FINAL NEW COURSE - L.M.R

Strategic Cost Management & Performance Evolution
CASE STUDY PRACTICAL

BY
CA Dani Khandelwal

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ABOUT CA DANI KHANDELWAL

Prof. Dani Khandelwal is a Chartered Accountant and practicing as an International Cost Consultant. He is a well-known faculty among CA students on Cost Accountancy, Operations Research and Financial Management. His teaching method is so simplified that over a period the cost accountancy subject is known amongst the students as Dani Ki Costing.

PUBLISHED FOR

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Summary
Theory Book
CHAPTER -1

INTRODUCTION TO STRATEGIC COST MANAGEMENT

SUMMARY

- The basic aim of Strategic Cost Management is to help the organization to achieve the cost leadership to get the sustainable competitive advantage. A well-conceived cost reduction strategy enables the managers to capture maximum value in the form of direct savings. It is an effective way of reducing cost, increasing revenue and facilitating survival in the competitive world.

- Strategic cost management should be inherent to each stage of a product’s life cycle, i.e. during the development, manufacturing, distribution and during the service lifetime of a product.

- Strategic cost management can be referred to as “the managerial use of cost information explicitly directed at one or more of the four stages of strategic management” viz. Formulating strategies, communicating those strategies throughout the organization, Implementation the strategies, and implementing controls to monitor the success of objectives.

- Composition of Strategic Cost Management – Cost Driver Analysis, Strategic Positioning Analysis and Value Chain Analysis.

- The Strategic Positioning of an organization includes the devising of the desired future position of the organization on the basis of present and foreseeable developments, and the making of plans to realize that positioning.

- Value Chain Analysis is a strategic tool used to analyze internal firm activities. Its goal is to recognize, which activities are the most valuable (i.e. are the source of cost or differentiation advantage) to the firm and which ones could be improved to provide competitive advantage. Cost leadership can be achieved through techniques like target costing. Product differentiation is directly proportional to market movements and changing business requirements.

- Benefits of Strategic Cost Management – Strategic elements become more explicit, cost data is used to develop alternate measures to gaining sustainable competitive Advantages, clear understanding of the company’s cost structure, managerial use of cost information explicitly directed to the four stages of strategic management – formulation, communication, implementation and control, overall recognition of cost relationships among the activities in the value chain.

- Porter describes the value chain as “internal processes or activities a company performs to design, produce, market, deliver and support its product.” He further stated that “a firm’s value chain and the way it performs individual activities are a reflection of its history, its strategy, its approach of implementing its strategy, and the underlying economics of the activities themselves.”

- Classification of Business Activities for Value Chain Analysis –

  Primary Activities: Primary activities are directly involved in transforming inputs into outputs and delivery and after-sales support to output. They include Inbound Logistics, Operations, Outbound Logistics, Marketing & Sales and Post-Purchase Service.
Support Activities: Support Activities are the activities which support primary activities. They are handled by the organization’s staff functions and include Procurement, Technology Development, Human Resource Management, Firm Infrastructure.

- **Differentiation Advantage** - It occurs when customers perceive that a business unit’s product offering (defined to include all attributes relevant to the buying decision) is of higher quality, involves fewer risks and/or outperforms competing product offerings.

- **Low-Cost Advantage** - A firm enjoys a relative cost advantage if its total costs are lower than the market average. This relative cost advantage enables a business to do one of the two things: price its product or services lower than its competitors in order to gain market share and still maintain current profitability; or match with the price of competing products or services and increase its profitability.

- **The Value Chain Approach for Assessing Competitive Advantage** -
  Internal Cost Analysis - to determine the sources of profitability and the relative cost positions of internal value-creating processes.
  Internal Differentiation Analysis - to understand the sources of differentiation (including the cost) within internal value-creating processes; and
  Vertical Linkage Analysis - to understand the relationships and associated costs among external suppliers and customers in order to maximize the value delivered to customers and to minimize cost.

- **Strategic Frameworks for Value Chain Analysis** - Value chain analysis requires a strategic framework or focus for organizing internal and external information, analyzing information, and summarizing findings and recommendations. Three useful strategic frameworks for value chain analysis are,
  - Industry Structure Analysis,
  - Core Competencies,
  - Segmentation Analysis.

- **Porter’s Five Forces Model** - Under this model, the profitability of an industry or market measured by the long-term return on investment of the average firm depends largely on five factors that influence profitability. These are:
  - Bargaining power of buyers;
  - Bargaining power of suppliers;
  - Threat of substitute products or services;
  - Threat of new entrants; and
  - Intensity of competition/Degree of rivalry.

- **Value Shop Model** - This approach is designed to solve customer problems rather than creating value by producing output from an input or raw materials. Value shops mobilize resources (say: people, knowledge or money) to solve specific problems such as curing an illness or delivering a solution to a business problem.
  The model has the same support activities as Porter’s Value Chain but the primary activities are described differently as Problem finding and acquisition, Problem solving, Choosing among solutions, Execution and control/evaluation.
  The management in a value shop focuses on areas like problem and opportunity assessment, resource mobilization, Project management, Solutions delivery, outcome measurement, and learning.
CHAPTER - 2

MODERN BUSINESS ENVIRONMENT

- SUMMARY

- **Cost of Quality** – It is the sum of the costs related to prevention and detection of defects and the costs incurred due to occurrences of defects. Cost of quality consists of the Prevention Cost, Appraisal Cost, Internal Failure Cost and External Failure Cost.

- **Total Quality Management** – TQM aims at improving the quality of organizations outputs, including goods and services, through continual improvement of internal practices. The plan – do - check – act (PDCA) cycle describes the activities a company needs to perform in order to incorporate continuous improvement in its operation. 6C’s – Commitment, Culture, Continuous Improvement, Co-operation, Customer Requirements and control.

- **Business Excellence Model** – The EFQM Excellence Model provides an all-round view of the organization and it can be used to determine how these different methods fit together and complement each other. Based on the needs of the organization, this model can be used with other tools of improvement to attain sustainable excellence.

- **Theory of Constraints** – The theory of constraints focuses on revenue and cost management when faced with bottlenecks. It advocates the use of three key measures – Throughput, Investments and Operating expenses. The objectives of management can be expressed as increasing throughput, minimizing investment and decreasing operating expenses.

(a) Throughput = (Sales Revenue – Unit Level Variable Expenses)/ Time
(b) Investment is money associated with turning materials into Throughput and do not have to be immediately expensed.
(c) Operating expense is the money spent in turning Investment into Throughput and therefore, represents all other money that an organization spends.
(d) Five step method of improving performance – Identify System Bottlenecks, Exploit the Constraint, Subordinate and Synchronize to the Constraint, Increase Bottleneck efficiency and Capacity, Repeat the process as and when a new constraint arises.

- **Throughput Accounting Ratio** = \( \frac{\text{Throughput per bottleneck minute}}{\text{Factory cost per bottleneck minute}} \)

- **Supply Chain Management** – The term supply chain can be referred to as the entire network of organizations working together to design, produce, deliver and service products.

(a) Types of Supply Chain based on forecasted demand and actual demand are push and pull supply chain.

(b) **Key to Supply Chain Processes** –

   - Customer Relationship Management – Understanding customer needs and providing them with the best possible solution to assist in customer retention and driving sales growth.
o **Customer Service Management** – Better customer service gives higher customer retention. Customer Service is the source of customer information.

o **Demand Management Style** – Flexibility in manufacturing process to react to changing market is a must. Orders processed under JIT with minimum lot sizes have shorter cycle time and thus increases efficiency in meeting customer demands.

o **Order Fulfillment** – Timely fulfillment of customer demands.

o **Manufacturing Flow Management** – This process manages activities related to planning, scheduling, and supporting manufacturing operations, such as work-in-process storage, handling, transportation, and time phasing of components, inventory at manufacturing sites, etc.

o **Supplier Relationship Management** – When selecting the key suppliers, weightage should be given to Supplier capabilities of innovation, quality, reliability and costs/price reductions and agility to reduce risk factors.

o **Product Development and Commercialization** – Customers and suppliers must be integrated into the product development process in order to reduce the time to market. For the firms to have a competitive edge, as product life cycles get shorter, the appropriate products and services should be developed and successfully launched at even shorter time schedules.

o **Returns Management** – Returns management is necessary in case of both upstream and downstream supply chain flow for optimum utilization of resources and reduction in cost of repairs and renewal.

o **Customer Account Profitability** – Profitability associated with each customer. What companies fail to do is measure profit at the most meaningful and controllable level, the customer level. Understanding the underlying components of cost and addressing specific causes of poor profitability will significantly improve bottom-line performance.

o **Customer Life Time Value** - It is the net present value of the projected future cash flows from a lifetime of customer relationship.

