

## **PERIYAR UNIVERSITY**

**(NAAC 'A++' Grade with CGPA 3.61 (Cycle - 3))**

**State University - NIRF Rank 56 - State Public University Rank 25)**

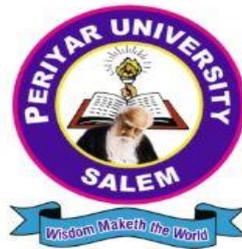
**SALEM - 636 011, Tamil Nadu, India.**

**CENTRE FOR DISTANCE AND ONLINE EDUCATION**

**(CDOE)**

**MASTER OF COMMERCE**

**SEMESTER - II**



**CORE IV - STRATEGIC COST MANAGEMENT**

**(Candidates admitted from 2024 onwards)**

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## Syllabus

### STRATEGIC COST MANAGEMENT

**UNIT I**

Introduction to Strategic Cost Management (SCM) – Need for SCM – Differences between SCM and Traditional Cost Management - Value Chain Analysis: Meaning and steps - Quality Cost Management: Meaning of Quality and Quality Management – Cost of Quality – Indian Cost Accounting Standard 21 on Quality Control - Introduction to Lean System – Benefits of Lean System – Just in Time (JIT) – Kaizen Costing.

**UNIT II**

Cost Management Techniques: Cost Control: Meaning and Prerequisites - Cost Reduction: Meaning and Scope – Differences between Cost control and cost reduction - Pareto Analysis: Meaning, importance and applications -Target Costing: Meaning, steps and Principles – Life Cycle Costing: Meaning, Strategies for each stage of product life cycle, Benefits – Learning Curve: Meaning, Learning curve ratio and applications.

**UNIT III**

Activity Based Cost Management: Concept, Purpose, Stages, Benefits, Relevance in Decision making and its Application in Budgeting – Practical problems.

**UNIT IV**

Transfer Pricing: Meaning, Benefits, Methods: Pricing based on cost, Market price on transfer price, Negotiated pricing and Pricing based on opportunity costs – Practical Problems.

**UNIT V**

Agriculture Sector: Features, Cost Structure, Cost Management, Tools to measure the performance, Minimum Support Price and International Perspective – Information Technology Sector: Features, Cost Structure, Cost Management and International Perspective.

<b>UNIT – 1 Introduction to Strategic Cost Management</b>
Introduction to Strategic Cost Management (SCM) – Need for SCM – Differences between SCM and Traditional Cost Management - Value Chain Analysis: Meaning and steps - Quality Cost Management: Meaning of Quality and Quality Management – Cost of Quality – Indian Cost Accounting Standard 21 on Quality Control - Introduction to Lean System – Benefits of Lean System – Just in Time (JIT) – Kaizen Costing.

### Strategic Cost Management

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## UNIT OBJECTIVES

This unit aims to equip learners with a comprehensive SCM gives a clear understanding of the firm's cost structure in search for sustainable competitive advantage through cost reduction. It is the managerial use of cost information explicitly directed at one or more of the four stages (strategy formulation, communicating the strategy, implementing and controlling) of strategic management. Overall recognition of the cost relationships among the activities in the value chain, and the process of managing those cost relationships to the attainment of firm's strategic objectives are the main focal point of SCM.

### SECTION 1.1: STRATEGIC COST MANAGEMENT

#### 1.1.1 Introduction

Strategic cost management (SCM) deals with measuring and managing costs and aligning them to the business strategy. The cost and management accounting information thus developed would help managers to understand and implement the strategy, diagnosis the performance and influence behaviour and decisions. It is the analysis of cost in a broader context, where the strategic elements become more conscious, explicit, and formal. Cost data is used to develop superior strategies in route to gaining sustainable competitive advantage. SCM gives a clear understanding of the firm's cost structure in search for sustainable competitive advantage through cost reduction. It is the managerial use of cost information explicitly directed at one or more of the four stages (strategy formulation, communicating the strategy, implementing and controlling) of strategic management. Overall recognition of the cost relationships among the activities in the value chain, and the process of managing those cost relationships to the attainment of firm's strategic objectives are the main focal point of SCM. This standard provides a basic guideline of SCM which is not an exclusive one and it should be read in conjunction with other relevant standards.

#### 1.1.2 Strategic Cost Management

Strategic cost management is the application of cost management techniques sothat they improve the strategic position of a business as well as control costs. It also involves integrating cost information with the decision-making framework to support the overall organisational strategy. It is not limited to controlling costs but using cost information for management decision making. The basic aim of Strategic Cost

Management is to help the organisation to achieve the sustainable competitive advantage through product differentiation and cost leadership.

### 1.1.3 Components of Strategic Cost Management

Strategic Cost Management primary revolves around three business themes

1. Strategic Positioning Analysis
2. Cost Driver Analysis
3. Value chain Analysis

#### Strategic Positioning Analysis

Strategic Positioning Analysis is a company's relative position within its industry matters for performance. Strategic positioning reflects choices a company makes about the kind of value it will create and how that value will be created differently than rivals. The following factors affect the strategic position of a company

- I. External Environment
- II. Organisation Values, Culture and Systems
- III. Internal Environment (Resources and Competencies)  
{External environment can be analysed using models like PESTEL (Political, Economic, Social, Technological, Environmental and Legal factors) and Porter's5 forces.}

#### Cost Driver Analysis

Cost is caused or driven by various factors which are interrelated. Cost is not a simple function of volume or output as considered by traditional cost accounting systems. Cost driver concept is explained in two broad ways in strategic cost management parlance – Structural cost drivers and Executional cost drivers. Structural cost drivers are the organisational factors which affect the costs of a firm's product. These factors drive costs of an organisation in varied ways. e scale and scope of operation of a company will impact the costs. Executional cost drivers are based on firm's operational decision on how the various resources are employed to achieve the goals and objectives. These cost drivers are determined by management style and policy. E-participation of workforce towards continuous improvement, importance of total quality management, efficiency of plant layout etc. are examples of executional cost drivers. A company must focus on those cost drivers which is of strategic

importance.

## Value Chain Analysis

“Value-chain analysis is a process by which a firm identifies & analyses various activities that add value to the final product” The idea is to identify those activities which do not add value to the final product/service and eliminate such non-value adding activities. The analysis of value chain helps a firm obtain cost leadership or improve product differentiation. Resources must be deployed in those activities that are capable of producing products valued by customers.

### 1.1.4 Need for SCM

The need for strategic cost management arises from several factors crucial for the success and sustainability of businesses:

1. **Competitive Pressures:** In today's globalized and highly competitive business environment, companies face constant pressure to lower prices while maintaining or improving quality. Strategic cost management enables businesses to become more efficient and cost-effective, thereby gaining a competitive edge.
2. **Profitability:** Effective cost management directly impacts profitability. By identifying and reducing unnecessary costs, businesses can improve their profit margins and financial performance, ensuring long-term viability and success.
3. **Resource Optimization:** Resources such as capital, materials, and labor are finite. Strategic cost management helps businesses optimize the utilization of these resources, ensuring that they are allocated efficiently to maximize returns and minimize waste.
4. **Market Dynamics:** Market conditions are dynamic and unpredictable. Strategic cost management allows businesses to adapt to changing market conditions by quickly adjusting their cost structures to remain profitable and responsive to customer needs.
5. **Sustainability:** Sustainable business practices are becoming increasingly

important to consumers, investors, and regulatory bodies. Strategic cost management encourages businesses to minimize waste, reduce environmental impact, and operate in a socially responsible manner, enhancing their reputation and long-term sustainability.

6. **Strategic Alignment:** Cost management efforts must be aligned with the organization's strategic objectives. By integrating cost management into the strategic planning process, businesses can ensure that cost reduction initiatives support broader strategic goals, such as market expansion, product innovation, or differentiation.
7. **Risk Mitigation:** Inefficient cost management practices can expose businesses to various risks, including financial instability, operational inefficiencies, and competitive disadvantages. Strategic cost management helps mitigate these risks by providing greater visibility and control over costs, enabling businesses to proactively address potential challenges.

Overall, strategic cost management is essential for businesses to thrive in today's dynamic and competitive business environment by optimizing resources, enhancing profitability, and aligning with strategic objectives.

### 1.1.5 Traditional Cost Management

Traditional cost management system involves allocation of costs and overheads to the production and focusses largely on cost control and cost reduction. The underlying assumption was that with reduced costs (direct) and overheads a firm could earn better profits. It involves comparing actual results with the standard expectations (typically budget or standard costs) and analysing the difference. This process is also known as variance analysis. A corrective action would be taken to ensure future outcomes are within the budgeted outcomes.

### 1.1.6 Traditional Cost Management Vs Strategic Cost Management

Traditional cost management	Strategic cost management
1. Standard cost system with normal allowance for scrap, waste, rework; zerodeflect standard is not practical	1. No allowance for scrap, waste, rework; zero defect is the concept
2. Overheadvariance analysis; maximize production volume (not quality) to absorb overhead.	2. Overhead absorption is not the key; standard costs and variance analysis are deemphasized, in general.
3. Variance analysis on raw material price; procurement from multiple suppliers to avoid unfavorable price variance; low price/low-quality raw Materials.	3. No control on raw material price; certify vendors who can deliver right quantity, right quality, and on time.
4. No emphasis on nonfinancial performance measures.	4. Heavy use of nonfinancial measures (parts-per-million defects, percentage yields, scrap, unscheduled machine down times, first-pass yields, number of employee suggestions)
5. No tracking of customer acceptance	5. Systematic tracking of customer acceptance (customer complaints, order lead time, on-time delivery, incidence of failures in customers' locations)
6. No cost of quality analysis	6. Quality costing as a diagnostic and management control tool.

### 1.1.7 Limitations of Traditional Cost Management

- Ignores Competition, Market Growth, and Customer Requirement
- Excessive Focus on Cost Reduction
- Ignores Dynamics of Marketing and Economics
- Limited Focus on Review and Improvisation
- Reactive Approach

- Short-term Outlook

### 1.1.8 Value chain analysis

The process in which a firm recognizes and analyses, all the activities and functions that contribute to the final product. It was propounded by Michael Porter (1985) to show the way a customer value assembles along the activity chain that results in the final product or service. In a nutshell, strategic cost management is not just about controlling the costs but also uses the information for managerial decision making. The fundamental objective of strategic cost management (SCM) is to gain a sustainable competitive advantage by way of product differentiation and cost leadership.

Value chain analysis is a fundamental tool in strategic cost management that helps businesses understand the sequence of activities involved in creating value for customers and identify opportunities for cost reduction and value creation at each stage. A value chain analysis shows the steps your company follows in order to provide a product or service that customers value. Designed by Michael Porter, the value chain assumes that you have the goal of providing as much value for customers as you possibly can. Ideally, every function in your company contributes some value to the end product. The total value created minus that which is reinvested in the value chain is the profit. Porter used those fundamental concepts to build a diagram that looks like this:



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The value chain is composed of three fundamental elements. **Primary chain activities**,  
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represented by vertical segments on the bottom row, contribute directly to value creation. Each **support activity** bolsters and guides the primary activities. The **profit margin** provides a measure of overall operational efficiency.

### According to Porter, primary chain activities include:

- **Inbound logistics:** Acquiring raw materials and directing them to production centers.
- **Production:** Processing raw material into a final product that has a greater value than the material does on its own.
- **Outbound logistics:** Distributing the processed product to wholesalers, retail locations, and eventually end customers.
- **Marketing and sales:** Raising awareness of the product or service, cultivating new customers, and ensuring a continuous source of revenue.
- **Service:** Providing assistance to the customer outside the purchase itself, from in-store help to regular maintenance.

### Porter's support activities, which cross and back up all primary activities, include:

- **Firm infrastructure:** A company's "corporate" functions, including executive management, accounting, and legal counsel.
- **Human resource management:** Hiring new employees, distributing compensation and benefits, and handling employee needs.
- **Technology development:** Gaining a competitive advantage by creating more efficient internal processes and new customer-facing technologies.
- **Procurement:** The company-wide structures that provide everyone with the tools and materials they need to work. All primary and support activities need supplies, but they won't all need the same ones (for example, the corporate office can't do much with raw product materials).

Note that both these primary activities and secondary activities can change when the industry provides a service instead of a physical product.

In service industries, the "raw materials" are the employees' skills and the customers' need, so processing and logistics look different. However, value chain analysis can still be applied. One more important point is that a value chain should not be confused with a supply chain. Supply chain analysis focuses on the movement of

physical materials and human resources it's more concerned with logistics and efficiency than it is with value.

### 1.1.9 Steps in value chain analysis

Value chain analysis involves several steps to understand the sequence of activities involved in creating value for customers and identifying opportunities for cost reduction and value creation. Here are the key steps in value chain analysis:

1. **Identifying Activities:** The first step is to identify all the activities involved in the production and delivery of a product or service. These activities can be categorized into primary activities (those directly involved in the creation of the product or service) and support activities (those that facilitate the primary activities).
2. **Mapping the Value Chain:** Once the activities are identified, they need to be mapped out in a sequential manner to create a visual representation of the value chain. This mapping helps in understanding the flow of activities and the interrelationships between them.
3. **Analyzing Costs:** After mapping the value chain, the next step is to analyze the costs associated with each activity. This involves identifying both direct costs (such as raw materials and labor) and indirect costs (such as overhead expenses). Cost analysis helps in understanding the cost structure of the value chain and identifying areas of inefficiency.
4. **Identifying Cost Drivers:** It's essential to identify the factors or drivers that influence the costs of each activity. This helps in understanding the root causes of costs and identifying opportunities for cost reduction.
5. **Benchmarking:** Once the costs and cost drivers are identified, businesses can benchmark their cost structure against industry standards or competitors. Benchmarking helps in understanding where the organization stands relative to its peers and where it has opportunities for improvement.
6. **Developing Cost Reduction Strategies:** Based on the analysis,

businesses can develop cost reduction strategies tailored to each activity in the value chain. This may involve streamlining processes, improving efficiency, renegotiating supplier contracts, or investing in technology.

7. **Identifying Value Creation Opportunities:** In addition to cost reduction, value chain analysis helps in identifying opportunities for value creation. By understanding customer needs and preferences at each stage of the value chain, businesses can identify ways to differentiate their products or services and create additional value.
8. **Integration with Strategy:** Finally, value chain analysis should be integrated with the organization's overall strategic objectives. Cost reduction efforts and value creation initiatives should be aligned with broader strategic goals to ensure coherence and effectiveness.

Overall, value chain analysis is a powerful tool in strategic cost management that helps businesses identify opportunities for cost reduction and value creation throughout the entire value chain, ultimately enhancing competitiveness and profitability. By following these steps, businesses can gain insights into their cost structure, identify opportunities for improvement, and create strategies to enhance competitiveness and profitability.

## Lets Sum up

Strategic Cost Management (SCM) is an approach focused on reducing costs and improving an organization's strategic position. Unlike traditional cost management, which mainly concentrates on controlling costs through budgeting and standard costing, SCM integrates cost information with strategic decision-making to enhance overall value and competitiveness. SCM is necessary for businesses to sustain a competitive edge, adapt to market changes, and maximize profitability. One crucial aspect of SCM is Value Chain Analysis, which involves identifying and optimizing all the activities within an organization that contribute to creating value for customers. The steps in Value Chain Analysis include identifying primary and support activities, analyzing the costs and value drivers of each activity, and seeking opportunities for cost reduction and value enhancement.

