashtag that you use on all of your posts.
- Use new hashtags every day that correspond to your subject or niche.
- Host contests that are exclusive to Instagram.
- Share inspirational or educational content that makes your followers feel like they're part of a community.
- That's a solid strategy. Plus, you can duplicate it for other platforms, from Facebook to Twitter.

■ **8. Build micro-influencer relationships**

- When you say the word “influencer,” people often hear names like Kim Kardashian, Selena Gomez, and Beyonce. However, micro-influencers are often more engaging with their social content plus, they don’t cost millions of dollars.
- Micro-influencers are social media personalities in a very specific niche.
- They often have small but loyal and devoted followings of people who make buying decisions based on what the influencers say.
- And there’s your opportunity for B2C marketing greatness.
- Partnering with micro-influencers can be a boon to your business.
- You might send them free copies of your online courses, to get them interested.

- ■ **Example**

- Let's say that you're a Knowledge Commerce entrepreneur in the personal safety niche.
- You've met a security expert on Instagram who has a pretty decent following.
- You both want to teach people how to stay safe.
- Approach that expert and ask him or her to take a look at your course.
- If the influencer likes it, request that he or she promote it.
- Some micro-influencers might charge money, but many don't.
- If you start by building relationships, you'll spend less cash.

■ **9. Invest in mobile-first marketing**

- The world is moving in a mobile-first direction.
- Many people don't own laptop or desktop computers anymore.
- They do all of their computing via tablets, phones, and even watches.
- That's why it's critical for B2C marketers to adopt a mobile-first strategy.
- Figure out how your content will appeal to your audience best on mobile devices.
- It starts with a responsive website.
- If you build your website, you'll automatically have a responsive layout that looks great across all devices.
- Plus, you won't have to worry about managing two different sites: one for desktop and one for mobile.
- Additionally, you'll want your posts to look great on mobile, from your blog to social media.
- Condense your images, use readable fonts, and make yourself accessible on mobile.

- **Example**
- If you're interested in starting a Knowledge Commerce business.
- You can begin building your business from the ground up without worrying about how people will reach you via mobile. It's ingrained in the platform.
- Make sure you're up-to-date on the best practices for marketing on mobile. [Email marketing](#), SMS marketing, and social media marketing are all mobile friendly.
- You can also use gamification and other forms of engaging B2C marketing to get in touch with your target market on mobile.
- You don't have to forget about users on desktop completely, but consider the fact that your best customers might find you on their mobile devices.

■ **The difference between B2C and B2B marketing**

- You might have noticed that every strategy we've listed deals specifically with B2C marketing.
- We're not addressing B2B marketing at all.
- There's a good reason for that.
- Some of the same tactics can work for B2B, but you have to adjust them for your audience.
- When you're marketing to businesses, for instance, you're targeting people who use different social media channels. Additionally, you have to target the right decision-maker at the business if you want to find success.

- Essentially, the difference between B2B and B2C marketing comes down to the end user.
- With B2C marketing, you only have to convince one person to buy.
- For B2B marketing, the opposite is often true.

■ **Using B2C campaigns to grow your business**

- A well-rounded B2C marketing campaign can make a huge difference in your revenue. Regardless of which strategies you use, you can vastly improve your business's outlook and reach more consumers.
- What is B2C marketing?
- It's marketing campaigns directed at consumers or end users for personal purposes. It differs from B2B marketing, which targets other businesses as the buyers.
- B2C marketing works by helping you identify ways to communicate with your target audience and measure the results of each campaign.
- It allows you to persuade your target audience to choose your products over those of your competitors.
- You can try lots of B2C marketing strategies.

- Start by connecting with people on a human level. Talk to them like friends not potential customers.
- Host creative and engaging contests to further interest your target audience.
- Get them excited about your digital products and encourage them to spread the word.
- You can add a free offer with every purchase, optimize your SEO for user intent, run retargeting programs, and create membership programs.
- All of these strategies increase engagement during B2C marketing campaigns.
- Social media and micro-influencers are also beneficial for many B2C companies.
- Finally, don't forget to invest in mobile-first marketing.
- Many of your target audience members use their mobile devices primarily or exclusively.
- You're ready to start your next B2C marketing campaign. What strategy will you try first?

B to B branding strategies.

- The term **brand** refers to a business and marketing concept that helps people identify a particular company, product, or individual.
- **Brands** are intangible, which **means you** can't actually touch or see them. As such, **they** help shape people's perceptions of companies, their products, or individuals.