(c) **Benefits of Supply Chain Management** – Tangible benefits such as inventory reduction, personnel reduction, productivity improvement; order management improvement, financial cycle improvement etc. Further it results in information visibility, new/improved processes, customer responsiveness, standardization-flexibility & globalization of business performance.

- **Gain Sharing Arrangements** – Gain sharing is an approach to the review and adjustment of an existing contract, or series of contracts, where the adjustment provides benefits to both parties.

- **Outsourcing** – Outsourcing (also sometimes referred to as “contracting out”) is a business practice used by companies to reduce costs or improve efficiency by shifting tasks, operations, jobs or processes to another party for a span of time.
CHAPTER - 3
LEAN SYSTEM AND INNOVATION

- SUMMARY

- Lean System is an organized method for waste minimization without sacrificing productivity within a manufacturing system. Lean implementation emphasizes the importance of optimizing work flow through strategic operational procedures while minimizing waste and being adaptable.

- Just in Time – System whose objective is to produce or to procure products or components as they are required by a customer or for use, rather than for stock. just-in-time system Pull system, which responds to demand, in contrast to a push system, in which stocks act as buffers between the different elements of the system such as purchasing, production and sales.

Features of JIT
Material – handling cost are reduced.
Labour idle time gets reduced.
JIT creates urgency for eliminating defects as quickly as possible.
The company can respond to customer demand faster.
Carefully selected suppliers capable of delivering high quality materials in a timely manner directly at the shop – floor, reducing the material receipt time.
Pre- requisites of JIT – Low variety of goods, Vendor reliability, Good communication, Demand stability, TQM, Defect free materials, Preventive maintenance.
Impact of JIT System –Wastes costs like unnecessary levels of obsolete inventory, defective products, rework, etc, overhead costs like material handling, facilities, and quality inspection costs of staff, equipment, fixed assets, facilities, and rent associated with the warehouse etc. get eliminated and When a company achieves a higher level of product quality, along with ability to deliver products on the dates required, customers may be willing to pay a premium.

Performance Measurement in JIT –
  a) Machine utilization measurements can be discarded under JIT environment.
  b) No piece rate tracking for each employee.
  c) No direct labour efficiency tracking.
  d) Set up time reduction.
  e) Customer complaints should be investigated immediately.
  f) Scrap generation is reduced.
  g) Track of full cost of quality which comprises defect control costs, failure costs, and the cost of lost sales.
  h) Highest possible degree of customer service.
  i) Continuous improvement through new ideas.

Backflushing in a JIT System

(a) Back flushing requires no data entry of any kind until a finished product is completed. At that time the total amount finished is entered into the computer system, which multiplies it by all the components listed in the bill of materials for each item produced. This yields a lengthy list of components that should have been used in the production process and which are subtracted from the beginning inventory balance to arrive at the amount of inventory that should now be left on hand.
(b) Problems with back flushing- Incorrect production reporting, Incorrect scrap reporting, Impossible lot tracing, Inaccurate inventory records.

- **Kaizen Costing** –
  a) Kaizen means continual improvement. The kaizen strategy aims to involve workers from multiple functions and levels in the organization in working together to address a problem or improve a particular process.
  
  b) **Kaizen costing principals** – gradual improvements in the existing situation, at an acceptable cost, collective decision making and application of knowledge, no limits to the level of improvements that can be implemented, setting standards and then continually improving these standards to achieve long-term sustainable improvements, focus on eliminating waste, improving systems, and improving productivity, involves all employees and all areas of the business.

- **5 S’s** – It explains how a work space should be organized for efficiency and effectiveness by identifying and storing the items used, maintaining the area and items, and sustaining the new order. 5 S include Sort, Set in Order, Shine, Standardise, Sustain.

- **Total Productive Maintenance** – Total Productive Maintenance (TPM) is a system of maintaining and improving the integrity of production and quality systems. TPM helps in keeping all equipment in top working condition so as to avoid breakdowns and delays in manufacturing processes.
  
  a) TPM performance is measured by Overall Equipment Effectiveness (OEE) measure which needs to quantify losses due to equipment failure, set-ups, idle time, stoppages, reduction in speed, reduction in yield, quality defects and network.
  
  b) Performance x Availability x Quality = OEE%

- **Cellular Manufacturing** – In the assembly line multiple cells are used. Each cell comprises of one or more machines which accomplish a certain task. The product moves from one cell to the next, each station completing part of the manufacturing process. U-shaped design is given to these cells because this allows for the supervisor to move less and have the ability to more readily watch over the entire process.
  
  a) **Goals of cellular manufacturing** – move quickly, make wide variety of similar products, very less wastes.
  
  b) **Advantages** – Flexibility in operations, changes easy to make, variety of product scaling, minor changes can be easily and quickly implemented, conducted by logic so reduces flow time, flow distance, floor space, inventory, handling, scheduling transactions, and scrap and rework, production and quality controls facilitated, improves group cohesiveness among employees.
  
  c) **Limitations** – Decrease in production flexibility, difficulty in realignment of cells in case of decrease in demand, changes in flow may be very costly.

- **Six Sigma** – It is quality improvement technique whose objective to eliminate defects in any aspect that affects customer satisfaction. The premise of Six Sigma is that by measuring defects in a process, a company can develop ways to eliminate them and practically achieve “zero defects”. The standard measure of Six Sigma is 34 errors per million.
- **Process Innovation** – Process innovation means the implementation of a new or significantly improved production or delivery method (including significant changes in techniques, equipment and/or software).

- **Business Process Reengineering** – Business Process Reengineering (BPR) is “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed.”

  a) **Key components of BPR** – Fundamental rethinking of business processes, Radical redesign if we had to start the business afresh, Achieving dramatic improvements in performance measurements, Reengineering focuses on end-to-end business processes rather than on the individual activities that comprise the processes.

  b) **Principles of BPR** – Organize around outcomes, not tasks, are those who need the results of a process perform the process, Integrate the processing of information into the work process that produces the information, Treat geographically dispersed resources as though they were centralized, Line parallel activities instead of integrating their results, Put the decision point where the work is performed, and build controls into the process, Capture information once and at the source.
CHAPTER - 4
COST MANAGEMENT TECHNIQUES

SUMMARY

Cost Reduction and Cost Control – Cost Control involves a comparison of actual with the standards or budgets, to regulate the actual costs. Cost Reduction is the achievement of real and permanent reduction in unit cost of products manufactured.

Scope of Cost Reduction – Cost Reduction efforts can be put in the following areas – a) Product Design, b) Organization, c) Factory lay-out Equipment, d) Production Plan Programme and Method. It may be extended to administrative, selling and distribution methods, personnel management, purchase and material control, financial management and other services.

Target Costing – A structured approach to determining the cost at which a proposed product with specified functionality and quality must be produced, to generate a desired level of profitability at its anticipated selling price.

In Target costing, we first determine what price we think the consumer will pay for our product. We then determine how much of a profit margin we expect and subtract that from the final price. The remaining amount left is what is available as a budget to be used to create the product.

Advantages of Target Costing – Proactive approach, top-to-bottom commitment to process and product innovation, helps to create a company’s competitive future with market-driven management for designing and manufacturing products that meet the price required for market success, control systems to support and reinforce manufacturing strategies and to identify market opportunities that can be converted into real savings to achieve the best value rather than simply the lowest cost, proper planning, enhances employee awareness and empowerment, partnership with suppliers, Minimize non-value-added activities, lowest cost value added activities, reduced time to market.

Main Features of Target Costing System – Integral part of the design and introduction of new products, target selling price determined using various sales forecasting techniques, target selling price helps in establishment of target production volumes, given the relationship between price and volume, helps in establishing cost reduction targets, fair degree of judgement is needed where the allowable cost and the target cost differ, a series of intense activities required to translate the cost challenge into reality.

Components of Target Costing System – Value Analysis is a planned, scientific approach to cost reduction which reviews the material composition of a product and production design so that modifications and improvements can be made which do not reduce the value of the product to the customer or to the user.
Value Engineering is the application of value analysis to new products. Value engineering relates closely to target costing as it is cost avoidance or cost reduction before production.