## Check Your Progress Quiz – 1

### 1. Which of the following best describes Strategic Cost Management (SCM)?

- a) A method focusing solely on reducing costs.
- b) A method for aligning a company's cost structure with its strategic objectives.
- c) A technique for managing production schedules.
- d) A tool for financial reporting.

### 2. One of the primary differences between SCM and traditional cost management is:

- a) SCM focuses only on short-term goals.
- b) Traditional cost management is integrated with strategic decision-making.
- c) SCM considers the entire value chain while traditional cost management does not.
- d) Traditional cost management prioritizes market expansion over cost efficiency.

### 3. Which of the following is NOT a primary activity in value chain analysis?

- a) Inbound Logistics
- b) Technology Development
- c) Operations
- d) Marketing and Sales

### 4. The main objective of value chain analysis is to:

- a) Reduce the workforce
- b) Identify ways to create and enhance customer value while optimizing costs
- c) Increase the number of product offerings
- d) Improve shareholder value through dividend payouts

### 5. Support activities in the value chain analysis include:

- a) Operations and Outbound Logistics
- b) Human Resource Management and Procurement
- c) Marketing and Sales
- d) Service

## Section 1. 2 QUALITY COST MANAGEMENT

Quality cost management is a systematic approach used by organizations to identify, analyze, and control the costs associated with achieving and maintaining product or service quality. The goal is to strike a balance between the expenses incurred due to poor quality (such as rework, scrap, warranty claims, and customer dissatisfaction) and the investments made in quality improvement initiatives.

### 1.2.1 QUALITY

#### Meaning of quality

Quality can be defined as the degree of excellence or superiority of a product, service, process, or experience as perceived by the customer or user. It encompasses various attributes such as performance, reliability, durability, aesthetics, usability, and conformance to specifications or requirements.

### 1.2.2 Concept of Quality

Quality as perception: You will not be wrong when you state that the term quality is a perception which is personal to an individual. In plain terms, quality is “features” or “worth” or “value”. You will realise how this is true when you read the following phrases picked from literature on quality.

- (i) Quality is not an act. It is a habit”- Aristotle. This is true and applicable to any act of a human being.
- (ii) Quality is conformance to requirements”: This in line with the concept that quality is decided by the customer.
- (iii) Quality is zero defects”: No customer wants defects in the products or services he or she pays for. This is a totally different idea on quality and is true when you make quality a habit.
- (iv) Quality is free” - Phil Crosby. This is the utopian situation. When there are no defects then there is no wastage and thus quality becomes free.
- (v) Quality is the degree to which a set of inherent characteristics fulfils requirements”- ISO 9000. This is an attempt to give universality to the term quality. Today, there is no single universal definition of quality. Some people view quality as “performance to standards.” Others view it as “meeting the customer’s needs” or “satisfying the customer.”

### 1.2.3 Key aspects of quality

**Fitness for Purpose:** A product or service should fulfill its intended function or purpose effectively and efficiently.

**Conformance to Requirements:** Quality means meeting or exceeding the specified standards, specifications, or expectations set by customers, regulators, or industry norms.

**Customer Satisfaction:** Quality is closely linked to customer satisfaction. It involves understanding and meeting customer needs, preferences, and expectations to deliver value and earn trust and loyalty.

**Continuous Improvement:** Quality is not a static attribute but a dynamic process of continuous improvement. It involves identifying opportunities for enhancement, innovation, and learning from feedback and experiences.

**Reliability and Consistency:** Quality implies consistency and reliability in performance over time and across different conditions or contexts.

**Cost-Effectiveness:** Quality involves achieving the desired level of excellence while optimizing resources and minimizing waste, defects, and rework.

Ultimately, the perception of quality may vary depending on individual preferences, cultural factors, and specific contexts. However, organizations strive to deliver high-quality products, services, and experiences to build a strong reputation, competitive advantage, and long-term success.

## 1.2.4 QUALITY MANAGEMENT

### 1.2.5 Meaning of Quality Management

Quality management is a systematic approach to ensuring that products, services, and processes consistently meet or exceed customer requirements and expectations. It involves the coordinated efforts of an organization to plan, control, and improve quality across all aspects of its operations. Here are key components of quality management:

- **Quality Planning:** This involves defining quality objectives, setting quality standards, and establishing processes and procedures to achieve them. It includes identifying customer needs and expectations and translating them into specific quality requirements.
- **Quality Control:** Quality control involves monitoring and evaluating products,

services, and processes to ensure they meet established quality standards. This may involve inspections, testing, measurements, and audits to identify and correct deviations from the desired level of quality.

- **Quality Assurance:** Quality assurance focuses on preventing defects and errors before they occur rather than detecting and correcting them afterward. It involves implementing quality management systems, processes, and procedures to ensure consistency, reliability, and conformance to requirements.
- **Continuous Improvement:** Also known as continuous quality improvement or Kaizen, this involves ongoing efforts to enhance processes, products, and services to achieve better quality, efficiency, and effectiveness. It relies on feedback, data analysis, root cause analysis, and corrective actions to drive incremental improvements over time.
- **Customer Focus:** Quality management places a strong emphasis on understanding and meeting customer needs and expectations. It involves gathering feedback, conducting surveys, and engaging with customers to identify opportunities for improvement and innovation.
- **Employee Involvement:** Quality management recognizes the importance of involving employees at all levels in the pursuit of quality excellence. It encourages teamwork, collaboration, and empowerment to foster a culture of quality consciousness and continuous improvement.

Overall, quality management is essential for organizations to build trust, reputation, and competitive advantage by consistently delivering high-quality products, services, and experiences that meet or exceed customer expectations.

### 1.2.6 Cost of Quality

The concept of cost of quality has been around for many years. Dr. Joseph M. Juran in 1951 in his Quality Control Handbook included a section on COQ. Mr. Philip B. Crosby in his book Quality Is Free has popularized the COQ concept. Quality is concerned with conformance to specification; ability to satisfy customer expectations and value for money. Recognising the importance of cost of quality is important in terms of continuous improvement process. The cost of control/conformance and the cost of failure of control/nonconformance is the quantitative measure of COQ. It is the sum of the costs related to prevention and detection of defects and the costs incurred due to occurrences of defects.

## 1.2.7 Components of COQ or Components of quality cost Management

Mr. Philip B. Crosby in his book Quality is Free referred to the COQ costs in two broad categories namely 'Price of Conformance' and 'Price of Non-conformance'. These two can be bifurcated further in to prevention & appraisal costs and internal & external failure costs. Hence, COQ is often referred as PAF (Prevention, appraisal & failure) model. In other words, 'Price of Conformance' is known as 'Cost of Good quality' and 'Price of Non-conformance' is often termed as 'Cost of Poor Quality'.



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### Prevention Costs

The costs incurred for preventing the poor quality of products and services may be termed as Prevention Cost. These costs are incurred to avoid quality problems. They are planned and incurred before actual operation and are associated with the design, implementation, and maintenance of the quality management system. Prevention costs try to keep failure and appraisal cost to a minimum.

### Examples include the costs for:

- Quality planning (creation of plans for quality, reliability, operations, production, and inspection)
- Quality assurance (creation and maintenance of the quality system)
- Supplier evaluation

- New product review
- Error proofing
- Capability evaluations
- Quality improvement team meetings
- Quality improvement projects
- Quality education and training (development, preparation, and maintenance of programs)
- Cost incurred due to product specification arising may be from incoming materials or intermediate processes.

### **Appraisal Costs**

The need of control in product and services to ensure high quality level in all stages, conformance to quality standards and performance requirements is Appraisal Costs. These are costs associated with measuring and monitoring activities related to quality. Appraisal Cost incurred to determine the degree of conformance to quality requirements (measuring, evaluating or auditing). They are associated with the supplier's and customer's evaluation of purchased materials, processes, products and services to ensure that they are as per the specifications. They could include:

#### **Examples include the costs for:**

- Verification (checking of incoming material, process setup, and products against agreed specifications)
- Quality audits (confirmation that the quality system is functioning correctly)
- Supplier rating (assessment and approval of suppliers of products and services)
- Checking and testing purchased goods and services
- In-process and final inspection/test
- Field testing
- Product, process, or service audits
- Calibration of measuring and test equipment

## Internal Failure Costs

Internal Failure Cost associated with defects found before the customer receives the product or service. Internal failure costs are incurred to remedy defects discovered before the product or service is delivered to the customer. These costs occur when the product is not as per design quality standards and they are detected before they are transferred to the customer. These are costs that are caused by products or services not conforming to requirements or customer/user needs and are found before delivery of products and services to external customers. Deficiencies are caused both by errors in products and inefficiencies in processes. They could include:

### Examples include the costs for:

- Waste- waste occurs when unnecessary work is done or holding of stock as a result of errors, poor organization, or communication
- Scrap—defective product or material that cannot be repaired, used, sold
- Rework or rectification—when the work needs to be rectified for defective material or errors
- Failure analysis—activity required to establish the causes of internal product or service failure
- Delays
- Re-designing
- Shortages
- Failure analysis
- Re-testing
- Downgrading
- Downtime
- Lack of flexibility and adaptability

## External Failure Costs

External failure costs are incurred to medicate defects discovered by customers. These costs occur when products or services that fail to reach design quality standards are not detected until after transfer to the customer. After the product or service is delivered and then the defects is found then it is an external failure. Further external failure costs are costs that are caused by deficiencies found after delivery of products and services to external customers, which lead to customer dissatisfaction. They could

include:

**Examples include the costs for:**

- Repairs and servicing (of both products that have been returned by the customer and which are serviced at the customer's place)
- Warranty claims (failed products that are replaced or services that are re-performed under a guarantee)
- Complaints (all work and costs associated with handling and servicing customer's complaints)
- Returns (handling and investigation of rejected or recalled products, including transport costs)
- Complaints
- Repairing goods and redoing services Warranties
- Losses due to sales reductions
- Environmental costs

The total quality costs are then the sum of all these costs.

**Cost of quality (COQ) = Cost of control + Cost of failure control**

By categorizing and quantifying these costs, organizations can identify opportunities for improvement and make informed decisions about where to allocate resources to achieve the best balance between quality and cost. The aim is to minimize total quality costs while maximizing customer satisfaction and long-term profitability.

## **1.2.8 INDIAN COST ACCOUNTING STANDARD 21 ON QUALITY CONTROL**

The following is the Cost Accounting Standard (CAS -21) issued by the Council of The Institute of Cost Accountants of India for determination of "QUALITY CONTROL".

## Introduction

The standard deals with the principles and methods of measurement and assignment of Quality Control cost and the presentation and disclosure in cost statement.

## Objective

The objective of this standard is to bring uniformity, consistency in the principles, methods of determining and assigning Quality Control cost with reasonable accuracy.

## Scope

The standards shall be applied to cost statements which require classification, measurement, assignment, presentation and disclosure of Quality Control cost including those requiring attestation.

## Definitions

The following terms are being used in this standard with the meaning specified.

**Abnormal cost:** An unusual or atypical cost whose occurrence is usually irregular and unexpected and/ or due to some abnormal situation of the production or operation.<sup>1</sup>

**Cost Object:** An activity, contract, cost centre, customer, process, product, project, service or any other object for which costs are ascertained.

**Defectives:** Materials, products or intermediate products that do not meet quality standards. This may include reworks or rejects.

**Rework:** Defectives which can be brought up to the standards by putting in additional resources.

Rework includes repairs, reconditioning and refurbishing.

**Rejects:** Defectives which cannot meet the quality standards even after putting in additional resources.

Rejects may be disposed off as waste or sold for salvage value or recycled in the

production process.

**Imputed Costs:** Notional cost, not involving cash outlay, computed for any purpose

**Interest and Finance charges:** Interest and Financing Charges are interest and other costs incurred by an entity in connection with the financing arrangements. Examples are: 1. Interest and commitment charges on bank borrowings, other short term and long-term borrowings: 2. Financing Charges in respect of finance leases and other similar arrangements: and 3. Exchange differences arising from foreign currency borrowings to the extent they are regarded as an adjustment to the interest costs. The terms Interest and financing charges, finance costs, and borrowing costs are used interchangeably.

**Overheads:** Overheads comprise costs of indirect materials, indirect employees and indirect expenses.

**Quality:** Quality is the conformance to requirements or specifications.

The quality of a product or service is fitness of that product or service for meeting its intended use as required by customer.

**Quality control:** A procedure or a set of procedures exclusively designed to ensure that the manufactured products or performed service adhere to a defined set of quality criterion or meets requirement of the client or the customer.

**Quality Control cost:** Cost of resources consumed towards quality control procedures.

**Scrap:** Discarded material having no or insignificant value and which is usually either disposed off without further treatment (other than reclamation and handling) or reintroduced into the process in place of raw material.

**Waste and spoilage:**

**Waste:** Material lost during production or storage and discarded material which may or may not have any value.

**Spoilage:** Production that does not meet the quality requirements or specifications

and cannot be rectified economically.

## Principles of Measurement:

Quality Control cost incurred in-house shall be the aggregate of the cost of resources consumed in the Quality Control activities of the entity. The cost of resources procured from outside shall be determined at invoice or agreed price including duties and taxes, and other expenditure directly attributable thereto net of discounts (other than cash discounts), taxes and duties refundable or to be credited by the Tax Authorities.

Such cost shall include:

• **Cost of conformance to quality:** (a) prevention cost; and (b) appraisal cost.

- Identification of Quality Control costs shall be based on traceability in an economically feasible manner.
- Quality Control costs other than those referred to in paragraph 5.2 shall be determined on the basis of amount incurred in connection therewith.
- Finance costs incurred in connection with the self-generated or procured resources shall not form part of Quality Control cost.
- Quality Control costs shall not include imputed costs.
- Any Subsidy/Grant/Incentive or any such payment received/receivable with respect to any Quality Control cost shall be reduced for ascertainment of the cost of the cost object to which such amounts are related.
- Any abnormal portion of the Quality Control cost where it is material and quantifiable shall not form part of the Cost of Quality Control.
- Penalties, damages paid to statutory authorities or other third parties shall not form part of the Quality Control cost.
- Any change in the cost accounting principles applied for the measurement of the Quality Control cost shall be made only if, it is required by law or for compliance with the requirements of a cost accounting standard, or a change would result in a more appropriate preparation or presentation of cost statements of an organisation.

**Assignment of costs**

- Quality Control cost that is directly traceable to the cost object shall be assigned to that cost object.
- Assignment of Quality Control cost to the cost objects shall be based on benefits received by them.
  - Benefits received – Quality Control cost is to be apportioned to the various cost objects in proportion to the benefits received by them.

For example: On the basis of number of tests performed for a product.