- **Brand strategy**, by definition, is a long term inter-departmental plan for a **brand** to achieve specific, pre-defined goals.
- A successful **brand strategy** must be well-designed and executed across all business functions, with the capacity to improve consumer experience, competitive advantage and financial performance.

- - **5 Steps to Build Your B2B Brand**
 - Outline **Your** Vision and Core Values.
 - Define **Your** Target Market/Ideal Client.
 - Determine Value Proposition.
 - Create **Your B2B Brand** Narrative.
 - Promote **Your Brand** Internally.

■ **1. Outline Your Vision and Core Values**

- The first step in a B2B branding project is outlining your firm's vision, core values, and mission statement. These are the foundation of a brand and must be definitively outlined before creating logos, taglines, websites, copy, or any type of tangible collateral.
- The typical process for outlining vision, values, and a mission statement is a creative meeting of the C-level team or decision makers.
- Since these individuals are guiding the success of the company, they are the best group for determining the fundamental values of the organization.
- A mission statement should communicate the vision and values of the organization and how the company adds value.
- For example, Amazon.com's mission statement is "to be Earth's most customer-centric company, where customers can find and discover anything they might want to buy online, and endeavors to offer its customers the lowest possible prices." This mission statement shares the company's vision and communicates the value to its customers.

■ **2. Define Your Target Market/Ideal Client**

- Next, determine who your target market is and what they “look” like.
- The simplest way to do this is to create a profile of an ideal client.
- The profile includes information about sex, occupation, age range, education level, geographical location, income, work environment, and job title.
- The profile creates a detailed snapshot of whom your company is trying to reach.
- Be sure to define their pain points and challenges as well, since that will help with your value proposition.

■ **3. Determine Value Proposition**

- What compels clients to buy your products or services?
- Determine what unique offering or attribute your company provides that differentiates you from competitors and addresses a pain point or points for your clients.
- The value proposition focuses on the benefit of your product and service.
- A great value proposition answers the question, “Why should I be your client?” Stay away from listing features here since a client won’t care about features if your product or service doesn’t fulfill a need.

■ **4. Create Your B2B Brand Narrative**

- At this point in the B2B branding project, it's time to create your brand narrative.
- This is essentially how you tell your “company’s story.”
- This is not the same as the company history. Storytelling, also referred to as messaging, is how you are going to communicate with your potential clients and educate them about why they need your product or service.
- By crafting an interesting and engaging brand narrative, you are educating your target market without them thinking they are being sold on a product or service.
- Your B2B brand narrative runs throughout your marketing strategy and is essential to keeping a consistent brand.

- **5. Promote Your Brand Internally**
- The final step in launching your new B2B brand includes getting company wide buy-in.
- It's counter-productive to launch a new brand if your internal staff doesn't understand it or even know about it.
- Sadly, many companies don't alert their employees about a new brand or a re-brand until it has launched and been communicated to the market.
- Every member of your organization is a brand ambassador in one way or another so make sure you share the elements of the brand with them prior to launch.
- Share the information with excitement to create internal buzz and show employees they have a stake in the company's success.
- [Building a B2B Brand](#) involves more than logo creation and a new email template.
- The branding process is an opportunity to define how your target market sees your company and views your products or services.

B to C branding strategies

- The **four brand strategies** are
- Line extension,
- **Brand** extension,
- New **brand strategy**,
- flanker/fight **brand strategy**

Line extension

- A product **line extension strategy** is an approach to developing new products for your existing customers or for prospects who do not currently buy from you.
- Extending a product **line** involves adding new features to existing products, rather than developing completely new products.

Brand extension

- A **brand extension** is when a company uses one of its established **brand** names on a new product or new product category.
- It's sometimes known as **brand** stretching.
- The **strategy** behind a **brand extension** is to use the company's already established **brand** equity to help launch its newest product

New brand strategy

- The **new brand strategy** is when a firm creates a **new brand** to go along with a **new** product.
- The **new brand strategy** is the most costly, since starting a **new brand** includes costs such as advertising, sales personnel, manufacturing costs and more

Flanker / fight **brand strategy**

- '**Flanker Brand**' essentially means a new **brand** that is introduced for an existing category of products which is intended to compete without harming an existing **brand's** reputation by targeting a different class or grade of consumers for these products

Web transaction logs

- Transaction logs, which are built into web server software, record user activity at a website.
- Log file analysis tools cull information from these files, which can contain tens to hundreds of entries for each user.
- Transaction log data becomes more useful when it is combined with registration form data and shopping cart data.
- Registration forms and shopping cart database are two other visitor generated data trails.