The initial value engineering may not uncover all possible cost savings. Thus, Kaizen Costing is designed to repeat many of the value engineering steps for as long as a product is produced, constantly refining the process and thereby stripping out extra costs.

Further, Target Costing System is based on involving representatives of all the Value Chain such as suppliers, agents, distributors and existing after-sales service in the target costing system. Issues dealt with during a Value Analysis/Value Engineering review
- Can we eliminate functions from the production process?
- Can we eliminate some durability or reliability?
- Can we minimize the design?
- Can we design the product better for the manufacturing process?
- Can we substitute parts?
- Can we combine steps?
- Can we take supplier’s assistance?
- Is there a better way?

A mix of all the value engineering steps noted above must be applied to each product design to ensure that the maximum permissible cost is safely reached.

- **Problems with Target Costing** – Development process can be lengthened to a considerable extent, large amount of mandatory cost cutting can result in finger-pointing in various parts of the company, difficult to reach a consensus on the proper design, requires the development of detailed cost data, reduce the quality of products due to the use of cheap components which may be of inferior quality, requirement of a good team leader.

- **Most Useful Situations for Target Costing** – Assembly-oriented industries, diversified product lines, factory automation through use of technologies, having shorter product life cycles, implementing JIT, value engineering, etc.

- **Implementing a Target Costing System** – Create a Project Charter, Obtain a Management Sponsor, Obtain a Budget, Assign a Strong Team Manager, Enroll Full-Time Participants, Use Project Management Tools, Fullest possible support for target costing by all available means-management, money and staff. Only when all these elements are in place and concentrated on the goals at hand does a target costing program have the greatest chance for success.

- **Pareto Analysis** – Pareto Analysis is a rule that recommends focus on the most important aspects of the decision making in order to simplify the process of decision making. It is based on the 80:20 rule where it is believed that 80% of the profits of an organization relates to 20% of the customers. It helps to clearly establish top priorities and to identify both profitable and unprofitable targets.

- **Usefulness of Pareto Analysis** - Prioritize problems, goals, and objectives to identify root causes, define key quality improvement programs, Select key customer relations and service programs, employee relations improvement programs, and key performance improvement programs, proper allocation of physical, financial and human resources.

- **Application of Pareto Analysis** – Pricing of a Product, Customer Profitability Analysis, ABC Analysis- Stock Control, Application in Activity Based Costing.
- **Life Cycle Costing** – Life Cycle Costing involves identifying the costs and revenue over a product’s life i.e. from inception to decline. The life cycle of a product consists of four stages viz., Introduction; Growth; Maturity; Saturation and Decline.

- **Benefits of Product Life Cycle Costing** – Results in earlier actions to generate revenue or to lower costs than otherwise might be considered, more accurate and realistic assessment of revenues and costs, promote long-term rewarding in contrast to short-term profitability rewarding, provides an overall framework for considering total incremental costs over the entire life span of a product, provides long-term picture of product line profitability, enhance the control of manufacturing costs, traces research and design and development costs etc.

- **Environmental Management Accounting [EMA]** – EMA is the process of collection and analysis of the information relating to environmental cost for internal decision making. EMA identifies and estimates the costs of environment-related activities and seeks to control these costs. The focus of EMA is not on financial costs but it also considers the environmental cost or benefit of any decisions made.

- The major areas for the application for EMA are: Product Pricing, Budgeting, Investment Appraisal, Calculating Costs and Savings of Environmental Projects, or Setting Quantified Performance Targets.

- **Environmental Costs**
  - Environmental Prevention Costs – Pollution Control Equipment, Environmental Policy Formulation, etc.
  - Environmental Appraisal Costs – Monitoring, Testing and Inspection Costs, Reporting Costs, etc.
  - Environmental Internal Failure Costs – Cost of Recycling or Disposing of Waste or Harmful Materials, Decommissioning Costs on Project Completion, etc.
  - Environmental External Failure Costs – Carbon Emissions and the Adverse Impact these have on the Global Climate.

- **Identification of Environmental Costs** – Four management accounting techniques for the Identification and Allocation of Environmental Costs are – Input/Outflow Analysis, Flow Cost Accounting, Activity Based Costing and Lifecycle Costing.

  **Input-Output Analysis**-
  This technique records material inflows and balances this with outflows on the basis that, what comes in, must go out. By accounting for outputs in this way, both in terms of physical quantities and, at the end of the process, in monetary terms too, businesses are forced to focus on environmental costs.

  **Flow Cost Accounting**-
  Classic material flows are recorded as well as material losses incurred at various stages of production.

  **Life Cycle Costing**-
  Lifecycle costing considers the costs and revenues of a product over its whole life rather than one accounting period. Therefore, the full environmental cost of producing a product will be taken into account.
Activity Based Costing (ABC) –
ABC distinguishes between environment-related costs, which can be attributed to joint cost centres, and environment-driven costs, which tend to be hidden on general overheads.

- **Need to manage Environmental Costs** - A ‘carbon footprint’ (as defined by the Carbon Trust) measures the total greenhouse gas emissions caused directly and indirectly by a person, organization, event or product, environmental costs are becoming huge and such significant costs need to be managed, regulation is increasing worldwide at a rapid pace, with penalties for non-compliance also increasing accordingly.

- **Advantages of EMA** - Improved Revenues (Production of new products or services meeting the environmental needs or concerns of customers can lead to increased sales) and Cost Reductions (Simple improvements in processes can lead to significant costs savings).

- **Disadvantages of EMA** - Increases in Costs for legal and regulatory requirements, Costs of Failure if there is poor environmental management.

### Life Cycle Characteristics

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<td><strong>Objectives</strong></td>
<td>Create product awareness &amp; trial</td>
<td>Maximize market share</td>
<td>Maximize profits while defending market share</td>
<td>Reduce expenditures &amp; milk the brand</td>
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<td><strong>Sales</strong></td>
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<td>Rapidly rising</td>
<td>Peak sales</td>
<td>Declining sales</td>
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<td>Negative</td>
<td>Rising profits</td>
<td>High profits</td>
<td>Declining profits</td>
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<tr>
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<td>Early adopters</td>
<td>Middle majority</td>
<td>Laggards</td>
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<tr>
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<td>Growing number</td>
<td>Steady number beginning to decline</td>
<td>Declining number</td>
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## Strategies

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<td><strong>Product</strong></td>
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<td>Offer product extensions, service &amp; warranty</td>
<td>Diversify brands and models</td>
<td>Phase out weak items</td>
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<td><strong>Price</strong></td>
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<td>Price to match or beat competitors</td>
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<td><strong>Advertising</strong></td>
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<td>Stress on brand differences and benefits</td>
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<td>Build more intensive distribution</td>
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<td><strong>Sales Promotion</strong></td>
<td>Use heavy sales promotion to entice trial</td>
<td>Reduce to take advantage of heavy consumer demand</td>
<td>Increase to encourage brand switching</td>
<td>Reduce to minimal level</td>
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CHAPTER - 5
COST MANAGEMENT FOR SPECIFIC SECTOR

- SUMMARY

- Thermal Power is main source of electricity in India. Fuel sources include – coal, natural gas, neptha, etc. The various types of energy sources include hydro- electricity, solar power, wind power, nuclear power, etc.

- Key Risks in Power Sector – Highly Capital Intensive, Deficiency of Coal Supply.

- Electricity is generated at power plants and moves through a complex system, sometimes called the grid, of electricity substations, transformers, and power lines that connect electricity producers and consumers.

- Features of Power Sector – Limited number of Suppliers, Complexity in determination of tariff, stakeholders include consumers, industries, government, regulators, and investors, Continuous growing demand of electricity, Flexible Cost allocation, Distribution loss and inefficiency gaps between generation and consumption of electricity, In-disciplined consumer, Continuous network between generators, transmitters, distributors, and consumers, public sector undertakings, impact on national treasury through energy subsidies.

- Application of Cost Management Techniques in Power Sector- Determining prices and regulating tariffs, Developing a flexible cost allocation, Distribution loss and inefficiency gap analysis, Multi-dimensional costing calculations, Powerful analysis and reporting.

- Value Chain Analysis – Value creation in all the activities both inbound and outbound activities undertaken by the power company starting from electricity generation to the point of supply or distribution of the electricity supply.