**Presentation**

- ✓ Quality Control cost, if material, shall be presented as a separate cost head with suitable classification.
- ✓ Disclosures
- ✓ The cost statements shall disclose the following:
  - ✓ The basis of distribution of Quality Control cost to the cost objects/ cost units.
  - ✓ Quantity and Cost of resources used for Quality Control cost as applicable.
  - ✓ Quality Control cost paid/ payable to related parties<sup>3</sup>.
  - ✓ Quality Control cost incurred in foreign exchange.
  - ✓ Any abnormal portion of the Quality Control cost.
  - ✓ Penalties and damages excluded from the Quality Control cost
  - ✓ Disclosures shall be made only where material, significant and quantifiable.
  - ✓ Disclosures shall be made in the body of the Cost Statement or as a foot note or as a separate schedule.
- ✓ Any change in the cost accounting principles and methods applied for the measurement and assignment of the Quality Control cost during the period covered by the cost statement which has a material effect on the Quality Control cost shall be disclosed. Where the effect of such change is not ascertainable wholly or partly the fact shall be indicated.

## Lets Sum Up

Quality Cost Management involves understanding and controlling the costs associated with maintaining the desired level of quality in products and services. Quality refers to the degree to which a product or service meets customer expectations and requirements. Quality Management is the process of overseeing all activities and tasks needed to maintain a desired level of excellence, encompassing the determination of a quality policy, creating and implementing quality planning and assurance, as well as quality control and quality improvement. The Cost of Quality includes prevention costs, appraisal costs, and the costs of internal and external failures. The Indian Cost Accounting Standard 21 on Quality Control provides a framework for organizations to systematically measure and manage the costs related to quality, ensuring that they can maintain high standards while controlling expenses associated with achieving and maintaining these standards.

### Section 1.2 Check Your Progress – Quiz – 2

#### 1. What does the term "quality" refer to in Quality Management?

- a) The cost of a product or service
- b) The degree to which a product or service meets customer expectations
- c) The speed at which a product or service is delivered
- d) The number of units produced in a given time

#### 2. Which of the following is a component of the Cost of Quality?

- a) Marketing Costs
- b) Research and Development Costs
- c) Appraisal Costs
- d) Legal Costs

#### 3. Internal failure costs are associated with:

- a) Costs incurred to prevent defects
- b) Costs of inspecting and testing products
- c) Costs resulting from defects found before delivery to the customer
- d) Costs resulting from defects found after delivery to the customer

**4. Which of the following is an example of external failure cost?**

- a) Training employees
- b) Testing products during production
- c) Reworking defective products
- d) Handling customer returns

**5. According to Indian Cost Accounting Standard 21, quality control costs should be:**

- a) Recorded only if they are significant
- b) Measured and reported consistently
- c) Ignored if they do not affect production
- d) Reported only in the annual financial statements

## **SECTION 1.3 LEAN SYSTEM**

### **1.3.1 Introduction**

A lean system is a strategic approach to operations management that aims to maximize value while minimizing waste. Originally developed in manufacturing settings, particularly by Toyota in the 1950s, lean principles have since been widely adopted across various industries and sectors. At its core, a lean system is built on the fundamental principle of delivering value to customers by optimizing processes, resources, and workflows. This is achieved through the identification and elimination of waste, which encompasses any activity or process that does not add value to the final product or service.

### **1.3.2 Meaning**

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. Waste is any step or action in a process that is not required to complete a process successfully (called “Non-Value Adding”). When Waste is removed, only the steps that are required (called “Value-Adding”) to deliver a satisfactory product or service to the customer remain in the process. There are generally 7 types of wastes:

### **The Seven Wastes expanded are:**

- **Overproduction:** Producing ahead of demand.
- **Inventory:** Having more inventory than is minimally required at any point in the process, including end-product.
- **Waiting:** Waiting includes products waiting on the next production step.
- **Motion:** People or equipment moving or walking more than is required to perform the process.
- **Transportation:** Moving products that is not actually required to perform the process.
- **Rework from defects:** Non-right first time.
- **Over Processing:** Unnecessary work elements (non-value-added activities).

Many large manufacturing companies like General Motors and Toyota are into lean manufacturing. Lean manufacturing involves a shift in traditional thinking, from batch and queue to product-aligned pull production. Instead of producing a lot of parts, the focus is on different types of operations conducted adjacent to each other in a continuous flow.

### **Some of the techniques are:**

- Just-in-Time (JIT)
- Kaizen Costing
- 5 S
- Total Productive Maintenance (TPM)
- Cellular Manufacturing/ One-Piece Flow Production Systems
- Six Sigma (SS)

### **Most of these applications are based on following principles:**

- Perfect first-time quality
- Waste minimization
- Continuous improvement
- Flexibility

## The characteristics of lean manufacturing

- Zero waiting time
- Zero inventory
- Pull processing
- Continuous flow of production
- Continuous finding ways of reducing process time.

### 1.3.3 Key principles of a lean system include:

- **Value:** Understanding what the customer values is essential. This involves identifying the features, attributes, or benefits of a product or service that the customer is willing to pay for.
- **Value Stream:** Mapping out the entire value stream, which represents all the steps and activities involved in delivering a product or service, from raw materials to the customer. This helps visualize the flow of value and identify areas of waste.
- **Flow:** Once waste is identified and eliminated, the focus shifts to optimizing the flow of value through the system. This involves minimizing delays, interruptions, and bottlenecks to ensure smooth and efficient operations.
- **Pull:** Adopting a pull-based system where products or services are produced based on customer demand rather than forecasting. This helps prevent overproduction and excess inventory, reducing waste and improving responsiveness.
- **Continuous Improvement:** Embracing a culture of continuous improvement, where employees are empowered to identify problems, suggest solutions, and implement changes to enhance efficiency and quality.
- **Respect for People:** Recognizing the importance of employees as valuable assets and actively involving them in decision-making processes. This fosters a sense of ownership, accountability, and engagement among employees.
- **Elimination of Waste:** Lean systems aim to eliminate various forms of

waste, including overproduction, waiting time, unnecessary transportation, excess inventory, unnecessary motion, defects, and underutilized talent.

By implementing lean principles, organizations can achieve a range of benefits, including cost reduction, improved efficiency, enhanced quality, increased flexibility, and greater customer satisfaction. Moreover, lean systems provide a framework for sustainable growth and competitiveness in today's dynamic and demanding business environment.

### 1.3.4 Benefits of Lean system

Implementing a lean system offers numerous benefits to organizations across various industries. Some of the key benefits include:

- **Cost Reduction:** Lean principles focus on identifying and eliminating waste in processes, which leads to reduced operating costs. By streamlining operations and optimizing resource utilization, organizations can achieve significant cost savings.
- **Improved Efficiency:** Lean systems help organizations streamline processes, reduce cycle times, and improve productivity. By eliminating bottlenecks and inefficiencies, employees can work more efficiently, leading to increased output with the same or fewer resources.
- **Enhanced Quality:** By standardizing processes and implementing practices such as error-proofing and continuous improvement, lean systems help improve product and service quality. This leads to fewer defects, lower rework costs, and increased customer satisfaction.
- **Increased Flexibility and Responsiveness:** Lean organizations are better equipped to respond quickly to changes in customer demand, market conditions, and other external factors. By reducing lead times and improving agility, organizations can adapt to changes more effectively.
- **Employee Engagement and Empowerment:** Lean principles emphasize the importance of involving employees in problem-solving and continuous improvement initiatives. This leads to higher levels of employee engagement, job satisfaction, and morale. Empowered employees are more

motivated to contribute ideas and take ownership of their work.

- **Enhanced Customer Satisfaction:** By focusing on delivering value to customers and eliminating waste, lean organizations can better meet customer needs and expectations. Improved product quality, shorter leadtimes, and greater reliability contribute to higher levels of customersatisfaction and loyalty.
- **Improved Competitive Advantage:** Lean organizations are better positionedto compete in the market by offering higher quality products and services at competitive prices. By continuously improving processes and reducing costs, organizations can gain a competitive edge over rivals.
- **Sustainable Growth:** Lean systems promote sustainable growth by fostering a culture of continuous improvement and efficiency. Organizations can achieve long-term success by constantly seeking ways to add value, reduce waste, and enhance productivity.

Overall, implementing a lean system can lead to significant benefits in terms of cost reduction, efficiency improvement, quality enhancement, customer satisfaction, and competitive advantage.

### 1.3.5 Just In Time

A JIT approach is a collection of ideas and philosophy that streamline a company's production process activities to such an extent that waste of all kind viz. material andlabour is systematically driven out of the process. Just in Time technique enables a company to ensure that it receives products / spare parts / materials from its suppliers on the exact date and at the exact time when they are needed.

CIMA defines: "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". A complete JIT system begins with production, includes deliveries to a company's production facilities, continues through the manufacturing plant, and even includes the types of transactions processed by the accounting system.

### 1.3.6 Features

1. Spare Parts / Material from suppliers on the exact date and at the exact time when they are needed.

2. Straight delivery to the production floor for immediate use in manufactured products.
3. Visit of engineering staff at supplier sites to examine suppliers' processes.
4. Installation of EDI system that tells suppliers exactly how much of which parts are to be sent.
5. Dropping off products at the specific machines.
6. Shorten the setup times.
7. Eliminating the need for long production runs / Streamlined flow of parts from machine to machine.
8. Training to employees how to operate a multitude of different machines, perform limited maintenance.
9. Several alterations in the supporting accounting systems.

**The steps involved are:**

- a. **Supplier Evaluation:** The Purchasing Department must evaluate and investigate every supplier and eliminate those who could not keep up with the delivery dates.
- b. **Supplier Assistance:** The engineering staff must visit supplier sites and examine their processes, not only to see if they can reliably ship high-quality parts but also to provide them with engineering assistance to bring them up to a higher standard of product.
- c. **Supplier Information System:** The firm must install a system, which is as simple as a fax machine or as advanced as an electronic data interchange system or linked computer systems, that communicates with suppliers as to exactly how much of specified parts are to be sent to the company.
- d. **Direct Delivery:** Deliveries should be sent straight to the production floor for immediate use in manufactured products, so that no time spent in inspecting the parts for defects. Drivers, who bring supplies of materials, drop them off at the specific machines that will use the materials first.

### **1.3.7 Benefits associated with JIT system**

Benefits associated with JIT system Reduction in Inventory levels: Unnecessary

piling up of Raw Materials, WIP and finished goods are avoided. The focus is on production and purchase as per the firm's requirements. Under a JIT system, the amount of inventory retained in a company drops continuously as under:

- Raw materials inventory is reduced because suppliers deliver only small quantities of parts as and when they are needed.
- Work-in-progress inventory drops because the conversion to machine cells and the use of kanban cards greatly reduces the need to pile up inventory between machines. Finished goods inventory drops because inventories are allowed to build up only if a company experiences high seasonal sales.
- **Reduction in Wastage of Time:** The key focus of any JIT system is on reducing various kinds of wastage of time, so that the entire production process is concentrated on the time spent in actually producing products. By reducing wastage of time, the firm effectively eliminates activities that do not contribute to the value of a product which in turn reduces the costs associated with them. Time reduction can be achieved in the following manner.
- **Inspection Time:** All inspection time is eliminated from the system as operators conduct their own quality checks. Suppliers' assistance and quality checks at supplier's factory eliminate the need for separate inspection or QC department in the firm.
- **Handling Time:** All movement, which involves shifting inventory and work in process throughout the various parts of the plant, can be eliminated by clustering machines together in logical groupings called Working Cells
- **Queue Time:** Queue time is eliminated by not allowing inventory to build up in front of machines. Kanban cards serve this purpose.
- **Storage Time:** Clearing out excessive stocks of inventory and having suppliers deliver parts only as and when needed eliminates Storage time. Reduction in Scrap Rates: There will be sharp reductions in the rates of defectives or scrapped units. The workers themselves
- Identify defects and take prompt action to avoid their recurrence. Reduction in Overhead Costs: Overhead Costs are greatly reduced with JIT operation. This is because of the following reasons:

- Elimination of non-value-added activities and improvement in value-added activities. Reduction of time
- Reduction in Inventory levels and associated costs
- Reduction / Elimination of unnecessary cost drivers
- Introduction of “Machine Cells” to identify direct costs than overhead expenses. The effect of JIT philosophy on Overhead is three-fold:
  - Thorough reduction in Overhead Costs
  - Shift between Overhead Costs and Direct Costs, due to introduction of Machine Cells
  - Scientific Allocation of common overheads based on Machine Cells and Cost Drivers By reducing unnecessary (non-value-added) activities and the associated time and cost-drivers, overheads can be greatly reduced e.g. material handling costs, rework costs, facility costs etc.

### 1.3.8 Essential Pre-requisites of a JIT system

- Low variety of goods
- Vendor reliability
- Good communication
- Demand stability
- TQM
- Defect-free materials
- Preventive maintenance

### 1.3.9 Impact of JIT System on

- **Waste Costs:** When fully installed, a JIT system vastly reduces all these types of waste. When this happens, there is a sharp drop in several aspects of a product's costs.
- **Overhead Costs:** e costs of material handling, facilities, and quality inspection decline when a JIT system is installed.

- **Product Prices:** 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

### **1.3.10 Performance Measurements in a JIT System**

Many of the performance measurement measures used under a traditional accounting system are not useful in a JIT environment, while new measures can be implemented that take advantage of the unique characteristics of this system.

- Machine utilization measurements can be discarded under JIT environment.
- Another inappropriate measurement is any type of piece rate tracking for each employee.
- Any type of direct labour efficiency tracking is highly inappropriate in a JIT system.
- Installing a JIT system does not mean that there should be a complete elimination of operational measures.

### **1.3.11 Kaizen costing**

Kaizen costing reduces costs during product production. It occurs after product design. Cost reduction techniques involve suppliers, re-designs, and waste reduction. Reductions enable sellers to lower prices. The Japanese have a way of doing things called 'kaizen'. They believe employees should always try to improve. Making small changes instead of big ones that cause problems is important. This saves money and helps the organization work better. Kaizen costing has two types - one for making products and the other for taking care of things the organization owns.

### **1.3.12 Kaizen costing meaning**

Kaizen costing meaning refers to a process companies use to continuously minimize production costs and improve the overall business efficiency by eliminating the activities that do not add any value. Organizations use this method when production starts after the complete product design stage.

This technique aims to remove losses and waste in a business's production,

distribution, and assembly processes by using this method. Additionally, they use this practice to eliminate the unnecessary steps involved in these processes and execute economic redesigns for their offerings. Hence, the technique helps organizations minimize extra costs at every stage.

Let us look at some of the costs businesses can control using this practice.

- **Supply Chain Costs:** These refer to costs associated with transportation, inventory, administration, and procurement.
- **Production Costs:** Production costs include the costs related to machinery, equipment, labour, tools, and raw materials.
- **Human Resource (HR) Costs:** This technique can regulate the incurred cost to hire, train, develop, and retain skilled workers.
- **Other Costs:** Businesses can also use the cost reduction technique to manage the cost of acquiring licenses, patents, trademarks, and expenses associated with other legal formalities.

### 1.3.13 Scope of Kaizen Costing

Here is the scope of kaizen costing, and by going through this the learners will get an idea of the features of Kaizen Costing as well.