- - Merchants use registration forms to gather personal data such as the name, address, phone number, zip code, e-mail address, and other optional information on the tastes and interests of the consumer.
 - The shopping cart database captures all the item selection, purchase, and payment data.
 - The data from transaction logs, registration forms, and the shopping cart database can also be combined with other information that users submit on product forms, contribute in chat rooms, or submit via e-mail messages to a firm to produce a veritable treasure trove of information for both individual merchant sites and for the industry as a whole

Cookies,

- Although the transaction log represents the foundation of online data collection, it is supplemented using cookies that are placed on a user's hard drive when he or she visits a site.
- Cookies allow a website to store data on a user's machine that can be retrieved later.
- Cookies provide marketers with a very quick means to identify each customer and to understand his or her prior behavior at the site

- Cookies can be used to determine how many people
- are visiting a site, how many are repeat visitors, and how often they have visited.
- They also make use of shopping cart and quick checkout possible by allowing a site to keep track of a user as he or she adds to the shopping cart.
- Cookies can be combined with web bugs to create cross-site profiles.
- Web beacons (sometimes called web bugs) are graphic files that are embedded in e-mails and on websites.
- When a user opens an HTML format e-mail with an embedded web beacon, a request is sent to the server for the graphic data.
- Web beacons are used to automatically transmit information about the user and the page being viewed to a monitoring server in order to collect personal browsing behavior and other personal information

Shopping cart database,

- A **shopping cart** on an online retailer's site is a piece of software that facilitates the purchase of a product or service.
- It accepts the customer's payment and organizes the distribution of that information to the merchant, payment processor and other parties.
- The **shopping cart database** stores information about the products and about the orders.
- It stores the catalog of products.
- It stores general information about the order, such as the customers' names and addresses, and the items selected for each order and when the order was submitted.

DBMS,

- A **Database Management System (DBMS)** is software designed to store, retrieve, **define**, and manage data in a database.

- - it is general-purpose software that provides the users with the processes of defining, constructing and manipulating the database for various applications.
 - Database systems are designed to manage large bodies of information.
 - Management of data involves both defining structures for storage of information and providing mechanisms for the manipulation of information

- In addition, the database system must ensure the safety of the information stored, despite system crashes or attempts at unauthorized access.
- If data are to be shared among several users, the system must avoid possible anomalous results.
- A database management system (DBMS) is a collection of interrelated data and a set of programs to access those data.

- - This is a collection of related data with an implicit meaning and hence is a database.
 - The collection of data, usually referred to as the database, contains information relevant to an enterprise.
 - The primary goal of a DBMS is to provide a way to store and retrieve database information that is both convenient and efficient.

- - By data, we mean known facts that can be recorded and that have implicit meaning.
 - For example, consider the names, telephone numbers, and addresses of the people you know.
 - You may have recorded this data in an indexed address book, or you may have stored it on a diskette, using a personal computer and software such as DBASE IV or V, Microsoft ACCESS, or EXCEL.

SQL,

- **SQL** stands for Structured Query Language.
- **SQL** statements are used to perform tasks such as update data on a database, or retrieve data from a database.
- Some common relational database management systems that **use SQL** are: Oracle, Sybase, Microsoft **SQL** Server, Access, Ingres, etc.

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- **SQL** has become a very **important** tool in a data scientist's toolbox since it is **critical** in accessing, updating, inserting, manipulating and modifying data.
- **SQL** is a special-**purpose** programming language designed to handle data in a relational database management system.
- A database server is a computer program that provides database services to other programs or computers, as defined by the client-server model.

Data mining,

- **Data mining** is the process of discovering actionable information from large sets of **data**.
- **Data mining** uses mathematical analysis to derive patterns and trends that exist in **data**.
- These patterns and trends can be collected and defined as a **data mining** model.
- **Data mining** is the process of understanding **data** through cleaning raw **data**, finding patterns, creating models, and testing those models. It includes statistics, machine learning and database systems

- - Data mining is **used** in a variety of ways, such as database marketing, credit risk management, fraud detection, spam Email filtering, or even to discern the sentiment or opinion of users.
 - The main purpose of **data mining** is extracting valuable information from available **data** that can be used to make predictions about future trends

CRM (customer relationship Management)

- It is an approach to managing a company's interaction with current and future customers.
- The CRM approach tries to analyze data about customers' history with a company, in order to better improve business relationships with customers, specifically focusing on retaining customers, in order to drive sales growth.
- One important aspect of the CRM approach is the systems of CRM that compile information from a range of different channels, including a company's website, telephone, email, live chat, marketing materials, social media, and more.