- Agricultural Sector Features – Fragmented and unorganized industry, lack of understanding of costs, potential of working collaboratively, target costing techniques for price determination, imbalance of power across the supply chain.

- Cost Management in Agricultural Sector – Activity Based Costing technique is being increasingly accepted for the purpose of cost management as it is adjustable costing technique, faster and more accurate, and enables a more detailed cost analysis.

- IT Sector Features – Complex operating structure, difficult implementation of cost allocation methods.
CHAPTER - 6
DECISION MAKING

LEARNING OUTCOMES
After studying this chapter, you will be able to:

- Analyse short-term decisions
- Analyse product mix decisions, including circumstances where linear programming methods are needed to identify ‘optimal’ solutions
- Analyse information to assess risk and its impact on short-term decisions
- Discuss the nature of risk and uncertainty and the attitudes to risk by decision makers
- Evaluate information to support project appraisal
- Analyse information for use in long-term decision making (including consideration of tax, inflation and other factors)
- Compare and Contrast alternative approaches proposed to address business challenges or opportunities for a given entity.

SUMMARY

- CVP analysis involves analyzing the interrelationships among revenues, costs, levels of activity, and profits. It helps in planning, controlling decisions and evaluating decisions.

- Conventional CVP analysis assumes volume based measures. Activity based costing provides a more accurate determination of costs because it separately identifies and traces non-unit based costs to products rather than combining them in a pool of fixed costs as volume based approach does.

- The Break-even can then be expressed as follows:
  \[
  \text{Break-even units} = \frac{[\text{Fixed costs} + (\text{Setup cost} \times \text{Number of Setups}) + (\text{Engineering Cost} \times \text{Number of Engineering Hours})]}{(\text{Price} \text{ – Unit Variable Cost})}
  \]

- A comparison of the ABC break-even point with the conventional break-even point reveals two important differences. First, the fixed costs differ. Some costs previously identified as being fixed may actually vary with non-unit cost drivers, in this case setups and engineering hours. Second, the numerator of the ABC break-even equation has two non-unit-variable cost terms: one for batch-related activities and one for product-sustaining activities.

- Cost-Volume-Profit analysis suffers from a limitation that it does not consider adjustments for risk and uncertainty. A possible approach by which uncertainty can be incorporated into the analysis is to apply normal distribution theory. The analysis can be changed to include fixed cost, variable cost and selling price as uncertain variables. The effect of treating these variables as uncertain will lead to an increase in the standard deviation because the variability of the variable cost, fixed cost and selling price will add to the variability of profits.

- To apply CVP analysis in service and non-profit organizations, we need to focus on measuring their output, which is different from tangible units sold by manufacturing and merchandising companies.
• **Short run decision making** – Based on relevant costs, short run in nature, referred to as tactical decisions, choosing among alternatives, often have long run consequences, immediate or limited time frame, small scale actions that serve a larger purpose.

• For a cost to be relevant to a decision it must be
  - A future cost, i.e. related to the future.
  - A differential cost, i.e. its level must be different for each of the alternatives under consideration.
Accordingly, only future costs can be relevant to decisions. However, to be relevant, a cost must not only be a future cost but must also differ from one alternative to another. If a future cost is the same for more than one alternative, it has no effect on the decision. Such a cost is irrelevant cost.

• Non-financial information which a company should focus that would turn out to be advantageous while making decisions for a company are: Quality, Employee Satisfaction, Customer Satisfaction, Corporate Social Responsibility, Environmental Factors, Intellectual Property, Intangible Assets, Competitor’s Movements, Brand Name.

• Ethics are moral principles that guide the conduct of individuals. By their behavior and attitude, managers set the company culture.

• **Guideline for Ethical Conduct**: Identify an ethical decision by using personal ethical standards of honesty and fairness, identify the consequences of the decision and its effect on others, consider obligations and responsibilities to those that will be affected by decision, make a decision that is ethical and fair to those affected by it.

• **Decision Making Model** – Define the problem, identify alternatives, eliminating unfeasible alternatives, identify costs & benefits of each alternative, examine total relevant costs, benefits of each alternative, assess non-financial factors and ethical issues, select alternative with greatest overall benefit.

• **Some Common Applications** –
  (a) **Out Sourcing Decision** – A ‘make or buy’ decision requires incremental analysis.

  If incremental cost savings + opportunity costs < incremental costs, reject the outsourcing, unless qualitative factors fiercely impact the decision.

  If incremental cost savings + opportunity costs > incremental costs, accept the outsourcing unless qualitative factors fiercely impact the decision.

  If incremental cost savings + opportunity costs are = incremental costs, focus primarily on qualitative factors to evaluate the decision.

  (b) **Sell or Further Process** – To decide either to sell a component/product/raw material as it is or alternatively process it further by incurring additional expenses usually in the case of joint products. Only the incremental costs and revenues of the further process are relevant. The joint process costs are irrelevant – they are already ‘sunk’ at the point of separation.

  (c) **Minimum Pricing Decisions** – Relevant where there is a lot of intense competition, surplus production capacity, clearance of old inventories, getting special orders and/or improving market share of the product. The minimum price should be set at the incremental costs of manufacturing, plus opportunity costs (if any).
(d) **Keep or Drop Decisions** – The decision is based on whether or not the segment’s revenue exceeds the costs directly traceable to the segment, including any direct fixed costs.

(e) **Special Order Decisions** – Whether a special priced order should be accepted or rejected. Relevant if the firm is operating below its maximum productive capacity. Price discrimination laws require that firms sell identical products at the same price to competing customers in the same market. This law does not apply to – Noncompeting customers from the same market and Potential customers in markets not ordinarily served.

(f) **Product Mix Decision** – Other things being the same the product which yields the highest contribution is best one to produce. But, if there is shortage or limited supply of certain other resources which may act as a key factor like for example, the machine hours, then the contribution is linked with such a key factor for taking a decision.
CHAPTER - 7
PRICING DECISION

- **SUMMARY**

- **Theory of Price** – The basic approach in most of the micro-economic theory (theory of the individual firm and its relation to other firms) defines the term optimum price as that price which yields the maximum profits (excess of total revenues over total costs). It also assumes that the firm takes into consideration the position of demand and cost functions and that the firm produces one product.

- **Pricing Model** – Pricing model is a mathematical model which uses economic theory of pricing.
  
  (i) As per economic theory of pricing, Profit is Maximum at a level of output where Marginal Revenue (MR) is equal to Marginal Cost (MC). This model determines the level of production up to which production can be continued.

  (ii) The Basic Price Equation, which is used to determine the Price where Profit is Maximum.

  The equation is written as:

  \[ P = a - bQ, \]

  Where,

  \[ P = \text{Price}, \]

  \[ b = \text{Slope of the Demand curve, Calculated as} \left( \frac{\text{Change in Price}}{\text{Change in Quantity}} \right), \]

  \[ Q = \text{Quantity Demanded}, \]

  \[ a = \text{Price at which demand is zero}. \]

  (iii) The Marginal Revenue equation is written as:

  Marginal Revenue (MR) = \( P = a - 2bQ \)

- **Pricing under Different Market Structures** –
  
  (i) **Perfect Competition** – Under this type of market, firm has no pricing policy of its own as the sellers are price takers (i.e. it has to accept the price determined by the market) and sell as much as they are capable of selling at the prevailing market price.

  (ii) **Monopoly** – Under the monopoly, a firm is a price setter i.e. it can fix any price but here also the pricing is done taking elasticity of demand for the product into consideration. That means though the seller/producer can fix any price but it will go for the price where demand for the product and consequent profit will be maximum.

  (iii) **Monopolistic Competition** – Under monopolistic condition, consumers may buy more at a lower price than at higher price. The profit can be maximized by equating marginal revenue with marginal cost.

  (iv) **Oligopoly** – The oligopolistic firm, while determining the price for its product, consider not only the demand for the product but also the reactions of the other firms in the industry to any action or decision it may take.

- **Pricing Strategies of Oligopolies** –
  
  (i) **Predatory Pricing** – Keeping price artificially low, and often below the full cost of production.
(ii) **Limit-Pricing** – Strategy to discourage entrants, which is also called entry forestalling price.

(iii) Collusion with rivals and raise price together, but this may attract new entrants.

(iv) **Cost-Plus Pricing** – A straightforward pricing method, where a firm sets a price by calculating average production costs and then adding a fixed mark-up to achieve a desired profit level.