- Kaizen costing focuses on continuously improving cost management.
- The methodology identifies and eliminates waste in all organization processes.
- Kaizen costing improves processes to streamline operations and increase efficiency.
- It aims to reduce defects to enhance the quality of products or services.
- Kaizen costing involves all employees in the organization and emphasizes teamwork and collaboration.
- The methodology aims to improve quality, increase productivity, reduce lead time, and minimize costs for the organization.

### 1.3.14 Types of Kaizen Costing

Kaizen costing is a method that focuses on constantly improving processes. This means finding ways to make things better all the time. The process involves identifying wasteful things and making changes that will help. By doing this, the company can work more efficiently. Make better quality products, and save money. Two primary **types of Kaizen costing**: asset-oriented or organization- oriented and product-oriented.

#### **Asset-Oriented or Organization-Oriented**

Kaizen costing is a method that helps businesses reduce expenses. By improving how they use their assets. It involves examining processes to find inefficiencies. And taking action to optimize asset use. For example, if a machine is only used 60% of the time. The Kaizen costing method can identify ways to increase usage to 80%. This can result in a 25% reduction in asset costs.

#### **Product-Oriented**

Product-oriented Kaizen costing is a way to reduce the cost of making a specific product. It looks at everything in making the product, including materials, labor, and overhead. The goal is to find ways to reduce waste and inefficiencies in production. A company can find ways to lower costs without sacrificing quality. For instance, if a business uses too much material to make a product. Kaizen costing can help find ways to use less material. While still producing a high-quality product. Both types of Kaizen costing can work together to achieve the most cost reduction. For example, a company could identify inefficiencies in asset usage.

### **5S and Principles of Kaizen Costing**

The Kaizen Costing 5S method involves five steps to improve efficiency. And reduce costs in the workplace. This technique originated in Japan. It gained global recognition.

#### **Sort**

The first step is "Sorting," which removes unnecessary items from the workspace. Reducing clutter makes the process more efficient, increasing productivity

and profitability.

## **Set in Order**

The second step is "Set in Order." Which involves arranging the remaining items efficiently. This step categorizes similar objects and labels them for easy identification. An organized workspace can save time, increase productivity, and prevent errors.

## **Shine**

The third step is "Shine," which focuses on maintaining a clean and organized workspace. Cleaning machinery, equipment, and workstations. And ensuring that tools and materials are stored in their designated locations.

## **Standardize**

The fourth step is "Standardize," which develops standard procedures to maintain the workspace. Creating routines for cleaning, organizing, and maintaining the workspace. And documenting procedures for future reference.

## **Sustain**

The fifth and final step is "Sustain." Which focuses on making the 5S method a part of the organization's culture. Training employees on the importance of 5S and including it in performance metrics.

Making 5S a part of the organization's culture becomes a continuous improvement process. Leading to sustained efficiency gains and cost savings.

### **1.3.15 Process of Kaizen Costing**

Kaizen costing is a cost management approach that focuses on continuous improvement in cost reduction and efficiency within an organization. It originated in Japan and is closely associated with the principles of Kaizen, which emphasize continuous improvement and incremental changes. The process of implementing Kaizen costing typically involves several key steps:

#### **1. Identification of Opportunities**

Identify areas within the organization where cost reduction and efficiency improvements are possible. This can include manufacturing processes, administrative functions, supply chain management, and more.

#### **2. Formation of Kaizen Teams**

Create cross-functional teams consisting of employees from different departments who are responsible for implementing Kaizen initiatives. These teams should include individuals with expertise in the area being targeted for improvement.

#### **3. Setting Objectives**

Clearly define specific and measurable cost reduction objectives for each Kaizen project. Objectives should be realistic and achievable within a relatively short time frame.

#### **4. Data Collection and Analysis**

Collect data related to the current processes and costs associated with the targeted area. Analyze the data to identify inefficiencies, bottlenecks, and areas where waste is occurring.

#### **5. Brainstorming and Idea Generation**

Encourage team members to brainstorm and generate ideas for cost reduction and process improvement. Ideas can be inspired by employee suggestions, benchmarking against industry best practices, or creative problem-solving.

#### **6. Evaluation of Ideas**

Evaluate the feasibility and potential impact of each idea in terms of cost

reduction. Prioritize ideas based on their potential for achieving the cost reduction objectives.

## 7. Implementation

Begin implementing the selected Kaizen initiatives. Changes may include process redesign, workflow adjustments, equipment upgrades, or changes in work practices. Ensure that employees are adequately trained and informed about the changes.

## 8. Monitoring and Measurement

Continuously monitor the progress of the Kaizen initiatives. Use key performance indicators (KPIs) to measure the impact of the changes on costs and efficiency. Compare the actual results to the objectives set in step 3.

## 9. Feedback and Adaptation

Gather feedback from employees and stakeholders involved in the process changes. Make adjustments and refinements to the initiatives based on this feedback. Continuously adapt to changing conditions and requirements.

## 10. Documentation

- Maintain detailed records of all Kaizen initiatives, including objectives, actions taken, results achieved, and lessons learned.
- This documentation is valuable for future reference and for sharing best practices.

## 11. Recognition and Reward

- Recognize and reward employees and teams that contribute significantly to cost reduction and process improvement.
- Incentives can encourage continued engagement in Kaizen activities.

## 12. Communication

- Ensure that the results of Kaizen initiatives are communicated throughout the organization.

- Share success stories and best practices to inspire further improvement efforts.

### 13.Repeat the Process

- Kaizen is an ongoing process, so once one set of initiatives is complete, start the process again in a different area or with new objectives.
- Continuously seek opportunities for improvement and cost reduction.

#### 1.3.16 Advantages and Disadvantages of Kaizen Costing

The Kaizen costing method focuses on continuous improvement. And involves identifying areas for improvement. And finding ways to reduce costs while maintaining or improving quality.

#### Advantages of Kaizen Costing

The **benefits of the kaizen costing process** have been explained in detail.

- **Continuous Improvement:** Kaizen costing is a method that businesses use to improve constantly. It helps create a culture where everyone always tries to improve things. This can lead to lowering costs, improving quality, and keeping customers happy. When businesses always try to improve, it helps them do better.
- **Cost Reduction:** Kaizen costing is that it can help businesses save money. By looking for things that are not necessary and getting rid of them. Businesses can reduce their expenses. They can also find ways to do things more efficiently and quickly, saving time and money.
- **Employee Engagement:** Kaizen costing involves everyone, not just the bosses. When everyone is involved, it helps people feel important and valued. This can lead to people working harder and doing better work. Employees who feel like they are part of the success are more likely to be committed to the company's goals.
- **Improved Quality:** Improving the quality is another focus of kaizen costing. By looking at what causes defects and errors. Businesses can fix problems and

do things better. When things are better quality, customers are happier and more likely to return. This helps businesses to succeed in the long run.

## Disadvantages of Kaizen Costing

There are some potential disadvantages of the Kaizen Costing process which has been explained in detail.

- **Time-Consuming:** Kaizen costing can take a lot of time to install. The process involves identifying areas that need improvement, analyzing data, and making changes. All this can take up a lot of time and resources.
- **Resistance to Change:** Some employees may resist the changes. Even if the changes aim to improve things and save costs, some employees may resist the changes. This can make it hard for the organization to optimize costs and efficiency.
- **Limited Scope:** Kaizen costing may have a limited scope. And may not be suitable for larger, more complex organizations. It may also be more effective in manufacturing industries than in service industries.
- **Short-term Focus:** Finally, Kaizen costing may have a short-term focus. While it can lead to immediate cost savings and quality improvements. It may not address larger, systemic issues requiring more significant organizational changes.

## Lets Sum UP

Lean Systems are methodologies focused on maximizing value by eliminating waste and improving efficiency in organizational processes. The benefits of Lean Systems include reduced operational costs, increased productivity, enhanced customer satisfaction, and improved quality of products and services. Just in Time (JIT) is a key component of Lean Systems, aimed at reducing inventory costs by receiving goods only as they are needed in the production process. Kaizen Costing is another essential element, emphasizing continuous, incremental improvements in all aspects of the business to reduce costs and enhance performance. Together, these practices help organizations streamline operations, reduce waste, and create more

value for customers.

## Section 1.3 Check Your Progress – Quiz 3

### 1. What is the primary goal of a Lean System?

- a) Increasing production volume
- b) Eliminating waste and creating value for the customer
- c) Reducing the workforce
- d) Increasing inventory levels

### 2. Which of the following is NOT a benefit of the Lean System?

- a) Increased efficiency
- b) Cost reduction
- c) Improved quality
- d) Increased inventory levels

### 3. Just in Time (JIT) primarily aims to:

- a) Increase production speed
- b) Reduce inventory costs by receiving goods only as needed
- c) Stockpile large quantities of raw materials
- d) Extend lead times

### 4. Kaizen Costing focuses on:

- a) Major overhauls of production processes
- b) Continuous, small improvements to reduce costs
- c) Increasing the price of products
- d) Reducing employee involvement in decision-making

### 5. Which of the following is a key principle of Kaizen Costing?

- a) Employee involvement
- b) Stockpiling raw materials
- c) Forecast-driven production
- d) Major restructuring

## 1.4 UNIT I SUMMARY

Strategic Cost Management (SCM) integrates cost information with strategic decision-making to enhance value and competitiveness, differing from traditional cost management, which focuses primarily on cost control through budgeting and standard costing. SCM is essential for maintaining a competitive edge and maximizing profitability. Value Chain Analysis, a critical aspect of SCM, involves

optimizing activities that create value for customers through steps such as identifying primary and support activities, analyzing costs, and enhancing value drivers. Quality Cost Management aims to control costs associated with maintaining quality, defined by meeting customer expectations, and involves prevention, appraisal, and failure costs. The Indian Cost Accounting Standard 21 provides a framework for managing quality-related costs. Lean Systems, focusing on eliminating waste and improving efficiency, offer benefits such as reduced costs, increased productivity, and improved quality. Key components include Just in Time (JIT), which reduces inventory costs, and Kaizen Costing, which emphasizes continuous, incremental improvements. Together, these practices streamline operations and create more value for customers.

## 1.5 GLOSSARY

<b>Strategic Cost Management (SCM)</b>	An approach that integrates cost information with Strategic decision-making to enhance a company's value and competitiveness.
<b>Traditional Cost Management</b>	A method focused on controlling costs primarily through budgeting and standard costing.
<b>Value Chain Analysis</b>	A process of identifying and optimizing all activities within an organization that contribute to creating value for customers. Steps include identifying primary and support activities, analyzing costs and value drivers, and seeking cost reduction and value enhancement opportunities.
<b>Quality</b>	The degree to which a product or service meets customer expectations and requirements.
<b>Quality Management</b>	The process of overseeing all activities and tasks needed to maintain a desired level of excellence, including quality planning, assurance, control, and improvement.
<b>Cost of Quality</b>	Includes prevention costs, appraisal costs, and the costs of internal and external failures associated with maintaining product or service Quality.
<b>Indian Cost Accounting Standard 21 on Quality Control</b>	A framework that helps organizations systematically measure and manage the costs related to quality.
<b>Lean Systems</b>	Methodologies aimed at maximizing value by eliminating waste and improving efficiency in organizational processes.

<b>Just in Time (JIT)</b>	An inventory management strategy that reduces inventory costs by receiving goods only as they are needed in the production process.
<b>Kaizen Costing</b>	A continuous, incremental improvement approach aimed at reducing costs and enhancing performance in all aspects of a business.

## 1.6 SELF ASSESSMENT QUESTIONS

### Short Answers: ( 5 Marks)

1.	Explain the concept of Strategic Cost Management (SCM) and how it differs from Traditional Cost Management.
2.	Describe the steps involved in Value Chain Analysis and its importance in Strategic Cost Management.
3.	What are the components of Quality Cost Management and how does the Indian Cost Accounting Standard 21 on Quality Control guide organizations in managing these costs?
4.	Discuss the principles and benefits of Lean Systems in an organizational context.
5.	Define Just in Time (JIT) and Kaizen Costing, and explain how they contribute to Lean Systems.

### Essay Type Answers: (8 Marks) K5/KS Level Questions

1.	Discuss the importance of Strategic Cost Management (SCM) in modern businesses and compare it with Traditional Cost Management. Provide examples to illustrate the benefits of SCM.
2.	Explain the concept of Value Chain Analysis in detail. Discuss the steps involved in conducting a Value Chain Analysis and how it can help businesses in identifying opportunities for cost reduction and value enhancement.
3.	Analyze the different components of Quality Cost Management. Discuss how prevention costs, appraisal costs, and failure costs contribute to the overall cost of quality. Explain the role of the Indian Cost Accounting Standard 21 in guiding organizations to manage these costs effectively.
4.	Evaluate the principles and benefits of Lean Systems in organizational operations. Discuss how Lean Systems can lead to reduced operational costs, increased productivity, and enhanced customer satisfaction. Provide real-world examples to support your discussion.
5.	Define Just in Time (JIT) and Kaizen Costing, and analyze their roles in the Lean System framework. Discuss how JIT and Kaizen Costing contribute to waste reduction, efficiency improvement, and cost savings in manufacturing and service industries. Use case studies or examples to illustrate your points.

## 1.7 Activities

### Assignment 1: Strategic Cost Management (SCM) Vs. Traditional Cost Management

**Objective:** Understand and compare SCM and Traditional Cost Management.

**Tasks:**

1. Define Strategic Cost Management (SCM) and Traditional Cost Management.
2. Identify and explain at least three key differences between SCM and Traditional Cost Management.
3. Provide examples of organizations that have successfully implemented SCM and discuss the benefits they achieved.
4. Discuss the challenges organizations might face when transitioning from Traditional Cost Management to SCM.

**Deliverable:** A 1500-word report with references to relevant literature and real-world examples.

### Assignment 2: Value Chain Analysis in Practice

**Objective:** Conduct a Value Chain Analysis for a selected organization.

**Tasks:**

1. Choose an organization (preferably one with accessible public information, such as a well-known company).
2. Identify the primary and support activities of the organization's value chain.
3. Analyze the costs and value drivers associated with each activity.
4. Suggest opportunities for cost reduction and value enhancement based on your analysis.
5. Present your findings in a structured format, including diagrams where necessary.

**Deliverable:** A 2000-word report with detailed analysis and recommendations.

### Assignment 3: Quality Cost Management and Indian Cost

## Accounting Standard 21

**Objective:** Explore Quality Cost Management and the role of the Indian Cost Accounting Standard 21.

### Tasks:

1. Define Quality Cost Management and its components: prevention costs, appraisal costs, and failure costs.
2. Explain the significance of maintaining quality and managing related costs.
3. Discuss the Indian Cost Accounting Standard 21 on Quality Control, including its objectives and guidelines.
4. Analyze how organizations can apply this standard to effectively manage quality-related costs.
5. Include case studies or examples of Indian companies that have implemented this standard.

**Deliverable:** A 1500-word essay with detailed explanations and examples.

## Assignment 4: Lean Systems Implementation

**Objective:** Understand the implementation and benefits of Lean Systems.

### Tasks:

5. Define Lean Systems and explain their core principles.
6. Describe the benefits of Lean Systems in reducing operational costs and improving efficiency.
7. Select a case study of an organization that has implemented Lean Systems successfully.
8. Analyze the steps taken by the organization to implement Lean Systems and the outcomes achieved.
9. Discuss the challenges faced during implementation and how they were overcome.