- The CRM approach and the systems used to facilitate CRM, businesses learn more about their target audiences and how to best cater to their needs.
- The adoption of the CRM approach may also occasionally lead to favouritism within an audience of consumers, leading to dissatisfaction among customers and defeating the purpose of CRM.

Types of CRM

- Operational CRM
- Analytical CRM
- Collaborative CRM

Operational CRM

- The primary goal of CRM systems is to integrate and automate sales, marketing, and customer support.
- These systems typically have a dashboard that gives an overall view of the three functions on a single page for each customer that a company may have.
- The dashboard may provide client information, past sales, previous marketing efforts, and more, summarizing all of the relationships between the customer and the firm.
- Operational CRM is made up of 3 main components:
 1. Sales force automation
 2. Marketing automation
 3. Service automation.

Analytical CRM

- The role of analytical CRM systems is to analyze customer data collected through multiple sources, and present it so that business managers can make more informed decisions.
- Analytical CRM systems use techniques such as data mining, correlation, and pattern recognition to analyze the customer data.
- These analytics help improve customer service by finding small problems which can be solved, perhaps, by marketing to different parts of a consumer audience differently.

Collaborative CRM

- The third primary aim of CRM systems is to incorporate external stakeholders such as suppliers, vendors, and distributors, and share customer information across organizations.
- For example, feedback can be collected from technical support call, which could help provide direction for marketing products and services to that particular customer in the future.

Permission marketing,

- **Permission marketing** refers to a form of advertising where the intended audience is given the choice of opting in to receive promotional messages.
- **Permission marketing** is characterized as anticipated, personal, and relevant

Steps of Permission Marketing

- **Step 1:** Offer an Incentive. ...
- **Step 2:** Teach the Prospect Over Time.
- **Step 3:** Reinforce the Incentive. ...
- **Step 4:** Increase the Level of **Permission**. ...
- **Step 5:** Ask for the Sale.

- - Facebook is a prime **example** – whether it is to post, share, or amplify, the marketer would have to send a friend request (or a **permission**) to the potential prospects.
 - Opt-in email is an **example of permission marketing**, where Internet users request to receive information about a certain product or a service.

Affiliate marketing

- A marketing arrangement by which an online retailer pays commission to an external website for traffic or sales generated from its referrals
- **Affiliate marketing is the** process by which an **affiliate** earns a commission for **marketing** another person's or company's products.
- The **affiliate** simply searches for a product they enjoy, then promotes that product and earns a piece of the profit from each sale they make.

- - Marketers promote their affiliate programs by offering bonuses to anyone who purchases the offer.
 - For example, you could give a free ebook you wrote to any follower who makes a purchase.
 - Promotions like this encourage customers to buy by sweetening the deal.
 - Affiliate marketing is when an online retailer pays you a commission for traffic or sales generated from your referrals.
 - Your followers purchase the product or service using your affiliate link.
 - You get paid a commission for the sales made using your affiliate link

Viral marketing.

- **Viral marketing** refers to a technique in **marketing** a product or a service where users help in spreading the advertiser's message to other websites or the users create a scenario which can lead to multi-fold growth.

UNIT 5

CYBER LAWS

TOPICS

- Legal Aspects of E-Business,
- Internet frauds – Cyber Laws.
- IT Act 2000 salient features.

Legal Aspects of E-Business

- The emergence of new communication methods that allow transfer of information in real time and with great precision resulted in their use and trade.
- The new communication methods has allowed expansion of market to international level and use of modern means of communication have been included in trade, which has increased the speed of doing business.

- The establishment of commercial relations by computer or other modern means of communication has become essential in recent decades.
- There are very diverse modern medias which can transmit at a distance the words, pictures and information.
- Most information that may have a role in resolving trade disputes are not written on paper, but are stored in computer systems.

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- In relation to legal provisions there are a number of issues such as: –
- There is no code of conduct or proposals in this regard.
- Differences between legislation and reality are quite high.
- There should be more interest for a correct implementation of relevant laws and especially for coherent effects.
- Providers of information society services should be informed about their rights and obligations imposed by law.