**Non-Price Strategies** – Non-price competition is the favored strategy for oligopolists because price competition can lead to destructive price wars. Strategies like improving Quality & after Sales Servicing, Spending on Advertising, Sponsorship, and Product Placement etc.

- **Pricing Policy** – Although cost is an important aspect of pricing, consumer demand and competitive environment are frequently far more significant in pricing decisions.

- Creating value for the customers is one of the important objectives of a firm. A firm makes all the efforts to create value and to achieve this it formulates its marketing strategy in that direction.

- **Price Sensitivity** – It measures the customer’s behavior to the change in price of a product. Nine factors that contribute to price sensitivity are Unique Value Effect, Substitute Awareness Effect, Difficult Comparison Effect, Total Expenditure Effect, End-Benefit Effect, Shared Cost Effect, Sunk Investment Effect, Price Quality Effect and Inventory Effect.

- Controlled experimentation for measuring price sensitivity – In this method, customers are offered different brands at different prices and customer’s responses are obtained. Then the company’s brand prices are changed and customer’s response at each price level is recorded. The price at which demand for the product starts declining is the level where price sensitivity begins and based on the response level, sensitivity can be measured. It depends on the nature of the product and buyer characteristics.

- **Price Customization** – Price customization is done in various ways –
  (i) Based on product line, (ii) Based on customer’s past behavior, (iii) Based on demographics and (iv) Based on time differential.

- **Pricing Methods** –
  (i) **Cost-Based Pricing Method** – estimate the cost of product & fix a margin of profit. The term ‘cost’ here means Full Cost at current output and wages level since these are regarded as most relevant in price determination.

  Pricing based on total costs is subjected to two limitations viz arbitrary allocation of inter-departmental overheads and estimation of normal output.

  In order to avoid these complications, Variable Costs which are considered as relevant costs are used for pricing, by adding a markup (to include fixed costs allocation also).

  (ii) **Competition-Based Pricing Method** – When a company sets its price mainly on the consideration of what its competitors are charging, its pricing policy under such a situation is called competitive pricing or competition-oriented pricing.
**Going Rate Pricing** – It is a competitive pricing method under which a firm tries to keep its price at the average level charged by the industry. The use of such a practice of pricing is especially useful where it is difficult to measure costs.

**Sealed Bid-Pricing** – Competitive pricing dominates in those situations where firms compete on the basis of bids, such as original equipment manufacturer and defense contract work.

(iii) **Value** – Based Pricing Method – to price the product on the basis of customer’s perception of its value.

Objective Value or True Economic Value (TEV) –

\[ TEV = \text{Cost of the Next Best Alternative} + \text{Value of Performance Differential} \]

- **Strategic Pricing of New Products** – A new product is analyzed into three categories for the purpose of pricing –
  (i) **Revolutionary Product** – Revolutionary product may enjoy the premium price as a reward for its innovation and taking first initiative.

  (ii) **Evolutionary Product** – The evolutionary products may be priced taking cost-benefit, competitor, and demand for the product into account.

  (iii) **Me-too Product** – The me-too products are price takers as the price is determined by the market mainly by the competitive forces.

- While preparing to enter the market with a new product, management must decide whether to adopt a skimming or penetration pricing strategy.

  (i) **Skimming Pricing** – It is a policy of high prices during the early period of a product’s existence. This can be synchronized with high promotional expenditure and in the later years the prices can be gradually reduced.

  (ii) **Penetrating Pricing** – means a pricing suitable for penetrating mass market as quickly as possible through lower price offers. The company may not earn profit by resorting to this policy during the initial stage. Later on, the price may be increased as and when the demand picks up.

- Predatory Pricing (loss leading) is the practice of selling a product or service at a very low price, intending to drive competitors out of the market or create barriers to entry for potential new competitors.

- **Price Adjustment Policies** –
  (i) Distributor’s Discounts – It means price deductions that systematically make the net price vary according to buyer’s position in the chain of distribution.
  (ii) Quantity discounts are price reductions related to the quantities purchased.
  (iii) Cash discounts are price reductions based on promptness of payment.
  (iv) Price Discrimination – charging different prices and it takes various forms according to whether the basis is customer, product, place or time.
  (v) Geographic Pricing – Pricing policies may be established whereby the buyer pays all the freight expense, the seller bears the entire cost, or the seller and buyer share this expense. The strategy chosen can influence the geographic limits of a firm’s market, locations of
its production facilities, sources of its raw materials, and its competitive strength in various geographic markets.

- **Pricing and Product Life Cycle**
  
  (i) **Introduction Stage** – Skimming Policy with high prices, but low profit margin due to high fixed costs. Growth Stage – Reduce price to penetrate market further. Maturity Stage – Price to match or beat competitor. Decline Stage – Cut price if not repositioning.

  (ii) **Introduction Stage** – Penetration Policy to enter the market and gain a high share quickly or to prevent competitors from entering. Maturity Stage – Retain higher prices in some market segments. Decline Stage – Some increases in prices may occur in the late decline stage.

- **Pricing of Services (Issues)** – Each service transaction is likely to have distinct pricing structure, accommodation of the intangible costs that a customer may have to bear with, pricing regulated by government or collective groups like trade associations in certain specific sectors.

- If the selling price is below the total cost but above the marginal cost the contribution will leave an under-recovery of fixed expenses. If the product is sold at marginal cost, the loss will be there to the extent of fixed expenses. If sold at a price less than the marginal cost, the loss will be greater than fixed expenses.

- In periods of recession, a firm may sell its articles at a price less than the total cost but above the marginal cost for a limited period.

- It may also be justifiable to sell the product at a price below marginal cost for a limited period provided the materials are of perishable nature, stocks are huge and market prices have fallen, reduction results in increased sales of other products having larger profit margin.

- Differential selling prices, which is above, the marginal cost but below the total cost is resorted to in order to absorb surplus capacity. This can be done in two ways either dumping of branded products in another market above marginal cost, of the firm may produce and sell a branded article, say product A, which covers the entire fixed overheads and use the surplus capacity to produce another product B, which may be sold at a price above its marginal cost.
CHAPTER - 8
PERFORMANCE MEASUREMENT AND EVALUATION

- **SUMMARY**

- Responsibility Accounting is the collection, summarization, and reporting of financial information where individual managers are held accountable for certain costs, revenue or assets of the firm.

- **Linking CSFs to KPIs and Corporate Strategy –**
  - **Critical Success factors** – Critical Success Factors are elements tied to the strategy of business and they represent objectives that businesses are trying to achieve, as a corporation, as a department, or as a business unit.

  - Key Performance Indicators are a consequence of critical success factors – they represent the ‘how’. Having outlined ‘what’ businesses want to achieve, a company must subsequently define sets of measures and associated targets in such a way that achieving those targets will translate into successful completion of a CSF.

  - Each critical success factor should have a KPI associated with it. A single Critical Factor can also have more than one KPI, if need be. The objectives, CSFs, and KPIs together represent a chain of links that together deliver a company’s strategic goal, by breaking down that strategic vision into a set of quantifiable targets.

- Pure financial performance measures are Return on Investment, Residual Income, Residual Income, Economic Value Added and Shareholder Value Added.

- **Triple Bottom Line (TBL)** – TBL expands traditional accountancy reporting systems, looking at social and environmental performance, rather than simply financial performance.

- **Non-Financial Performance Measures** like quality, reliability, flexibility, etc. are also required to be measured to access the success of any department or organization apart from costs, revenues and profits.

- **Integration of Financial and Non-Financial Measures** –
  - Balanced Scorecard – Balanced Score Card is a set of financial and non-financial measures relating to a company’s critical success factors. It is an approach which provides information to management to assist in strategic policy formulation and achievement. It emphasizes the need to provide the user with a set of information which addresses all relevant areas of performance in an objective and unbiased manner. As a management tool, it helps companies to assess overall performance, improve operational processes and enable management to develop better plans for improvements. It offers managers a balanced view of their organization upon which they can base real change. **Advantages of Balanced Scorecard** – Management’s focus on strategy and vision, single management report, comprehensive picture of business operations, easy communication of organizational goals, provides strategic feedback and learning.