**Deliverable:** A 2000-word case study analysis with references to Lean Systems principles and real-world outcomes.

## 1.8 Answers for Check Your Progress

<b>Section 1.1 Strategic Cost Management QUIZ – 1</b>	
1	b) A method for aligning a company's cost structure with its strategic objectives.
2	c) SCM considers the entire value chain while traditional cost management does not.
3	b) Technology Development
4	Identify ways to create and enhance customer value while optimizing costs
5	b) Human Resource Management and Procurement
<b>Section 1.2 Quality cost management QUIZ – 2</b>	
Q.1	b) The degree to which a product or service meets customer expectations
Q.2	c) Appraisal Costs
Q.3	c) Costs resulting from defects found before delivery to the customer
Q.4	d) Handling customer returns
Q.5	b) Measured and reported consistently
<b>1.3 Section C Lean system QUIZ – 3</b>	
Q.1	b) Eliminating waste and creating value for the customer
Q.2	d) Increased inventory levels
Q.3	b) Reduce inventory costs by receiving goods only as needed
Q.4	b) Continuous, small improvements to reduce costs
Q.5	a) Employee involvement

### Suggested Readings / References Books:

1. Kaplan, R. S., & Anderson, S. R. (2007). Time-Driven Activity-Based Costing: A Simpler and More Powerful Path to Higher Profits. Harvard Business Review Press.
2. Porter, M. E. (1985). Competitive Advantage: Creating and Sustaining Superior Performance. Free Press.
3. Cooper, R., & Kaplan, R. S. (1991). The Design of Cost Management Systems: Text and Cases. Prentice Hall.
4. Womack, J. P., Jones, D. T., & Roos, D. (1990). The Machine That Changed the World: The Story of Lean Production--Toyota's Secret Weapon in the Global Car Wars That Is Now Revolutionizing World Industry. Rawson Associates.

### UNIT 2 – COST CONTROL AND REDUCTION

Cost Management Techniques: Cost Control: Meaning and Prerequisites - Cost Reduction: Meaning and Scope – Differences between Cost control and cost reduction - Pareto Analysis: Meaning, importance and applications - Target Costing: Meaning, steps and Principles – Life Cycle Costing: Meaning, Strategies for each stage of product life cycle, Benefits – Learning Curve: Meaning, Learning curve ratio and applications.

### COST CONTROL AND REDUCTION

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## UNIT OBJECTIVES

The main objective of the organization is to earn maximum profit and to achieve this objective, firm need either to increase the revenue or reduce the cost of production. Different concepts are used in cost accounting which deals with minimizing the cost. Let us discuss these concepts in detail to have better understanding and how these concepts enable the management to achieve the main objective of earning maximum profit.

## SECTION I - COST CONTROL AND COST REDUCTION

### 2.1 Introduction

Most of the enterprises want to maximize the profit, which is possible by decreasing the production cost. For this purpose, management uses two efficient tools, i.e. cost control and cost reduction. Cost Control is a technique which makes available the necessary information to the management that actual costs are aligned with the budgeted costs or not. Cost Reduction is a technique which we use to save the unit cost of the product without compromising its quality. The main objective of the organization is to earn maximum profit and to achieve this objective, firm need either to increase the revenue or reduce the cost of production. Different concepts are used in cost accounting which deals with minimizing the cost. Let us discuss these concepts in detail to have better understanding and how these concepts enable the management to achieve the main objective of earning maximum profit.

#### 2.1.1 Meaning

Cost Control is a process in which we focus on controlling the total cost through

competitive analysis. It ensures that the cost incurred on production should not go beyond the pre-determined cost. Cost Control involves a chain of various activities, which starts with the preparation of the budget in relation to production. Thereafter we evaluate the actual performance. After that we compute the variances between the actual cost and the budgeted cost and further, we find out the reasons for the same. Finally, we implement the necessary actions for correcting discrepancies.

### **2.1.2 Concept**

Cost control is prime function of cost accounting. Under cost control, cost accountant measures actual costs, compare it with the standards and find the deviations. Then remedial actions are taken to reduce the variances. It involves various actions taken to keep the cost within budgeted standards and not rising beyond the limit. Cost Control focuses on decreasing the total cost of production.

### **2.1.3 Features**

Cost control has following features:

- i) It is an attempt to keep the expenses within the control.
- ii) It is a continuous process which includes formulating standards and preparing budgets to set a target and then continuously comparing the actual with these standards.
- iii) It requires a continuous cost control report to identify the variances to be resolved.
- iv) It works as motivational and encouragement to the employees to achieve the budgetary goals and keep the cost, controlled.
- v) It is not only focused on reducing the cost, it also focusses on the effective utilization of the resources to get better results with the same available resources.

### **2.1.4 Steps involved in cost control**

Cost Control and the various steps involved in it. Cost Control is defined as the regulation by executive action of the costs of operating an undertaking, particularly where such action is guided by cost accounting.

Cost control involves the following steps and covers the various facets of the

management:

- a) **Planning:** First step in cost control is established plans/targets. The plan/target may be in the form of budgets, standards, estimates and even past actual may be expressed in physical as well as monetary terms. These serves as yardsticks by which the planned objective can be assessed.
- b) **Communication:** The plan and the policy laid down by the management are made known to all those responsible for carrying them out. Communication is established in two directions; directives are issued by higher level of management to the lower level for compliance and the lower level executives report performances to the higher level.
- c) **Motivation:** The plan is given effect to and performances starts. The performance is evaluated, costs are ascertained and information about results achieved are collected and reported. The fact that costs are being complied for measuring performances acts as a motivating force and makes individuals endeavour to better their performances.
- d) **Appraisal and Reporting:** The actual performance is compared with the predetermined plan and variances, i.e deviations from the plan are analyzed as to their causes. The variances are reported to the proper level of management.
- e) **Decision Making:** The variances are reviewed and decisions taken. Corrective actions and remedial measures or revision of the target, as required, are taken.

### 2.1.5 Advantages of Cost Control

The advantages of cost control are mainly as follows:

- i) Cost control helps to achieve expected return on the capital invested in a company, by resolving deviations between actual and expected standards.
- ii) Cost control leads to improved standards of production with the limited resources of the company.
- iii) Cost control reduces the prices or tries to maintain it by reducing the cost.

- iv) Cost control leads to economic use of resources.
- v) It increases profitability and competitive position of a company.
- vi) It enhances credit worthiness of the company.
- vii) It prospers and increases economic stability of the industry.
- viii) It increases the sales of the company and maintains the level of employment.

### 2.1.6 Disadvantages of Cost Control

The disadvantages of cost control are mainly as follows:

- i) It reduces the flexibility and process improvement in a company.
- ii) It restricts innovation by emphasizing to reaching the preset standards.
- iii) It requires skilled personnel to set standards.
- iv) It lacks creativity as it is concerned with following the current standards.
- v) It does not lead to improvement in standards.

### 2.1.7 Techniques of Cost Control

- 1. Budgetary control:** The budgetary control is process of continuous comparison. It works with creating budgets and continuous comparison of these budgets with the actual. It is finding the reasons for deviations and revising the budgets with needs. It helps in planning coordination and controlling.
- 2. Standard costing:** Standard costing is setting a standard cost and using this standard cost with actual and analyze the variances. It helps in identifying the causes of variances and cost estimation.
- 3. Inventory control:** Inventory control is regulating purchase, and usage of material to maintain the production without blocking the extra funds into it. It tries to reduce the wastage of the material and leads to effective utilization of it.
- 4. Ratio analysis:** Ratio analysis identifies the relationship among different variables. It helps to identify the trends in an organization. Ratio analysis is also

used for comparison of different organizations on different aspects. It is mainly used for comparing the performance with other organizations and external standards.

**5. Variance analysis:** Variance analysis is a method of cost control. It involves the identification of the amount of variance and to analyze the reasons of these variances. A variance is which varies from the standards set. It can be favourable or unfavourable.

### 2.1.8 Characteristics of a Good Cost Control System

According to Backer and Jacobson, effective cost control should have the following characteristics:

- a) Delineation of center's responsibility, i.e., deciding responsibility centers;
- b) The delegation of prescribed authority;
- c) Various cost standards;
- d) The relevance of controllable cost;
- e) Cost reporting; and
- f) Cost reduction

### 2.1.9 Prerequisites of cost control

Effective cost control is essential for strategic cost management to achieve its objectives. Here are some prerequisites for successful cost control within strategic cost management:

- **Clear Strategic Objectives:** Cost control efforts must align with the overall strategic objectives of the organization. Understanding the company's mission, vision, and strategic goals provides a framework for identifying cost control priorities and initiatives.
- **Cost Visibility and Transparency:** It's crucial to have accurate and up-to-date information about costs across all aspects of the business. This

includes both direct costs (e.g., materials, labor) and indirect costs (e.g., overhead, administrative expenses). Cost transparency enables informed decision-making and helps identify areas where cost control measures are needed.

- **Performance Measurement Systems:** Implementing robust performance measurement systems allows organizations to track key cost-related metrics and KPIs. These metrics provide insights into cost trends, variances, and areas for improvement, enabling proactive cost control actions.
- **Cost Accounting Systems:** Having a well-defined cost accounting system is essential for allocating costs accurately and understanding cost drivers within the organization. Cost accounting systems help identify the true cost of products, services, and processes, facilitating informed decision-making in cost control efforts.
- **Budgeting and Planning Processes:** Effective budgeting and planning processes establish clear cost targets and resource allocation priorities. By setting realistic budgets and regularly monitoring performance against budgeted targets, organizations can identify cost overruns early and take corrective action.
- **Cross-Functional Collaboration:** Cost control efforts often require collaboration across different functions and departments within the organization. Cross-functional teams can work together to identify cost-saving opportunities, streamline processes, and implement cost control measures effectively.
- **Continuous Improvement Culture:** Fostering a culture of continuous improvement encourages employees at all levels to seek out opportunities for cost reduction and efficiency enhancement. Encouraging innovation, employee engagement, and knowledge sharing can lead to more effective cost control initiatives.
- **Risk Management:** Identifying and mitigating risks that could impact costs is essential for effective cost control. By conducting risk assessments and

implementing risk management strategies, organizations can minimize the likelihood of cost overruns due to unforeseen events or circumstances.

- **Supplier Management:** Managing relationships with suppliers is critical for controlling costs related to materials and services. Negotiating favorable terms, monitoring supplier performance, and exploring cost-saving opportunities through supplier collaboration can help reduce procurement costs.
- **Change Management:** Implementing cost control measures often involves organizational changes and process improvements. Effective change management practices, including communication, training, and stakeholder engagement, help ensure smooth implementation and adoption of cost control initiatives.

### 2.1.10 Cost reduction

Cost reduction ensures savings in cost per unit and maximization of profits of the enterprise. Cost reduction aims at cutting off the unnecessary expenses which occur during the production process like storage, selling and distribution of the product. In order to identify cost reduction, we should mainly focus on the following major elements: savings in per unit production cost, the quality of the product should not be affected and savings should be non-volatile in nature.

### 2.1.11 Concept of Cost Reduction

Cost reduction is real and permanent reduction in unit cost of goods and services provided by the organization with effecting their quality and efficiency. There are different techniques used for cost reduction which can be budgetary control, standard costing, material control, labour control and overhead control. Cost reduction focuses on decreasing per unit cost of a product. Cost reduction is a continuous process. It has no visible end.

### 2.1.12 Features of Cost Reduction

**Cost control has following features:**

- a) Cost reduction is genuine cost reduction which can be implemented by lowering

the cost of production.

- b) Cost reduction includes permanent reduction in cost. It is more due to internal factors. For example, Reduction in government taxes is not considered as cost reduction as it is not permanent nature.
- c) Cost reduction doesn't decline the quality of production. It remains the same.
- d) Unit cost is reduced either by decreasing the expenditure at a given level of output.
- e) Cost reduction can also be done by increasing the quantity produced. It means reducing the expenditure will remain the same but the output will increase.

### **2.1.13 Advantages of Cost Reduction**

1. Cost reduction increases the profitability of an organization.
2. Cost reduction enhances the cash flow of the company.
3. Cost reduction program helps in achieving the goals of the company.
4. It is permanent in nature which affects the organizational performance in the longrun.
5. Cost reduction does not impair the quality of the production while reducing the cost.

### **2.1.14 Disadvantages of Cost Reduction**

There are problems with cost reduction which are generally do faced. These are as follows:

1. Workers and employees of an organization generally do not like to implement cost reduction program and they try to resist it. These are considered as difficult to be implemented.
2. Cost reduction programs are continuous in nature. It is a continuous attempt to lower the cost. But in most of the organizations, they are implemented on adhoc basis.
3. The cost reduction technique cannot be applied in all the cases.
4. Cost reduction technique requires a lot of research which adds on to the cost of the company

5. Cost reduction technique needs to be implemented in a planned manner.

There can be two ways to achieve the goal of the cost reduction

- By reducing the cost of that particular product and
- By increasing the efficiency so that we can increase the productivity of the production unit which lowers per unit cost.

### **2.1.15 Techniques of Cost Reduction**

Cost reduction results from reduction of wastage, improvement in efficiency, identifying alternatives, and continuous reduction of the cost. There can be different methods for cost reduction which can be as follows:

1. Value analysis and value engineering.
2. Job evaluation and merit rating
3. Quality control
4. Economic order quantity
5. Standardization and simplification
6. Inventory management
7. Bench marking
8. Business process reengineering
9. Job Study, Works Study and Motion Study;
10. Job Evaluation and Merit Rating;
11. Value Analysis.

### **2.1.16 Essentials for success of cost reduction programme**

Cost reduction programme aims at improvements of human efforts at all levels of the organization, which help in reducing costs. It may be a short-term or long-term program. A short-term programme is undertaken for sorting out immediate problems, e.g. a problem involving controlling wastages and inefficiencies in certain departments,

which are likely to push up the cost and may also require capital expenditure. It involves setting up the target return on capital employed and developing a scheme for its achievement through various cost reduction measures.

The following are the essential requisites for successful implementation of a cost reduction programme. Let us understand them in detail.

1. There should be a separate cost reduction cell responsible for proper planning and implementation of the cost reduction programme.
2. There should be an efficient system of management reporting at all levels of management.
3. The programme should have support from the top management. It is a continuous process and, therefore, should not be allowed to degenerate into a routine affair.
4. There should be an operation and research procedure.
5. There should be close co-operation amongst different executives concerned with the programme. Each departmental head should be given a list of the areas where he is expected to affect economies in cost. Moreover, he should also be encouraged to put forward his own suggestions for improvement.
6. There should be regular follow-up to the plan and continuous appraisal of the programme performed with the actual cost reduction performance.
7. The plan should not be confined only to reducing costs but should also examine whether expenditure is really required or not. In other words, there should be efforts to eliminate uneconomic and unnecessary activities.