Nature of Cyber Crime

- The extent of loss involved worldwide of cyber crimes is tremendous as its estimated that about 500 million people who use the Internet can be affected by the emergence of cyber crimes .
- Cyber crimes are a very serious threat for the times to come and pose one of the most difficult challenges before the law enforcement

- It is difficult to identify the culprit as the Net can be a vicious web of deceit and can be accessed from any part of the globe.
- Cyber crime does not involve any physical assault it involves greed of the human for these reasons , cyber crimes are considered as white-collar crimes.

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- To understand cyber crime as a significantly new phenomenon, with potentially profoundly new consequences , it is necessary to recognize it as a constituent aspect of the wider political , social and economic problem currently effecting countries world wide
- This new technology not only provides opportunities for the profitable development of an international information market but has also raised the specter of new criminal activities to exploit humans.

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- The very technology that enables multinationals to do business more effectively and challenge the individual controls and regulations of nation states , also offers the prospect of globally organized criminal networks .
- Moreover the free flow of uncensored information on electronic networks and web - sites is as attractive to insurgents and extremist groups as it is to dissidents proclaiming their human rights.

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- Just as crimes have changed with the growth of information technology so have the categories of criminals who engage in such crimes.
- There are three basic categories of criminals who engage in such crimes , ranging from **hackers** , **information merchants and mercenaries**, to terrorists extremists deviants.

Need for Cyber Laws in India

- Internet was commercially introduced in our country during the last decade.
- The beginnings of Internet were extremely small and the growth of subscribers very slow, However as Internet has grown in our country, the need has been felt to enact the relevant Cyber laws which are necessary to regulate Internet in India.

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- The need for cyber laws was propelled by numerous factors.
- Firstly, India has an extremely detailed and well-defined legal system in place. Numerous laws have been enacted and implemented and the foremost amongst them is the Constitution of India.

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- We have inter alias, amongst others, the Indian Penal Code, The Indian Evidence Act 1872, The Banker's Book Evidence Act 1891, The Reserve Bank of India Act, 1934, The Companies Act, 1956 and so on.
- However the arrival of Internet signaled the beginning of the rise of new and complex legal issues

- It may be pertinent to mention that all the existing laws in place in India were enacted way back keeping in mind the relevant Political, social, economic, and cultural scenario of that relevant time, Nobody then could really visualize about the Internet.
- Despite the brilliant acumen of our master draftsmen, the requirements of cyberspace Could hardly ever be anticipated, As such, the coming of the Internet led to the emergence of numerous ticklish legal issues and problems which necessitated the enactment of Cyber laws.

- Secondly, the existing laws of India, even with the most benevolent and liberal interpretation, could not be interpreted in the light of the emerging cyberspace, include all aspects relating to different activities in cyberspace.

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- In fact, the practical experience and the wisdom of judgment found that it shall not be without major perils and pitfalls, if the existing laws were to be interpreted in the scenario of emerging cyberspace, without enacting new cyber laws.
- As such, there was a need for enactment of relevant cyber laws .
- Thirdly, none of the existing laws gave any legal validity or sanction to the activities in Cyberspace For example, the Net is used by a large majority of users for email, Yet till today, email is not "legal" in our country.

- There is no law in the country, which gives legal validity, and sanction to email. Courts and judiciary in our country have been reluctant to grant judicial recognition to the legality of email in the absence of any specific law having been enacted by the Parliament. As such the need has arisen for Cyber law.

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- Fourthly, Internet requires an enabling and supportive legal infrastructure in tune with the times.
- This legal infrastructure can only be given by the enactment of the relevant Cyber laws as the traditional laws have failed to grant the same.
- E- commerce, the biggest future of Internet, can only be possible if necessary legal infrastructure compliments the same to enable its vibrant growth.

Cyber Crime Information Technology Act 2000 and Cyber Crimes

- The Information Technology Act. 2000 which not only provides the legal infrastructure for E-commerce in India but also at the same time, gives draconian powers to the Police to enter and search, without any warrant, any public place for the purpose of nabbing cyber criminals and preventing cyber crime.
- Defining Cyber Crime, as“ acts that are punishable by the Information Technology Act" would be unsuitable as the Indian Penal Code also covers many cyber crimes.

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- Such as email spoofing and cyber defamation, sending threatening emails etc.
- A simple yet sturdy definition of cyber crime would be "unlawful acts wherein the computer is either a tool or a target or both".
- The word 'cyber' and its relative [dot.com](#) are probably the most commonly used terminologies of the modern era.