  Major Components of Balanced scorecard – Customer Perspective i.e how do customers see us, Internal Perspective i.e what must we excel at, Innovation and Learning Perspective i.e can we continue to improve and create value, Financial Perspective i.e. how do we look to our shareholders.
Process of Creating a Balanced Scorecard – Identify Vision i.e. where and organization is going, Identify Strategies i.e. how an organization is planning to go there, Identify CSFs and Perspectives i.e. what we have to do well in each perspective, Identify Measures which will ensure that everything is going in the expected way, Evaluate i.e. ensuring what we are measuring is right, Create Action Plan, Follow up and Manage i.e. what should be the structure of the reports and who should have the authority to look at it.

- **Performance Pyramid** – The Performance Pyramid is also known as Strategic Measurement and Reporting Technique. They view businesses as performance pyramids. The attractiveness of this framework is that it links the business strategy with day-to-day operations.

- **Benefits of Performance Pyramid** – Develops agreed measures, clarifies the objectives of the organization, greater understanding of process, helps in comparison between departments, promotes accountability to stakeholders, helps in setting targets, measures the effectiveness of the organization.

- **Problems Performance Pyramid** – Tunnel Vision i.e. undue focus on measurements, Sub-Optimization i.e. focus on one measurement, Myopia i.e. focus on short term measures, Misrepresentation of Data, Misinterpretation of Data, Ossification i.e. representing out dated data.

- **Building Block Model** – Fitzgerald and Moon have developed an approach to performance measurement in business services that is based on the three building blocks of dimensions, standards and rewards. Dimensions are the goals, i.e. the CSFs for the business and suitable measures must be developed to measure each performance dimension and include competitiveness, Financial Performance, Quality of Service, Flexibility, Resource Utilisation, Innovation. CSFs could be relative market share, in case of Competitiveness, turnover growth in case of Financial Performance, product reliability in case of Quality of Service, etc. Standards Set, i.e. the KPIs, should have ownership, availability, awareness and Rewards should be motivating base on clarity of standards set and linked to controllable factors. Advantages of building block model – All the key determinants of success are measured, Targets are set in such a way that staff are engaged and motivated.

- **Performance Prism** – The Performance Prism is an approach to performance management which aims to effectively meet the needs and requirements of all stakeholders. This is in contrast with the performance pyramid which tends to concentrate on customers and shareholders and is also in contrast with value based management, which prioritizes the needs of shareholders.

**Features** – Starts with stakeholders rather than strategies of the organization, recognizes that stakeholder satisfaction is the key to organization success.

**Steps of Performance Prism** – Focus on who are the stakeholders and what are the needs and wants of the stakeholders, plan the strategies required to fulfill the wants and needs of the stakeholders, identify the processes required for satisfying the above strategies, identify the capabilities for operating and enhancing the process and take into account what contribution does the management needs from its stakeholders.
Benefits of Performance Prism – Allows organizations to develop strategies, business processes and measures geared to the specific needs of all important stakeholder groups, enable an organization to more directly address the risks and opportunities in its business environment, facilitate the communication and implementation of strategy relative to each stakeholder.

- Disadvantages to Non-financial Performance Measures – Multiple measures create conflict in the short term can also be time consuming, unlike accounting measures, non-financial data are measured in many ways, there is no common denominator.

- Benchmarking Schemes – Benchmarking is a technique for continuous improvement in performance. It involves comparing a firm’s products, services or activities against other best performing organizations, either internal or external to the firm. The objective is to find out how the product, service or activity can be improved and ensure that the improvements are implemented.

  o Types of Benchmarking – Competitive Benchmarking involves the comparison of competitors products, processes and business results with own, Strategic Benchmarking by examining the long term strategies, Global Benchmarking through which distinction in international culture, business processes and trade practices across companies are bridged and their ramification for business process improvement are understood and utilized, Process Benchmarking involves the comparison of an organization critical business processes and operations against best practice organization that performs similar work or deliver similar services, Functional Benchmarking look to benchmark with partners drawn from different business sectors or areas of activity to find ways of improving similar functions or work processes, Internal Benchmarking involves seeking partners from within the same organization, for example, from business units located in different areas, External Benchmarking involves seeking help of outside organization that are known to be best in class.

  In intra group benchmarking the groups of companies in the same industry agree that similar units within the cooperating companies will pool data on their process. The processes are benchmarked against each other at or operational level. ‘Improvement task forces’ are established to identify and transfer best practice to all members of the group. In inter-industry benchmarking a non-competing business with similar process is identified and asked to participate in a benchmarking exercise.

  o Goals of Benchmarking – Performance improvements and returns based on efficiency, cost savings and new revenues, effort to shift the culture of a company to be more customer oriented and results focused.

  o Process of Benchmarking – Planning, Collection of Data and Information, Analysing the Findings, Recommendations, Monitoring and Reviewing.

  o Pre-requisites for Successful Benchmarking – Senior management support, clearly defined objectives, appropriate scope of work, availability of sufficient resources, clarity of organization picture among the benchmarking teams, right skills and competencies of the benchmarking team, reasons for benchmarking are informed to all the stakeholders.

  o Difficulties in implementation of Benchmarking – Time Consuming, delegation of authority not possible, resistance from employees, costly, non-identification of necessary improvements may result in wastage of time and resources.

- **Performance Measurement in NFPs**
  - Value for money is interpreted as providing an economic, efficient and effective service (3 E’s).
  - Multiple and diverse objectives – NFP organizations are unlikely to have an objective of maximization of shareholder wealth. Instead they are seeking to satisfy the particular needs of their members or sections of society, which they have been set up to benefit.
CHAPTER - 9
DIVISIONAL TRANSFER PRICING

SUMMARY

- Divisions could be departments within a company or group companies of a parent organization.

- Inter divisional transfers could involve transfer or goods and services, payments for intangibles like intellectual property for usage of brand, patent in the form of royalty fee or license fee, or inter-divisional loans at specified interest rates.

- Valuation of inter-divisional transfer of goods and services in the management accounting system is called Transfer Pricing.

Utility of Transfer Pricing – Performance Evaluation (profit accountable divisions), Employee Engagement and Compensation (motivates employees in improving divisional profits), Resource Allocation (optimization of resources and critical like make or buy), Taxation and Profit Remittance (impact earnings of multi-national companies affecting the over-all tax burden for the company as well as the profits that may need to be repatriated to its head office).

- Fair Value – Transfer pricing is often associated with the term “arms-length” price. This implies that the price for inter-divisional transfer has to be fair and competent enough as if dealing with a third party. Fair value from a business perspective depends on how each division finds the price compatible with its profit targets.

Transfer Pricing Methods and Transfer Pricing Decision in Different Scenarios-

i) Market Price – Transfer price is based on market price of goods or services similar to the ones transferred internally within divisions. The transfer can be recorded at the external market price, adjusted for any costs that can be saved by internal transfer e.g. selling and distribution expenses, packaging cost.

Advantages – Unbiased, less-ambiguous, more objective divisional performances.
Disadvantages – Fluctuating market prices may not be suitable, non-availability of market prices in case of intermediate products, manipulative pricing strategies.
Behavioral Consequences – The supplying division will have to compete with the outside vendor that may lead to cost competitive operations. The purchasing division has more alternatives to choose from. However, the purchasing division must ensure that quality of the goods is also comparative.
Shared Profit Relative to Cost Method – Cost incurred by each division indicates the value it has added to the product cost that is finally used to arrive at the selling price of the final product. The primary advantage of this method is that it allocates profit based on the proportion of value addition to the product in terms of cost.
ii) **Cost Price Method** – Cost based pricing models are based on the internal cost records of the company. They may be used when the management wants to benchmark performance with the cost targets set within the company or may be an alternative when market prices for the goods cannot be determined due to lack of comparable market.

**Advantages** – Benchmarking to budget, easy availability of information.

**Disadvantages** – Multiple ways of interpreting costs like variable cost, standard cost, full cost, find little incentive to lower the cost of production by adopting cost efficient methods since its passed on to the receiving department.

a) **Variable Cost** – Transfer price is recorded marginal cost required to produce one additional unit.

**Advantages** – useful when the supplying division has excess capacity, while the purchasing division enjoys the benefit of a lower price compared to the market.

**Disadvantages** – No fixed cost or mark-up is allowed to be charged to the purchasing division.

**Behavioral Consequences** – Profit evaluation is centralized at the entity level. Therefore, the supplying division may have little incentive to find measures for making cost efficient. Non-recovery of fixed costs would de-motivate the supplying division.

b) **Standard Cost** – Transfer price is recorded at a predetermined cost, which is based on budgets and certain assumptions regarding factors of productions like capacity utilization, labour hours etc.