### **2.1.17 Scope of Cost reduction**

The scope of cost reduction within strategic cost management is broad and encompasses various aspects of an organization's operations. Here are some key areas where cost reduction initiatives can be implemented as part of strategic cost management:

- **Procurement and Supply Chain Management**

Negotiating favourable terms with suppliers to secure discounts, rebates, or volume discounts. Consolidating purchases and leveraging economies of scale to reduce procurement costs. Implementing vendor management strategies to improve supplier performance and reduce supply chain risks. Exploring alternative sourcing options or reevaluating supplier contracts to achieve cost savings.

- **Product and Service Design**

Designing products or services with cost efficiency in mind, without compromising quality or customer satisfaction. Conducting value engineering to identify cost-saving opportunities in product design and specifications. Standardizing components or processes to reduce complexity and minimize production costs. Exploring alternative materials or manufacturing methods to lower production costs.

- **Production and Operations**

Improving operational efficiency through lean manufacturing principles and continuous process improvement initiatives. Optimizing production schedules and capacity utilization to minimize idle time and reduce overhead costs. Implementing energy-saving measures and waste reduction strategies to lower production costs and improve sustainability. Investing in automation and technology to streamline operations and reduce labour costs.

- **Quality Management**

Implementing quality management systems to reduce rework, scrap, and warranty costs associated with defects. Conducting root cause analysis to identify the underlying causes of quality issues and implementing corrective actions. Investing in employee training and development to improve skills and enhance product or service quality. Establishing quality benchmarks and performance metrics to monitor and improve quality-related costs over time.

- **Inventory Management**

Implementing just-in-time (JIT) inventory systems to minimize holding costs and reduce inventory carrying costs. Optimizing inventory levels through demand forecasting and inventory turnover analysis. Implementing inventory

control measures to reduce stockouts, overstocking, and obsolescence. Exploring vendor-managed inventory (VMI) or consignment arrangements to shift inventory holding costs to suppliers.

- **Overhead and Administrative Expenses**

Identifying and eliminating non-essential overhead costs through cost reduction initiatives and expense management strategies. Streamlining administrative processes and workflows to improve efficiency and reduce administrative overhead. Implementing cost-saving measures such as telecommuting, shared services, or outsourcing non-core functions. Leveraging technology solutions such as cloud computing or software automation to reduce IT infrastructure costs.

- **Marketing and Sales**

Analyzing marketing and advertising expenses to optimize return on investment (ROI) and reduce customer acquisition costs. Implementing targeted marketing campaigns and customer segmentation strategies to improve marketing efficiency. Negotiating advertising rates and media buying contracts to secure favourable terms and reduce advertising costs. Investing in digital marketing channels and social media platforms to reach customers more cost-effectively.

- **Employee Management**

Implementing workforce planning strategies to optimize staffing levels and minimize labour costs. Investing in employee training and development programs to improve productivity and reduce turnover. Implementing performance-based compensation systems to align employee incentives with cost reduction goals. Exploring flexible work arrangements or telecommuting options to reduce overhead costs associated with office space and utilities.

### Difference between cost control and cost reduction

<b>Basis</b>	<b>Cost control</b>	<b>Cost reduction</b>
Steps involved	Cost Control process involves defining the standards, measuring actual performance, comparing actuals with standards, estimating variances and taking corrective actions.	Cost Reduction is critical analysis of existing standards to improve the standards rather than creating the standards.
Techniques	Cost Control uses techniques like budgetary control and standard costing	Cost Reduction uses tools like simplification, standardization, value engineering, ABC analysis, etc.
focus	Cost Control focuses on maintaining the standards and achieving the established standards.	Cost Reduction is Challenging all the predefined standards and brings cost down further.
Time period	Cost Control is not a dynamic function; it tries to reach to the minimum cost at a given point of time	Cost Reduction is a continuous process. It is not a period based concept but it analyses new ways to reduce cost.
Orientation	Cost Control is focused on the past and present cost data.	Cost Reduction is a future oriented concept.
Nature	Cost Control can be regarded as a preventive function as it attempts to maintain the cost at the required pre-set standards	Cost Reduction is a corrective measure. It tries to improve the efficiency of the existing control mechanism. It assumes that there is always scope of reduction.
Permanency	Cost Control is temporary in nature. It is just a measure to	Cost Reduction is permanent reduction in cost of a good or

	reduce variances between actual and budgeted.	a service
Cost concerned	Cost Control focuses on reducing the overall cost.	Cost Reduction is an attempt to reduce the per unit cost.
Quality concerns	Cost Control does not talk of quality of the product; it focusses on reduction only.	Cost Reduction is reducing the cost while maintain the quality of the product.
Frequency	Cost Control is more of a routine activity. It requires close monitoring.	Cost Reduction is research oriented; it is a form of improvement so it demands creativity

### LET'S SUM UP

Cost management involves two key techniques: cost control and cost reduction. Cost control is the process of monitoring and regulating expenditure to ensure it aligns with the budget, requiring a clear understanding of budgeted costs, actual costs, and variances. Prerequisites for effective cost control include a well-defined budget, accurate cost tracking, and timely reporting. On the other hand, cost reduction focuses on permanently lowering costs without compromising quality or performance, involving methods like process improvement, waste reduction, and efficiency enhancement. The primary difference between the two lies in their approach: cost control maintains costs within set limits, while cost reduction aims to decrease overall costs.

## Section 2.1 Check Your Progress QUIZ -1

- 1. Which of the following best defines cost control?**
  - A. The process of reducing expenses to the lowest possible level.
  - B. The process of monitoring and regulating expenditure to align with the budget.
  - C. The process of eliminating all unnecessary costs.
  - D. The process of setting cost standards for future projects.
  
- 2. Which of the following is a prerequisite for effective cost control?**
  - A. Increasing production output.
  - B. Implementing cost reduction strategies.
  - C. Having a well-defined budget and accurate cost tracking.
  - D. Cutting costs without considering quality.
  
- 3. Cost reduction aims to**
  - A. Monitor expenditure to ensure it does not exceed the budget.
  - B. Permanently lower costs without compromising quality or performance.
  - C. Set up cost standards for future projects.
  - D. Increase the overall cost of production.
  
- 4. The primary difference between cost control and cost reduction is that:**
  - A. Cost control aims to increase costs while cost reduction aims to decrease costs.
  - B. Cost control is temporary while cost reduction is permanent.
  - C. Cost control maintains costs within set limits, while cost reduction aims to decrease overall costs.
  - D. Cost control does not require a budget, while cost reduction does.
  
- 5. Which technique involves methods like process improvement, waste reduction, and efficiency enhancement?**
  - A. Cost control
  - B. Budgeting
  - C. Cost reduction
  - D. Financial forecasting

## 2.2 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 that was a phenomenon first observed by Vilfredo Pareto, a nineteenth century Italian economist. He noticed that 80% of the wealth of Milan was owned by 20% of its citizens. This phenomenon, or some kind of approximation of it say, (70: 30 etc.) can be observed in many different business situations. The management can use it in a number of different circumstances to direct management attention to the key control mechanism or planning aspects. It helps to clearly establish top priorities and to identify both profitable and unprofitable targets.

### 2.2.1 Usefulness of Pareto Analysis

It provides the mechanism to control and direct effort by fact, not by emotions. It helps to clearly establish top priorities and to identify both profitable and unprofitable targets. Pareto analysis is useful to:

- (i) Prioritize problems, goals, and objectives to Identify root causes.
- (ii) Select and define key quality improvement programs.
- (iii) Select key customer relations and service programs.
- (iv) Select key employee relations improvement programs.
- (v) Select and define key performance improvement programs.
- (vi) Maximize research and product development time.
- (vii) Verify operating procedures and manufacturing processes.
- (viii) Product or services sales and distribution.
- (ix) Allocate physical, financial and human resources.

## 2.2.2 Application of Pareto Analysis

Pareto analysis may be applicable in the presentation of Performance Indicators data through selection of representative process characteristics that truly determine or directly or indirectly influence or conform the desired quality or performance result or outcome. The Pareto Analysis is generally applicable to the following business situations:

### (i) Pricing of a product

- In the case of a firm dealing with multi products, it would not be possible for it to analyse cost-profit- price -volume relationships for all of them. In practice, in case of such firm approximately 20% of products may account for about 80% of total sales revenue. Pareto Analysis is used for analysing the firm estimated sales revenues from various products and it might indicate that approximately 80% of its total sales revenue is earned from about 20% of its products.
- Such analysis helps the top management to delegate the pricing decision for approximately 80% of its products to the lower levels of management, thus freeing themselves to concentrate on the pricing decisions for products approximately 20% which are essential for the company's survival.
- Thus, a firm can adopt more sophisticated pricing methods for small proportion of products that jointly accounts for approximately 80% of total sales revenue. For the remaining 80% of the products which account for 20% of total sales revenue the firm may use cost-based pricing method.

### (ii) Customer Profitability analysis

- Instead of analysing products, customers can be analysed for their relative profitability to the organisation.
- Again, it is often found that approximately 20% of customers generate 80% of the profit. There will always be some customers who are less profitable than others, just as some products are less profitable than others.
- Such an analysis is useful too! for evaluation of the portfolio of customer profile and decision making such as whether to continue serving a same customer

group, what is the extent of promotion expenses to be incurred.

### **(iii) ABC analysis- Stock Control**

Another application of Pareto analysis is in stock control where it may be found that only a few of the goods in stock make up most of the value. In practice approximately 20% of the total quantity of stock may account for about 80% of its value. The outcome of such analysis is that by concentrating on small proportion of stock items that jointly accounts for 80% of the total value, a firm may well be able to control most of monetary investment in stocks.

### **(iv) Application in Activity Based Costing**

In Activity Based Costing it is often said that 20% of an organisation cost driver are responsible for 80% of the total cost. By analysing, monitoring and controlling those cost drivers that cause most cost, a better control and understanding of overheads will be obtained.

### **(v) Quality Control**

- Pareto analysis seeks to discover from an analysis of defect report or customer complaints which “vital few” causes are responsible for most of the reported problems.
- Often, 80% of reported problems can usually be traced to 20% of the various underlying causes. By concentrating once efforts on rectifying the vital 20%, one can have the greatest immediate impact on product quality.
- The Pareto Analysis indicates how frequently each type of failure (defect) occurs. The purpose of the analysis is to direct management attention to the area where the best returns can be achieved by solving most of quality problems, perhaps just with a single action.

## **2.2.3 Advantages of Pareto Analysis**

- Helps to identify and determine the root causes of defects or problems.
- Organizations can eliminate or resolve defects or errors with the highest priority first.

- Determine the cumulative impact of a problem, where cumulative impact is defined as an effect that is being caused due to a problem happening over a long period of time.
- Organizations can use Pareto charts to plan what measures or actions need to be taken in order to amend problems.
- Pareto charts can sharpen problem-solving and decision-making skills.

#### **2.2.4 Disadvantages of Pareto Analysis**

- Does not provide solutions to issues; only helpful for determining or identifying the root causes of a problem(s)
- Only focuses on past data.
- Pareto charts can only show qualitative data that can be observed; they cannot be used to represent quantitative data.

#### **2.2.5 Pareto Analysis Steps**

Now, we'll take a look at how to carry out a Pareto Analysis:

##### **1. Identify and List of problems**

Write out a list of all of the problems that you need to resolve. Where possible, gather feedback from clients and team members. This could take the form of customer surveys, formal complaints, or helpdesk logs, for example.

##### **2. Identify the Root Cause of Each Problem**

Next, get to the root cause of each problem. Techniques such as the 5 Whys, Cause and Effect Analysis, and Root Cause Analysis are useful tools for this.

##### **3. Score Problems**

Now, score each problem that you've listed by importance. The scoring method that you use will depend on the sort of problem that you're trying to resolve. For example, if you want to improve profits, you could score problems by how much they cost. Or, if you're trying to improve customer satisfaction, you might score them based on the number of complaints that you've received about each.

#### 4. Group Problems Together

Use the root cause analysis that you carried out in Step 3 to group problems together by common cause. For example, if three of your problems are caused by lack of staff, you could put these into the same group.

#### 5. Add up Scores for Each Group

Now, add up the scores for each group that you've identified. The one with the top score should be your highest priority, and the group with the lowest score your lowest priority.

#### 6. Take Action

Finally, it's time to take action! Your highest scoring problem will likely have the biggest payoff once fixed, so start brainstorming ideas on how to solve this one first.

You may find that your lowest-scoring problems aren't worth bothering about, particularly if they are very costly to fix. Use your Pareto Analysis to save your energy and resources for what's important!

### 2.2.6 Importance of Pareto analysis

Pareto analysis, also known as the 80/20 rule or Pareto principle, is a valuable tool in decision-making and problem-solving across various fields. Here are some key reasons why Pareto analysis is important:

1. **Focus on Vital Few:** Pareto analysis helps in identifying the most significant factors or issues that contribute to a problem or outcome. It suggests that a small number of causes (20%) usually have a significant impact (80%) on results. By focusing efforts on addressing these critical few factors, organizations can achieve greater efficiency and effectiveness.
2. **Prioritization:** It provides a structured method for prioritizing tasks, problems, or improvements. By ranking factors based on their contribution to the overall problem, Pareto analysis helps in allocating resources to address those factors that will yield the greatest return on investment or effort.

3. **Resource Optimization:** By identifying the most influential factors, Pareto analysis helps in optimizing the allocation of resources such as time, money, and manpower. This prevents wasting resources on less impactful aspects and directs them towards areas where they can make a significant difference.
4. **Data-Driven Decision Making:** It promotes data-driven decision-making by quantifying and visualizing the impact of different factors. This reduces reliance on subjective opinions or biases, ensuring decisions are based on empirical evidence.
5. **Continuous Improvement:** Pareto analysis is closely linked with continuous improvement methodologies like Lean Six Sigma. It supports ongoing efforts to streamline processes, reduce defects, and enhance overall quality by systematically addressing the most critical issues first.
6. **Visual Representation:** The Pareto chart, a graphical representation of Pareto analysis, provides a clear and intuitive way to communicate findings to stakeholders. This visual representation enhances understanding and consensus-building among team members and decision-makers.
7. **Problem Solving:** It aids in root cause analysis by pinpointing underlying issues that contribute most significantly to a problem. This enables teams to devise targeted solutions that address the primary causes rather than merely treating symptoms.

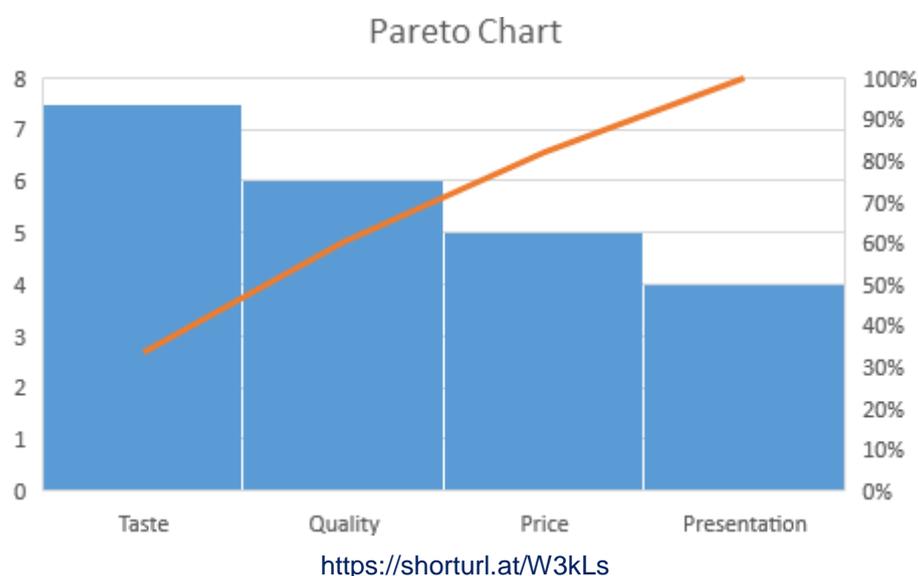
### 2.2.7 Pareto Chart Example

Let us take an example, where we need to prepare a chart of feedback analysis for XYZ restaurant, as per the reviews and ratings received from the customers. Here the customers are given a checklist of four points based on which they have to rate the restaurant out of 10. The four points are:

1. Taste of the Food
2. Quality of the food
3. Price

## 4. Presentation

Now, let us draw the Pareto chart for the Feedback of XYZ restaurant as per the data received.