- In the information age the rapid development of computers, telecommunications and other technologies has led to the evolution of new forms of trans national crimes known as "cyber crimes".
- Cyber crimes have virtually no boundaries and may affect every country in the world.
- They may be defined as "any crime with the help of computer and telecommunication technology" with the purpose of influencing the functioning of computer or the computer systems.

Internet frauds.

- Cyber Crime
- Pornography on the Net
- Breach of confidentiality and privacy

Types of Cyber Crimes

- Hacking
- Cracking
- Security related crimes
- Network packet sniffers
- Internet Protocol Spoofing
- Fraud on the internet
- Online investment newsletters
- Bulletin boards
- E-Mail Scams
- Credit card fraud
- Publishing of false digital signature
- Making available digital signature for fraudulent purpose
- Alteration and destruction of digital information.

HACKING

- The gaining of unauthorized access to data in a system or computer.
- As per Section 66 of “The information Technology Act,2000” hacking is defined as
- “ Whoever with the intent to cause or knowing that to is likely to cause wrongful loss or damage to the public or any person destroys or deletes or alters any information residing in a computer resource or diminishes its value or utility or affects it injuriously by any means commits hacking”

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- Punishment for hacking under section 66 of IT act,2000 is imprisonment for three years or fine which may extent up to two lakhs or both.
- A Hacker is a person who breaks in or trespasses a computer system.
- Hacking is considered has criminal trespass whatever may be the intention of the hacker.

Cracking

- The term cracking means, 'illegal access'. Now, 'access' comprises the entering of the whole or any part of a computer system (hardware, components, stored data of the system installed, directories, traffic and content-related data).
- However, it does not include the mere sending of an e-mail message or file to that system.
- Access includes the entering of another computer , system , where it is connected via public telecommunication networks or to a computer system on the same network, such as-a LAN (local area network) or Intranet within an organisation.
- The method of communication (e.g. from a distance , including via wireless links or at a close range)does not matter. So if a virus is sent through an e-mail, it is not an illegal 'access and hence cannot be termed as 'cracking

Security Related Crimes

- Security Related Crimes With the growth of the internet, network security has become a major concern.
- Private confidential information has become available to the public.
- Confidential information can reside in two states on the network.
- It can reside on the physical stored media, such as hard drive or memory or it can reside in the transit across the physical network wire in the form of packets.
- These two information states provide opportunities for attacks from users on the internal network, as well as users on the Internet.

Network Packet Snifters

- Network computers communicate serially where large information pieces are broken into smaller ones.
- The information stream would be broken into smaller pieces even if networks communicated in parallel.
- These smaller pieces are called network packets:
- Since these network packets are not encrypted they can be processed and understood by any application that can pick them off the network and process them.
- A network protocol specifies how packets are identified and labeled which enables a computer to determine whether a packet is intended for it.

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- The specifications for network protocols such as TCP/IP are widely published.
- A third party can easily interpret the network packets and develop a packet sniffer.
- A packet sniffer is a software application that uses a network adapter card in a promiscuous mode (a mode in which the network adapter card sends all packets received by the physical network wire to an application for processing) to capture all network packets that are sent across a local network.
- A packet sniffer can provide its users with meaningful and often sensitive information such as user account names and passwords.

Internet Protocol Spoofing

- An IP attack occurs when an attacker outside the network pretends to be a trusted computer either by using an IP address that is within its range or by using an external IP address that you trust and to which you wish to provide access to specified resources on your network.
- Normally an IP spoofing attack is limited to the injection of data or commands into an existing stream of data passed between client and server application or a peer to peer network connection.

Password attacks

- Password attacks can be implemented using several different methods like the brute force attacks, Trojan horse programmes.
- IP spoofing can yield user accounts and passwords.
- Password attacks usually refer to repeated attempts to identify a user password or account.
- These repeated attempts are called brute force attacks
- At the core of these security breaches is the distribution of sensitive information to competitors or others who use it to the owners' disadvantage.

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- While an outside intruder can use password and IP spoofing attacks to copy information, an internal user could place sensitive information on an external computer or share a drive on the network with other users.
- Man-in-the-middle-attacks :This attack requires that the attacker have access to network packets that come across the networks.
- The possible use of such attack are theft of information, hijacking an ongoing session to gain access to your internal network resources, traffic analysis to drive information about one's own network and its users, denial of service provides companies and individuals with the opportunity of marketing their products corruption of transmitted data, and introduction of new information into network sessions.