**Advantages** – Performance evaluation against budgeted costs, variance analysis.

**Disadvantages** – Profit performance measurement is centralized.

**Behavioral Consequences** – Budgeted costs are generally based on historic records. Therefore, little incentive exists to make costs more efficient to improve profitability.

c) **Full Cost** – Transfer price is based on full product cost. It includes cost of production plus a share of other costs of the value chain like selling and distribution, general administrative expense, research and development etc.

**Advantages** – Supplying division will not show a loss.

**Disadvantages** – Since mark-up cannot be charged on internal transfers, the supplying division does not record any profit on these sales.

d) Full cost plus Mark-up – Transfer price is based on full product cost plus a mark-up. Mark-up could be a percentage of cost or of capital employed.

**Advantages** – Full incentive to supplying division.

**Disadvantages** – The purchasing division may bear a share of the selling expenses although none was incurred for such internal sales.

**Behavioral Consequences** – The problem with using full cost as a basis for transfer pricing is that it distorts the company’s cost structure while making decisions.
iii) **Bargained or Negotiated Pricing** – Managers of the purchasing and supplying divisions independently negotiate and arrive at a mutually agreeable transfer price.

**Advantages** – Autonomy to decide whether to purchase (or sell) from its sister unit or source then from (or to) external market.

**Disadvantages** – Requires sufficient external information to be available regarding the external market price, terms of trade etc. Internal cost information must also be shared in order to negotiate a reasonable price.

**Behavioral Consequences** – Provides for autonomy in decision making at the same time promotes goal congruence through efficient performance of the concerned divisions

- **Divisional Conflict** –

**Dual Pricing** – The supplying division records transfer price by including a normal profit margin thereby showing reasonable revenue. The purchasing division records transfer price at marginal cost thereby recording purchases at minimum cost.

**Advantages** – Allows better evaluation of each division’s performance, improves co-operation between divisions, promoting goal congruence and reduction of sub-optimization of resources.

**Disadvantages** – Complicate the records, artificial profits can be used only for internal evaluations

- **Two Part Pricing System** –
  Transfer Price
  
  = Marginal Cost of Production + a Lump-Sum Charge (two part to pricing).

  Lump-Sum charge enables the recovery of some portion of the fixed cost of the supplying division. Therefore, while the supplying division can show better profitability, the purchasing division can purchase the goods at a lower rate compared to the market price.

- **Transfer Pricing and Goal Congruence** –
  a) Minimum Transfer Price (determined by the supplying division)
     
     = Additional Outlay Cost per unit + Opportunity Cost per unit.

     Additional Outlay Cost
     
     = Marginal Cost + Any Additional Incidental Costs incurred by the supplying division e.g. storage, transportation etc.

  b) Maximum Transfer Price (determined by the purchasing division)
     
     = Lower of Net Marginal Revenue and the External Buy-in Price

  Net Marginal Revenue
  
  = Marginal Revenue (i.e. Selling Price P.U) – Marginal Cost to Purchasing Division

- **Transfer Pricing Different Capacity Levels** –
  When the supplying division has excess capacity, the range for transfer pricing would be

  a) Minimum Transfer Price
     
     = Marginal Cost P.U

  b) Maximum Transfer Price
     
     = Lower of Net Marginal Revenue and the External Buy-in Price

  When the supplying division operates at full capacity, the range for transfer pricing would be

  a) Minimum Transfer Price
     
     = Marginal Cost P.U + Opportunity Cost P.U

  b) Maximum Transfer Price
     
     = Lower of Net Marginal Revenue and the External Buy-in Price
- **Transfer Pricing Decision** – Different Demand Levels: while catering to different levels of demand, any change in cost should also be accounted for to calculate transfer pricing. The general rule for minimum and maximum range of transfer price applies here too.

- International Transfer Pricing – Taxation, profit repatriation and transfer prices are critical considerations to the senior management of the multi-national companies. Multi-national organizations try to maximize profits by using transfer pricing as a tool to reduce the tax impact on earnings. Where, the supplying division is in a country with higher tax rate, the transfer price will be set lower in-order to reflect higher earnings (resulting from lower purchase cost) in the purchasing division, which has a lower tax rate. Likewise, supply from lower tax rate countries may be priced higher, in order to reflect higher earnings for that unit, thereby reducing the tax impact.
CHAPTER -10

STRATEGIC ANALYSIS OF OPERATING INCOME

- SUMMARY

- Strategic Profitability Analysis – Operating Profit of a firm is affected by various components which are responsible for changes in the revenue and costs. Majorly there are three components

  (i) Growth Component measures the change in the quantity of output sold. The growth component of the change in the operating income measures the increase/decrease in revenue and in costs due to selling more/ less quantity units from the previous period.

  (ii) Price Recovery Component of change in operating income measures the changes in the revenue and costs solely due to changes in prices.

  (iii) Productivity Component measures the change in the operating income due to changes in the product mix and/or yield of inputs as compared with the last year. This component uses current year’s prices of input to measure the changes in costs only.

- Profitability Analysis Through Activity Based Costing –

  (i) Activity Based Costing (ABC) which has become an important aspect of manufacturing or service organizations can be defined as a methodology that means the cost and performance of activities, resources and cost objects.

  (ii) It acts as an aid to management evaluation and decision making.

  (iii) In service sector, direct costs are generally low and overheads tend not to be volume related or capable of being easily attributed to product/service/customer being supplied. ABC helps cost to identify more easily and managed more effectively.

  (iv) The resource consumption by different products, customers or segments of the business is more accurately measured, activity-based profitability analysis is likely to provide more useful information to management.

- Direct Product Profitability (DPP) – DPP “used primarily within the retail sector, DPP involves the attribution of both the purchase price and other indirect costs (for example distribution, warehousing and retailing) to each product line. Thus, a net profit, as opposed to a gross profit, can be identified for each product. The cost attribution process utilizes a variety of measures (for example warehousing space and transport time) to reflect the resource consumption of individual products.”

- Benefits of DPP – Cost analysis, pricing decisions, management of stores and warehouse space, rationalization of product ranges.

- Direct Product Profitability Statement – Indirect costs, for DPP may be analysed into basic cost categories as follows:

  (i) Overhead Cost: This is incurred through an activity that is not directly linked to a particular product.
(ii) Volume Related Cost: The cost is incurred in relation to the space occupied by products. This includes storage and transport costs.

(iii) Product Batch Cost: This cost is often a time-based cost. If product items (that is a number of identical products which are handled together as a batch) are stocked on shelves a labour time cost is incurred.

(iv) Inventory Financing Costs: This is the cost of tying up money in stock and is the cost of the product multiplied by interest rate per day or per week.

Direct Product Profit can be derived as shown below:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>XX</td>
</tr>
<tr>
<td>Less: Cost of Goods Sold</td>
<td>XX</td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td><strong>XX</strong></td>
</tr>
<tr>
<td>Less: Direct Product Costs</td>
<td></td>
</tr>
<tr>
<td>(Warehouse, Transportation, Store etc.)</td>
<td></td>
</tr>
<tr>
<td><strong>Direct Product Profit</strong></td>
<td><strong>XX</strong></td>
</tr>
</tbody>
</table>

- **Customer Profitability Analysis** – In many organizations, it is just as important to cost customers as it is to cost products. Different customers or groups of customers differ in their profitability. Not all customers cost the same to serve even if they require the same products. Some customers may be located a long way from the factory and transport may cost more.

- **Benefits of Customer Profitability Analysis** – Identification of profitable customers/non-profitable customers, provides a basis for constructive dialogue between buyer and seller to improve margins.

- **Activity Based Costing in Advanced Manufacturing Environment** – In advanced manufacturing environment, where support function overheads constitute a large share of total costs, ABC provides more realistic and accurate product costing.

- **Activity Based Cost Management (ABM)** – A discipline that focuses on the management of activities as the route to improving the value received by the customer and the profit achieved by providing this value. This discipline includes cost driver analysis, activity analysis, and performance measurement.

- **Value-Added Activities (VA)** – The VA activities are those activities which are indispensable in order to complete the process. The customers are usually willing to pay (in some way) for these services. Eg. polishing furniture by a manufacturer dealing in furniture is a value-added activity.