Thus, Pareto chart considers the percentage of frequency (or measure) and cumulative percentage of measures to draw a line along with bars. Also, the cumulative percentage adds up to 100.

### Let's Sum Up

Pareto Analysis, based on the Pareto Principle or the 80/20 rule, is a decision-making tool that helps identify the few critical tasks that produce the most significant effects. Named after economist Vilfredo Pareto, who observed that 80% of Italy's land was owned by 20% of the population, this technique emphasizes that 80% of problems are often due to 20% of causes. Its importance lies in prioritizing tasks, improving efficiency, optimizing resource allocation, and solving problems by focusing on major issues. Applications of Pareto Analysis include quality control, inventory management, customer service improvement, time management, and cost management, making it a valuable method for enhancing overall performance and addressing key challenges effectively.

## Section 2.2 Check your progress Quiz - 2

### 1. What is Pareto Analysis based on?

A. Maslow's Hierarchy of Needs

- B. McGregor's Theory X and Theory Y
- C. Pareto Principle
- D. Herzberg's Two-Factor Theory

**2. According to the Pareto Principle, what percentage of effects typically come from 20% of causes?**

- A. 50%
- B. 60%
- C. 70%
- D. 80%

**3. Who is the Pareto Analysis named after?**

- A. Vilfredo Pareto
- B. Peter Drucker
- C. Frederick Taylor
- D. Henry Fayol

**4. Which of the following is NOT an application of Pareto Analysis?**

- A. Quality Control
- B. Inventory Management
- C. Strategic Planning
- D. Personal Development

**5. Which principle helps in prioritizing tasks and issues that need immediate attention in Pareto Analysis?**

- A. 80/20 Rule
- B. 70/30 Rule
- C. 90/10 Rule
- D. 60/40 Rule

## 2.3 Target costing

### 2.3.1 Introduction

Target Costing is defined as a structured approach in 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. Target Costing is a device to continuously control and reduce costs, and manage profit over the life cycle of a product. Target Costing initiates cost management at the earliest stages of product development and applies it throughout the product life cycle by actively involving the entire value chain. Under traditional costing system,  $\text{Expected Selling Price} = \text{Estimated Cost} + \text{Required Profit}$  But under Target Costing System,  $\text{Target Cost} = \text{Target Selling Price} - \text{Target or Required Profit}$ . If it is found that the product cannot be manufactured at the target costs, initiatives will be required to achieve the target costs through applying different cost control and cost reduction techniques. Value engineering and value analysis may be used to identify innovative and cost-effective product features in the planning and concept stages. Design may be changed for reduction of costs.

### 2.3.2 Meaning

Target costing has been described as a process that occurs in a competitive environment, in which cost minimization is an important component of profitability. This newer approach of product costing may take into account initial design and engineering costs, as well as manufacturing costs, plus the costs of distribution, sales and services.

### 2.3.3 Definition

It can be defined as “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”.

### 2.3.4 Steps in Target Costing

Steps in Target Costing Target Costing is viewed as integral part of the design and introduction of new products. It is part of an overall Profit Management Process,

rather than simply a tool for cost Reduction and Cost Management.

### **Step 1: Customer product Design Specification**

- (a) The customer requirements as to the functionality and quality of the product is of prime importance
- (b) The design specification of the new product is based on customer's tastes, expectations and requirements.
- (c) Competitor's products and the need to have extra features over competitor's products are also considered. However the need to provide improved products, without significant increase in prices, should be recognized as charging a higher price may not be possible in competitive conditions.

### **Step 2 & Step 3: Market - Target Selling Price and Production Volume**

- (a) The Target Selling Price is determined using various sales forecasting techniques.
- (b) The price is also influenced by the offers of competitors, product utility, prices, volumes and margins.
- (c) In view of competition and elasticity of demand, the Firm has to forecast the price volume relationship with reasonable certainty. Hence the Target Selling Price is market driven and should encompass a realistic reflection of the competitive environment.
- (d) Establishment of Target Production Volumes is closely related to Target Selling price, given the relationship between price and volume.
- (e) Target Volumes are also significant in computation of unit costs particularly Capacity Related Costs and Fixed Costs. Product Costs are dependent upon the production levels over the life cycle of the product.

### **Step 4: Profitability Target Profit Margin**

- (a) Since profitability is Critical for survival, a Target Profit Margin is established for all new products.
- (b) The Target Profit Margin is derived from the company's long term business plan,

objectives and strategies.

- (c) Each product or product line is required to earn at least the Target Profit Margin.

### **Step 5: Setting Target Costs**

- (a) The difference between the Target Selling Price and Target Profit Margin indicates the “Allowable Cost” for the product.
- (b) Ideally, the Allowable Cost becomes the “Target Cost for the product”. However, the Target Cost may exceed the Allowable Cost, in light of the realities associated with existing capacities and capabilities.

### **Step 6: Computing Current Costs**

- (a) The “Current Costs” for producing the new product should be estimated.
- (b) The estimation of Current Cost is based on existing technologies and components, taking into account the functionalities and quality requirements of the new product.
- (c) Direct Costs are determined by reference to design specifications, materials prices, labour processing time and wage rates. Indirect Costs may be estimated using Activity Based Costing Principles.

### **Step 7: Setting Cost Reduction Targets**

- (a) The difference between Current Cost and Target Cost indicates the required cost reduction.
- (b) This amount may be divided into two constituents namely –
- (c) Target Cost - Reduction Objective and b) Strategic Cost - Reduction Challenge.
- (d) The former is viewed as being achievable (yet still a very challenging target) while the latter acknowledges current inherent limitations.
- (e) After analyzing the Cost Reduction Objective, a Product-Level Target Cost is set which is the difference between the current cost and the target cost -reduction

objective.

## Step 8: Identifying Cost Reduction Opportunities

- (a) After the Product-Level Target Cost is set, a series of analytical activities, commence to translate the cost challenge into reality.
- (b) These activities continue from the design stage until the point when the new product goes into production.
- (c) The total target is broken down into its various components, each component is studied and opportunities for cost reductions are identified.
- (d) These activities are referred to as a) Value Engineering (VE) and b) Value Analysis (VA).

### 2.3.5 Principles of target costing

**Market-Driven Costing:** Target costing begins with understanding customer needs and market demands. It involves analyzing market conditions, customer preferences, and competitor pricing to determine the price at which the product can be sold profitably.

**Target Cost Setting:** Once the target selling price is determined, the target cost is calculated by subtracting the desired profit margin from the selling price. The target cost represents the maximum allowable cost to achieve the desired profit margin while remaining competitive in the market.

**Cross-Functional Collaboration:** Target costing requires collaboration across different functions within the organization, including design, engineering, manufacturing, marketing, and finance. Cross-functional teams work together to identify cost drivers, explore cost-saving opportunities, and develop cost-effective solutions.

**Cost Transparency and Visibility:** Target costing emphasizes the importance of cost transparency and visibility throughout the product development process. It involves tracking and analyzing costs at each stage of product development, from

design to production, to ensure that costs are managed effectively.

**Design to Cost:** A key principle of target costing is designing products with cost in mind. Designers and engineers work to develop products that meet customer requirements while also meeting the target cost. This may involve value engineering, redesigning components, or exploring alternative materials to reduce costs without sacrificing quality or performance.

**Continuous Improvement:** Target costing is an iterative process that involves continuous improvement and refinement. As new information becomes available and market conditions change, target costs may need to be adjusted, and cost-saving initiatives may need to be implemented to meet profitability targets.

**Supplier Collaboration:** Collaboration with suppliers is essential in target costing. Suppliers play a crucial role in achieving target costs by providing cost-effective materials, components, and services. Close collaboration with suppliers can help identify cost-saving opportunities and streamline the supply chain.

**Post-Implementation Evaluation:** After the product is launched, target costing involves monitoring actual costs and comparing them to the target costs. Post-implementation evaluation helps identify variances and opportunities for further cost optimization in future product iterations.

### 2.3.6 Advantages of Target Costing

**(a) Innovation:** It reinforces top-to-bottom commitment to process and product innovation, and is aimed at identifying issues to be resolved.

**(b) Competitive Advantage:** It enables a Firm to achieve competitive advantage over other Firms in the industry. The firm which achieves cost reduction targets realistically stands to gain in the long run.

**(c) Market Driven Management:** It 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.

**(d) Real Cost Reduction:** It uses management 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.

### 2.3.7 Disadvantages of target costing

1. The development process can be lengthened to a considerable extent since the design team may require a number of design iterations before it can devise a sufficiently low-cost product that meets the target cost and margin criteria.
2. A large amount of mandatory cost cutting can result in finger-pointing in various parts of the company, especially if employees in one area feel they are being called on to provide a disproportionately large part of the savings.
3. Representatives from number of departments on the design team can sometimes make it more difficult to reach a consensus on the proper design.

### Lets sum up

Target costing is a pricing strategy and cost management technique used to determine the allowable cost of a product based on market-driven pricing and desired profit margins. The process begins with identifying the target price customers are willing to pay, subtracting the desired profit margin to establish the target cost.

Steps include market research to set the target price, setting cost reduction goals, designing the product to meet these cost constraints, and continuously monitoring and improving processes to ensure the target cost is met. Key principles of target costing include customer focus, cross-functional collaboration, cost management throughout the product lifecycle, and continuous improvement. This approach ensures that products are competitively priced while maintaining profitability.

### Section 2.3 Check your progress- Quiz - 3

- 1. What is the primary goal of target costing?**
  - A. To set the highest possible price for a product.
  - B. To determine the allowable cost of a product based on market-driven pricing and desired profit margins.
  - C. To increase the production cost of a product.
  - D. To reduce the profit margins of a product.
  
- 2. What is the first step in the target costing process?**
  - A. Designing the product.
  - B. Setting cost reduction goals.
  - C. Identifying the target price customers are willing to pay.
  - D. Monitoring and improving processes.
  
- 3. Which principle of target costing emphasizes collaboration among different departments?**
  - A. Customer focus
  - B. Cross-functional collaboration
  - C. Cost management throughout the product lifecycle
  - D. Continuous improvement
  
- 4. In target costing, after setting the target price, what is subtracted to establish the target cost?**
  - A. Production cost
  - B. Desired profit margin
  - C. Market research cost
  - D. Overhead expenses

**5. Which of the following is NOT a principle of target costing?**

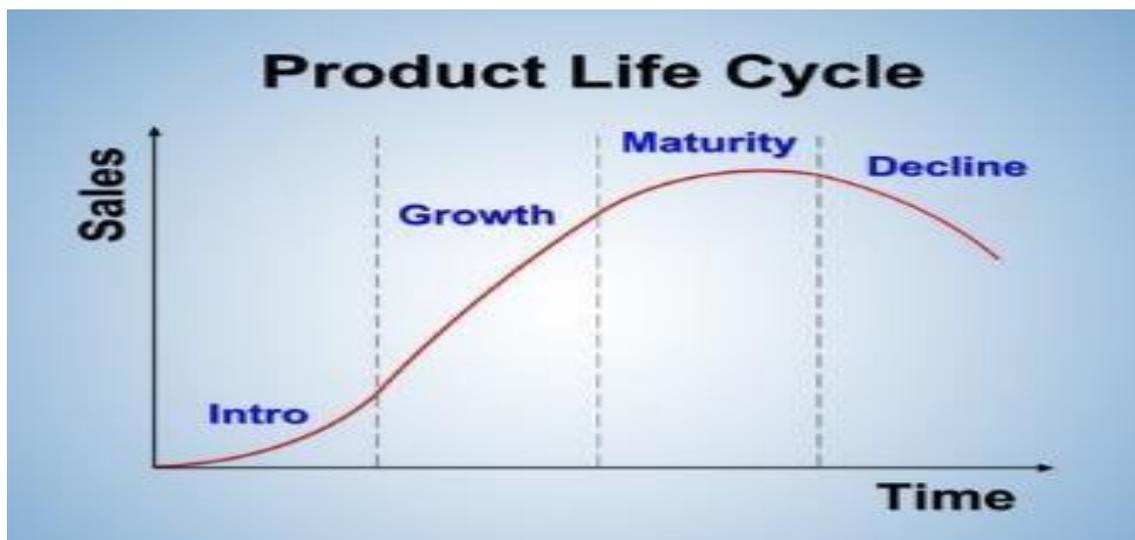
- A. Customer focus
- B. Setting the highest possible price
- C. Continuous improvement
- D. Cost management throughout the product lifecycle

**2.4 Life cycle costing**

Life Cycle Costing involves identifying the costs and revenue over a product's life i.e. from inception to decline. Life cycle costing aims to maximize the profit generated from a product over its total life cycle. Understanding this can be a useful analysis tool and can help to suggest which strategies the organisation needs to adopt in order to compete successfully.

**2.4.1 Product Life Cycle**

Each product has a life cycle. The life cycle of a product varies from a few months to several years. Product life cycle is thus a pattern of expenditure, sales level, revenue and profit over the period from new idea generation to the deletion of product from product range. The life cycle of a product consists of four phases/ stages viz., Introduction; Growth; Maturity; Saturation and Decline.



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**Stage I: Introduction Stage**

Stage one is where the new product is launched in the market. As the product is novel, there is minimal awareness and acceptance of it. Competition is almost negligible and profits are non-existent. The length of the introduction stage differs from product to product depending on various factors.

### **Characteristics**

- Decisions about the product branding, packaging and labelling.
- High distribution and promotional expenses.
- Profits are low or negative due to low initial volume.
- Pricing may be low penetration or high skimming pricing.
- Huge efforts to attract various marketing channels.
- Aggressive promotional efforts to increase awareness.
- Product refinements are not possible.
- Few competitors produce basic version of products.
- Focus on those buyers who are the readiest to buy.

### **Strategies**

- Attracting customers by raising awareness of the product through promotion activities.
- Inducing customers to try and buy the product.
- Strengthening or expanding channel and supply chain relationships.
- Building on the availability and visibility of the product that boost channel intermediaries to support the product.
- Setting price in alignment with the competitive realities of the market.

## Stage II: Growth Stage

The next stage in the product life cycle is growth stage. Sales begin to expand rapidly because of greater customer awareness. Competitors enter the market often in large numbers. As a result of competition, profit starts declining near the end of the growth stage.