Fraud on the Internet

- This is a form of white collar crime.
- Internet fraud is a common type of crime whose growth has been proportionate to the growth of internet itself.
- The internet on the net. It is easy for people with fraudulent intention to make their messages look real and credible.
- There are innumerable scams and frauds most of them relating to investment schemes and have been described in detail below as follows

Online investment newsletters

- Many newsletters on the internet provide the investors with free advice recommending stocks where they should invest.
- Sometimes these recommendations are totally bogus and cause loss to the investors

Bulletin boards

- This is a forum for sharing investor information and often fraud is perpetrated in this zone causing loss of millions who bank on them.

E-mail scams

- Since junk mail (Email which contains useless material) is easy to create, fraudsters often find it easy to spread bogus investment schemes or spread false information about a company

Credit card fraud

- With the electronic commerce rapidly becoming a major force in nation economies.
- it offers rich pickings for criminals prepared to undertake fraudulent activities.
- In U.S.A. the ten most frequent fraud reports involve undelivered and online services; damaged, defective, misrepresented or undelivered merchandise; auction sales; pyramid schemes and multilevel marketing and of the most predominant among them is credit card fraud. Something like more than half a billion dollars is lost to consumers in card fraud alone.

Publishing of false digital signature

- According to Section 73 of the I.T. Act 2000, if a person knows that a digital signature certificate is erroneous in certain particulars and still goes ahead and publishes it, is guilty of having contravened the Act.
- He is punishable with imprisonment for a term that may extend to two years or with fine of a lakh or with both.

Making available digital signature for fraudulent purpose

- This is an offence punishable under Section 74 of the Act, with imprisonment for a term that may extend to two years or with fine of two lakh rupees or with both.
- Alteration and destruction of digital information
- The corruption and destruction of digital information is the single largest menace facing the world of computers.
- This is introduced by a human agent with the help of various programmes which have been described in detail below as follows:

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- Virus just as a virus can infect the human immunity system there exist programs which, can destroy or hamper computer systems.
- A computer virus is a programme designed to replicate and spread, generally with the victim being oblivious to its existence.
- Computer viruses spread by attaching themselves to programmes like word processor or spreadsheets or they attach themselves to the boot sector of a disk.
- When an infected file is activated or when the computer is started from an infected disk, the virus itself is also executed.

Pornography on the Net

- The growth of technology has flip side to it causing multiple problems in everyday life. Internet has provided a medium for the facilitation of crimes like pornography.
- Cyber porn as it is popularly called is widespread. Almost 50% of the web sites exhibit pornographic material on the Internet today.

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- Pornographic materials can be reproduced more quickly and cheaply on new media like hard disks, floppy discs and CD's.
- The new technology is not merely an extension of the existing forms like text, photographs and images.
- Apart from still pictures and images, full motion video clips and complete movies are also available.

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- Another great disadvantage with a media like this is its easy availability and accessibility to children who can now log on to pornographic web-sites from their own houses in relative anonymity and the social and legal deterrents associated with physically purchasing an adult magazine from the stand are no longer present.
- Furthermore, there are more serious offenses which have universal disapproval like child pornography and far easier for offenders to hide and propagate through the medium of the internet.

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- The Information and Technology Act 2000 makes the publishing of information which is obscene in electronic form punishable as under:
- "Whoever publishes or transmits or causes to be published in the electronic form, any material which is lascivious or appeals to the prurient interest or if its effect is such as to tend to corrupt persons who are likely, having regard to all relevant

IT Act 2000 salient features.

- The Information Technology Act, 2000 was notified on Oct 17, 2000.
- it is the Law that deals with Law-breaking and electronic commerce in India.
- In 1996, the international organization Commission on International Trade Law (UNCITRAL) adopted the model Law on electronic commerce (e-commerce) to bring uniformity within the law in several countries.
- India became the 12th country to alter cyber law once it passed the information Technology Act, 2000.
- Primary draft was created by the Ministry of Commerce, Government of India .

Objectives of the Act

- The Information Technology Act, 2000 provides legal recognition to the electronic commerce transactions.
- This also involves the utilization of alternative's to a paper-based technique of communication and knowledge storage to facilitate Better electronic filing of documents with the government agencies.
- Further, this act amended the Indian legal code 1860, the Indian proof Act 1972, the Bankers' Books proof Act 1891, and the bank of India Act 1934.