- **Non-Value-Added Activities (NVA)** – The NVA activity represents work that is not valued by the external or internal customer. NVA activities do not improve the quality or function of a product or service, but they can adversely affect costs and prices. Non-Value Added activities create waste, result in delay of some sort, add costs to the products or services and for which the customer is not willing to pay. Moving materials and machine set up for a production run are examples of NVA activities.
- **Difference between ABC and ABM** – The ABC refers to the technique for determining the cost of activities and the output that those activities produce. ABM refers to the management philosophy that focuses on the planning, execution and measurement of activities as the key to competitive advantage.

- **Activity Based Budgeting (ABB)** – Activity Based Budgeting is a process of planning and controlling the expected activities for the organization to derive a cost-effective budget that meets forecast workload and agreed strategic goals.
CHAPTER - 11
BUDGETARY CONTROL

SUMMARY

- Budgetary Control is “Systematic control of an organization’s operations through establishment of standards and targets regarding income and expenditure, and a continuous monitoring and adjustment of performance against them.”

- Characteristics those are common to businesses with effective budgetary control include clarity of marginal responsibility, challenging and achievable business targets, establishment of data collection, analysis and reporting techniques, accountability of individual managers, shorter time periods, timely variance reports, timely actions to prevent variances.

- Feedback and Feed-forward Control – Feedback Control refers to ‘Measurement of differences between planned outputs and actual outputs achieved, and the modification of subsequent action and/or plans to achieve future required results. Feedback control is an integral part of budgetary control and standard costing systems.’
  - A feedback system would simply compare the actual historical results with the budgeted results.
  - Feed-forward Control is defined as the ‘forecasting of differences between actual and planned outcomes and the implementation of actions before the event, to avoid such differences.’

- Behavioral aspects of Budgetary Controls – Many of the conflicts arise due to the human nature of a budgetary control system. Managers do not always follow organizational goals, they do not always think long term, they may be wary of moving away from the plan etc. This provides a conflict between many of the goals of a budgetary control system which needs to be considered at a strategic level when implementing such a system.

- Budget Slack – Budget affects the attitudes and behavior of managers and used to motivate the managers. Unrealistic demanding targets tend to affect manager’s performance adversely. Allowing managers to set their own targets will introduce slack targets. This helps satisfy one of the purposes of budgeting in that it can aid motivation. But it can have a detrimental impact on the other purposes such as distorting the evaluation of actual performance if managers incorporate ‘slack’ into the budget in order to make it easier to achieve.

  - Budget level that motivates the best level of performance may not be achievable. In contrast, the budget that is expected to be achieved motivates a lower level of performance as managers no longer aspire to meet the budget target.

- Participation in Budget Setting Process – Budgets can be prepared centrally and subordinates have little influence on the target setting. This called top down budget or imposed style approach. The benefit of top down approach is that it can be produced quickly and involve less management time than other options. However, there are significant risk of inaccurate budgets being set that are also not acceptable to the subordinate managers. An alternative to top-down approach is for the subordinate managers to participate in the preparation of their own budgets and then these budgets to be reviewed by senior management. This is called bottom up approach (sometimes referred participative approach). Participation must be used selectively; but if it is used in the right circumstances, it has an enormous potential for encouraging the commitment to
organizational goals, improving attitudes towards budgeting system, and increasing subsequent performance.

- **Circumstances Where Top-Down Budget Setting is Preferable** – Personality traits of the participation limiting the benefits of participation, lack of managerial motivation at individual level, highly programmable processes in the system, homogeneous units produced in stable environment.

- **Limitations of Traditional Budgets** – time consuming, costly, constrain flexibility and responsiveness, barrier to changes, contradictory, no focus on strategies, concentration on cost reduction and not value creation, developed too frequently, based on guess work, raises departmental barriers, discourage knowledge sharing, demotivate employees.

- **Beyond Budgeting** – An idea that companies need to move beyond budgeting because of the inherent flaws in budgeting especially when used to set contracts. It is argued that a range of techniques, such as rolling forecasts and market related targets, can take the place of traditional budgeting.

- **Characteristics of Beyond Budgeting** – The rolling budgets may incorporate KPIs based on the balanced scorecard which is linked to the organization strategy, benchmarking with external players may help better evaluation, focus on improving future results rather than dwelling on post poor performances, allows operational managers to react to changing environment, encourages culture for innovation, flexible and do not rely on obsolete figures.

- **Suitability for Beyond Budgeting** – Rapidly changing business targets, organization using TQM/ continuous improvement management techniques, organizations under business process reengineering.

- **Benefits of Beyond Budgeting model** – Internal rivalry among managers is reduced as focus shifts on competitors, motivating employees, proper delegation of authority of operational managers, customer-oriented teams, fast and open information across organization.

- **Steps essential for implementing Beyond Budgeting** – Define the Case for Change and Provide an Outline Vision; Be Prepared to Convince the Board; Get Started; Design and Implement New Processes; Train and Educate People; Rethink the Role of Finance; Change Behavior-New Processes, Not Management Orders; Evaluate the Benefits and Consolidate the Gains.
CHAPTER - 12
STANDARD COSTING

- **SUMMARY**

- **Planning & Operational Variances** – A Planning Variance simply compares a revised standard to the original standard. An Operational Variance simply compares the actual results against the revised amount. Operating variances would be calculated after the planning variances have been established and are thus a realistic way of assessing performance. Controllable Variances are those variances which arise due to inefficiency of a cost centre/department. Uncontrollable Variances are those variances which arise due to factors beyond the control of the management or concerned department of the organization.

- **Variance Analysis in Activity Based Costing** – Variance analysis can be applied to activity costs (such as setup costs) to gain insight into why actual activity costs differ from activity costs in the static budget or in the flexible budget. Interpreting cost variances for different activities requires understanding whether the costs are output unit-level, batch level, product sustaining, or facility sustaining costs.

- **Variance Analysis in Advanced Manufacturing Environment/ High Technology Firms** – In the high-technology environment, large part of manufacturing process is computerized. Many costs that once were largely variable have become fixed, most becoming committed fixed cost. Some high technology manufacturing organizations have found that the two largest variable costs involve materials and power to operate machines. In these companies, the emphasis of variance analysis is placed on direct materials and variable manufacturing overhead. For these firms labour variances may no longer be meaningful because direct labour is a committed cost, not a cost expected to vary with output.

- **Impact of Learning Curve** – Learning curve is a geometrical progression, which reveals that there is steadily decreasing cost for the accomplishment of a given repetitive operation, as the identical operation is increasingly repeated. The amount of decrease will be less and less with each successive unit produced. Automated manufacturing is unlikely to have much variation or to display a regular learning curve. In less-automated processes, however, where learning curves do occur, it is important to take the resulting decline in labour hours and costs into account in setting standards, determining prices, planning production, or setting up work schedules.

- **Investigation of Variances** – An investigation should only be undertaken if the benefits expected from the investigation exceeds the costs of searching for and correcting the source of the variance. Interpretation may suggest possible cause of variances but investigation must arrive at definite conclusions about the cause of the variance so that action to correct the variance can be effective. Relevant Cost Approach to Variance Analysis is used if inputs are limited. Failure to use limited inputs properly leads not only to increased acquisition cost but also to a lost contribution. Therefore, it is necessary to consider the lost contribution in variance analysis. When this approach is used, price or expenditure variances are not affected.

- **Standard Costing in Service Sector** - Use of activity based costing can provide a constructive basis for variance analysis of overheads in service sector organizations.
- **McDonaldization** – Breaking tasks into smallest possible units and rationalizing them to find the single most efficient method for completing each task. All other tasks are discarded. Standards can be more accurately set and assessed. Helpful in services like hairdressing, dentistry, or opticians’ services.

- **Behavioral Issues of Standard Costing** – Focus on short term, sub-optimal behavior of the employees like incorporation of budget slacks. These issues can be overcome by involving employees in budget preparation and taking a long-term view of organization strategy incorporating various qualitative and quantitative measures.

- **Possible Interdependence between Variances** – Using cheaper materials will result in a favorable material price variance, but using the cheaper material in production might increase the wastage rate (adverse material usage) and cause a fall in labour productivity (adverse labour and variable overhead efficiency). A more expensive mix of materials (adverse mix variance) might result in higher output yields (favorable yield variance). Using more experienced labour to do the work will result in an adverse labour rate variance, but productivity might be higher as a result (favorable labour and variable overhead efficiency).

  Standard costing may be inappropriate in the modern production environment because: products may not be standardized, get outdated quickly, automation of production, emphasis on continuous improvement, delay in problem solving.
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