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- Grant legal recognition to any or all transactions done via electronic exchange. Exchange of information or alternative electronic communication or e-commerce,
- Offer legal recognition to digital signature for the authentication of any data or matters requiring legal authentication
- Facilitate the Electronic filing of documents with Government agencies and conjointly departments.

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- Facilitate the electronic storage of information.
- offer legal sanction and conjointly facilitate the electronic transfer of funds between banks and money Establishments.
- Grant legal recognition to bankers under the Proof Act, 1891, and also the bank of India Act, 1934, for keeping the books of accounts in electronic kind.

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- **Explain the penalties and adjudication under IT ACT 2000,2015,2018**
- Penalties, Compensation and Adjudication under IT ACT 2000 are
 - Section 43 – Penalty and Compensation for damage to computer, computer system.
- If any person without permission of the owner or any other person who is in-charge of a computer, computer system or computer network is accessed or any unauthorized work is liable to pay damages by way of compensation to the person so affected.

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- Section 43A – Compensation for failure to protect data.
- Where a body corporate, possessing, dealing or handling any sensitive personal data or information in a computer resource which it owns, controls or operates, is negligent in implementing and maintaining reasonable security practices and procedures and thereby causes wrongful loss or wrongful gain to any person, such body corporate shall be liable to pay damages by way of compensation, not exceeding five crore rupees, to the person so affected.

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- Section 44 – Penalty for failure to furnish information or return, etc.
- If any person who is required under this Act or any rules or regulations made there under to – Furnish any document, return or report to the Controller or the Certifying Authority, fails to furnish the same, he shall be liable to a penalty not exceeding one lakh and fifty thousand rupees for each such failure;

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- Section 65 – Tampering with Computer Source Documents
- If any person knowingly or intentionally conceals, destroys code or alters or causes another to conceal, destroy code or alter any computer, computer program, computer system, or computer network, he shall be punishable with imprisonment up to three years, or with fine up to two lakh rupees, or with both.
- Section 66 Computer Related Offences
- If any person, dishonestly, or fraudulently, does any act referred to in section 43, he shall be punishable with imprisonment for a term which may extend to two three years or with fine which may extend to five lakh rupees or with both.

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- Section 67 – Punishment for publishing or transmitting obscene material in electronic form
- Whoever publishes or transmits or causes to be published in the electronic form, any material which is lascivious shall be punished on first conviction with imprisonment of either description for a term which may extend to two three years and with fine which may extend to five lakh rupees and in the event of a second or subsequent conviction with imprisonment of either description for a term which may extend to five years and also with fine which may extend to ten lakh rupees.

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- Section 69 – Powers to issue directions for interception or monitoring or decryption of any information through any computer resource.
- If the government, subscriber or intermediary or any person who fails to assist the agency referred to in sub-section (3) shall be punished with an imprisonment for a term which may extend to seven years and shall also be liable to fine.
- Section 71 – Penalty for misrepresentation
- Whoever makes any misrepresentation to, or suppresses any material fact from, the Controller or the Certifying Authority for obtaining any license or Electronic Signature Certificate, as the case may be, shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

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- Section 72 – Breach of confidentiality and privacy
- Any person who, in pursuance of any of the powers conferred under this Act, rules or regulations made there under, has secured access to any electronic record, book, register, correspondence, information, document or other material without the consent of the person concerned discloses such electronic record, book, register, correspondence, information, document or other material to any other person shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

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- Section 73- Penalty for publishing electronic Signature Certificate false in certain particulars.
- No person shall publish a Electronic Signature Certificate unless such publication is for the purpose of verifying a digital signature created prior to such suspension or revocation Any person who contravenes the provisions shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

- Section 74 – Publication for fraudulent purpose:
- Whoever knowingly creates publishes or otherwise makes available a Electronic Signature Certificate for any fraudulent or unlawful purpose shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

- Section 75 – Act to apply for offence or contraventions committed outside India
- Subject to this Act shall apply also to any offence or contravention committed outside India by any person irrespective of his nationality.

- Section 77A and B – Compounding of Offences.
- Offences with three years imprisonment to be cognizable notwithstanding anything contained in Criminal Procedure Code 1973, the offence punishable with imprisonment of three years and above shall be cognizable and the offence punishable with imprisonment of three years shall be bail able

- Section 78- Power to investigate offences.
- Notwithstanding anything contained in the Code of Criminal Procedure, 1973, a police officer not below the rank of Inspector shall investigate any offence under this Act.