### Characteristics

- High volume of business and increase in competition
- Sales increase at an increased rate in early growth stage
- New channels to handle additional volumes and new markets
- Shift of emphasis from product awareness to product conviction
- Overall strategy for trade-off between high profits and high market share
- Improving and/or adding features or strategic lowering of prices to attract more buyers
- Same promotional spending or slightly higher
- Educating market is main goal
- The length of the growth stage varies according to the nature of the product and competitive reactions.

### Strategies

- Establish a clear brand identity through promotional campaigns.
- Maintain control over product quality to assure customer satisfaction.
- Maximize availability of the product through strong distribution channel.
- Find the ideal balance between price and demand as per price elasticity.
- Overall strategy shifts from acquisition to retention of customers, from

motivating product trial to generating repeat purchases and building brand loyalty.

- Development of long-term relationships with customers and partners for the maturity stage.
- Value-based pricing strategies may be considered.
- Leverage the product's perceived differential advantages to secure a strong market position.

### **Stage III: Maturity Stage**

During the stage of maturity sales continue to increase, but at a decreasing rate. When sales level off, profits of both producers and middlemen decline. The main reason is intense price competition; some firms extend their product lines with new models. This stage poses difficult challenges.

### **Characteristics**

- Overcapacity in the industry
- Intensified competition
- Population growth and replacement demand govern future sales
- Some laggard buyers still enter the market
- Profits start to decline
- No new distribution channels to fill
- Customers start moving towards other products and substitutes
- Strong marketing challenges
- High R & D budgets

### **Strategies**

- Strong marketing efforts are needed to win over the competitor's customers.

- Product features may be improved or enhanced to differentiate product from that of the competitors.
- Prices may have to be reduced to attract the price-sensitive consumers.
- Various sales promotion incentives are necessary for the consumers as well as dealers to maintain their interest in the product.
- Distribution becomes more intensive and incentives may be offered to encourage product over competing products.

### **Stage IV: Decline Stage**

Decline in sales volume characterizes this last stage of the product life cycle. The need or demand for product disappears. Availability of better and less costly substitutes in the market accounts for the arrival of this stage.

### **Characteristics**

- Sales of most product forms drop to zero or may remain at a low level
- Sales decline for a number of reasons, including technological advances, consumer's shift in taste, etc
- Profits start declining and at times become negative
- No of organisations producing the products drops

### **Strategies**

- The product can be maintained in the market by differentiation, keeping low cost for some more time by adding certain new features and finding new uses.
- The firm can continue to offer the product to its loyal customers (niche segment) at a reduced price.
- Firm can even discontinue the product.
- Use the product as replacement product for launching another new product successfully in the market.

- The various marketing decisions in the decline stage will depend on the fact that, whether it is being revived, or given a new lease of life, or left unchanged if it is being liquidated.
- The price may be maintained or reduced drastically if liquidated.

#### 2.4.2 Benefits of Product Life Cycle Costing

The benefits of product life cycle costing are summarized as follows:

1. The product life cycle costing results in earlier actions to generate revenue or to lower costs than otherwise might be considered. There are a number of factors that need to be managed in order to maximise return on a product.
2. Better decisions should follow from a more accurate and realistic assessment of revenues and costs, at least within a particular life cycle stage.
3. Product life cycle thinking can promote long-term rewarding in contrast to short-term profitability rewarding.
4. It provides an overall framework for considering total incremental costs over the entire life span of a product, which in turn facilitates analysis of parts of the whole where cost effectiveness might be improved.
5. It is an approach used to provide a long-term picture of product line profitability, feedback on the effectiveness of life cycle planning and cost data to clarify the economic impact of alternatives chosen in the design, engineering phase etc.
6. It is also considered as a way to enhance the control of manufacturing costs. The thrust of product life cycle costing is on the distribution of costs among categories changes over the life of the product, as does the potential profitability of a product. Hence it is important to track and measure costs during each stage of a product's life cycle.
7. Product life cycle costing traces research and design and development costs etc., incurred to individual products over their entire life cycles, so that the total magnitude of these costs for each individual product can be reported and

compared with product revenues generated in later periods.

## **LETS SUM UP**

Life Cycle Costing (LCC) is a comprehensive approach to managing the total cost of a product throughout its entire lifecycle, from initial concept and design through production, operation, and disposal. Strategies for each stage of the product life cycle include investing in robust design and development to minimize future costs, optimizing production processes for efficiency, implementing effective marketing and sales techniques during the growth stage, managing operational and maintenance costs during the maturity stage, and planning for cost-effective disposal or recycling during the decline stage. The benefits of LCC include better cost prediction and control, improved decision-making, enhanced resource allocation, and increased overall profitability by considering long-term cost implications rather than just initial expenses.

## **Section 2.4 Check Your Progress – QUIZ – 4**

### **1. What is Life Cycle Costing (LCC)?**

- A. A method to determine the cost of a product only during its production stage.
- B. A comprehensive approach to managing the total cost of a product throughout its entire lifecycle.
- C. A strategy focused solely on reducing disposal costs.
- D. An approach to pricing products at the highest possible level.

### **2. Which strategy is important during the initial concept and design stage of a product's lifecycle?**

- A. Reducing operational costs.
- B. Investing in robust design to minimize future costs.
- C. Implementing effective marketing techniques.
- D. Planning for disposal or recycling.

### **3. During which stage of the product lifecycle should companies focus on**

**optimizing production processes for efficiency?**

- A. Concept and design stage
- B. Growth stage
- C. Production stage
- D. Decline stage

**4. Which of the following is a benefit of Life Cycle Costing?**

- A. It only focuses on initial expenses.
- B. It improves decision-making by considering long-term cost implications.
- C. It disregards operational and maintenance costs.
- D. It reduces the need for market research.

**5. What should be a key focus during the decline stage of a product's lifecycle?**

- A. Investing heavily in new design features.
- B. Planning for cost-effective disposal or recycling.
- C. Increasing production volume.
- D. Expanding the product line.

**2.5 Learning Curve**

Learning Curve Theory is concerned with the idea that when a new job, process or activity commences for the first time it is likely that the workforce involved will not achieve maximum efficiency immediately. Repetition of the task is likely to make the people more confident and knowledgeable and will eventually result in a more efficient and rapid operation. Eventually the learning process will stop after continually repeating the job. As a consequence, the time to complete a task will initially decline

and then stabilise once efficient working is achieved. The cumulative average time per unit is assumed to decrease by a constant percentage every time that output doubles. Cumulative average time refers to the average time per unit for all units produced so far, from and including the first one made.

Learning is the process by which an individual acquires skill, knowledge and ability. When a new product or process is started, the performance of a worker is not at its best and learning phenomenon takes place. As the experience is gained, the performance of a worker improves, time taken per unit of activity reduces and his productivity goes up. This improvement in productivity of a worker is due to learning effect. Cost predictions especially those relating to direct labour cost must allow for the effect of learning process. This technique is a mathematical technique. It can be very much used to accurately and graphically predict cost. It 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 is less and less with each successive unit produced. The slope of the decision curve can be expressed as a percentage. Experience curve, improvement curve and progress curve are other terms which can be synonymously used. Learning curve is essentially a measure of the experience gained in production of an article by an individual or organization. As more units are produced, people involved in production become more efficient than before. Each subsequent unit takes fewer man-hours to produce. The amount of improvement will differ with each type of article produced. This improvement or experience gain is reflected in a decrease in man-hours or cost.

### **2.5.1 Phases in Learning Curve**

The learning curve will pass through three different phases. In the first phase, there will be gradual increase in production rate until the maximum expected rate is reached and this phase is generally steep. In the second phase, the learning rate will gradually deteriorate because of the limitations of equipment. In the third phase, the production rate begins to decrease due to a reduction in customer requirements and increase in costs. Under the Learning curve model, the cumulative average time per unit produced is assumed to fall by a constant percentage every time total output of

the unit doubles. Learning curve is a geometrical operation, as the identical operation is increasingly repeated. Learning curve is essentially a measure of the experience gained in production of an article by an organization. As more and more units are produced, workers involved in production become more efficient than before. Each subsequent unit takes fewer manhours to produce. The Learning curve exists during a worker's startup or familiarization period on a particular job. After the limits of experimental learning are reached, productivity tends to stabilize and no further improvement is possible.

The learning curve ratio can be calculated with the help of the following formula:

Learning curve ratio = Average labour cost of first 2 units / Average labour cost of first units

### 2.5.2 Areas of consequence

- (i) A Standard Costing system would need to set standard labour times after the learning curve had reached a plateau.
- (ii) A budget will need to incorporate a learning cost factor until the plateau is reached.
- (iii) A budgetary control system incorporating labour variances will have to make allowances for the anticipated time changes.
- (iv) Identification of the learning curve will permit the company to better plan its marketing, work scheduling, recruitment and material acquisition activities.
- (v) The decline in labour costs will have to be considered when estimating the overhead apportionment rate.
- (vi) As the employees gain experience, they are more likely to reduce material wastage.

### 2.5.3 Graphical presentation of learning curve

The learning curve (not to be confused with experience curve) is a graphical representation of the phenomenon explained by Theodore P. Wright in his "Factors

"Affecting the Cost of Airplanes", 1936. It refers to the effect that learning had on labour productivity in the aircraft industry, which translates into a relation between the cumulative number of units produced (X) and the average time (or labour cost) per unit (Y), which resulted in a convex downward slope, as seen in the adjacent diagram.

There is a simple rationalisation behind all this: the more units produced by a given worker, the less time this same worker will need to produce the following units, because he will learn how to do it faster and better. Therefore, when a firm has higher cumulative volume of production, its time (or labour cost) per unit will be lower. Wright's learning curve model is defined by the following function:

$$Y = a \times \log b$$

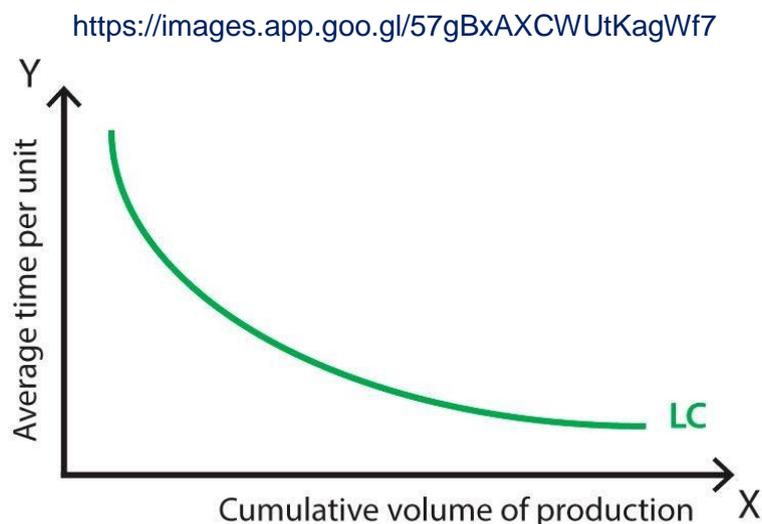
$$\log 2$$

where: Y = average time (or labour cost) per unit

a = time (or labour cost) per unit

X = cumulative volume of production

b = learning rate (%)



### 2.5.4 Uses of Learning curve

Learning curve is now being widely issued in business. Some of the uses are as follows:

1. Where applicable the learning curve suggest great opportunities for cost reduction

to be achieved by improving learning.

2. The learning curve concept suggests a basis for correct staffing in continuously expanding production. The curve shows that the work force need not be increased at the same rate as the prospective output. This also helps in proper production planning through proper scheduling of work; providing manpower at the right moment permitting more accurate forecast of delivery dates.
3. Learning curve concept provides a means of evaluating the effectiveness of training programs. What level of cumulative cost reduction do they accomplish? How does the learning curve for this group or shop compare with others? Whether any of the employees who lack the aptitude to meet normal learning curve should be eliminated.
4. Learning curve is frequently used in conjunction with establishing bid price for contracts. Usually, the bid price is based on the cumulative average unit cost for all the units to be produced for a given contract. If production is not interrupted. Additional units beyond this quantity should be costed at the increment costs incurred, and not at the previous cumulative average. If the contract agreement so provides, a contract may be cancelled and production stopped before the expected efficiency is reached. This would mean that the company having quoted on the basis of cumulative average unit cost is at a disadvantage because it cannot reap the benefit of learning. The contractor must provide for these contingencies so that it will be reimbursed for such loss.
5. The use of learning curve, where applicable, is important in the working capital required. If the requirement is based on average cumulative unit cost, the revenues from the first few units may not cover the actual expenditures. For instance, if the price was based on the average cumulative unit cost of 328 hours the first unit when produced and sold will cause a deficit of 4.72 hours ( $8.00 - 3.28$ ). Provision should therefore, be made to cover the deficit of working capital in the initial stages of production.
6. As employees become more efficient, the rate of production increases and so more materials are needed, the work-in-progress inventory turns over faster, and finished goods inventory grows at an accelerated rate. A knowledge of the learning curve assists in planning the inventories of materials. Work-in-progress, and finished goods.

7. Learning curve techniques are useful in exercising control, Variable norms can be established for each situation, and a comparison between these norms and actual expenses can be made. Specific or average incremental unit cost should be used for this purpose.

8. The learning curve may be used for make-or- buy decisions especially if the outside manufacturer has reached the maximum on the learning curve. Help to calculate the sensitive rates in wage bargaining.

### **2.5.5 Limitations to the usefulness of the learning curve**

The following points limiting the usefulness of learning curves should be noted:

1. The learning curve is useful only for new operations where machines do not constitute a major part of the production process. It is not applicable to all productions. E.g. new and experienced workmen.
2. The learning curve assumes that the production will continue without any major interruptions. If for any reason the work is interrupted, the curve may be deflected or assume a new slope
3. Charges other than learning may affect the learning curve. For example, improvement in facilities, arrangements, and equipment as well as personnel morale and performance may be factors influencing the curve. On the other hand, negative developments in employee attitudes may also affect the curve and reverse or retard the progress of improvement.
4. The characteristic 80 percent learning curve as originally obtained in the air force industry in U.S. A. has been usually accepted as the percentage applicable to all industries. Studies show that there cannot be a unique percentage which can be universally applied.

### **2.5.6 Factors affecting Learning Curve**

1. While pricing for bids, general tendency is to set up a very high initial labour cost so as to show a high learning curve. This should be the learning curve useless and sometimes misleading.

2. The method of production, i.e. whether it is labour oriented or machine-oriented influences the slope of the learning curve.
3. When labour turnover rate is high management has to train new workers frequently. In such situations the company may never reach its maximum efficiency potential. One of the important requisites of the learning curve concept is that there should be uninterrupted flow of work. The fewer the interruptions, the greater will be the improvement in efficiency.
4. Changes in a product or in the methods of production, designs, machinery, or the tools/used affect the slope of the learning curve. All these have the effect of starting learning a fresh because of new conditions. If the changes are frequent, there may be no learning at all. As far as possible the effects of above factors should be carefully separated from the data used to establish the curve. The effects of these factors must also be separated from the actual costs used to measure the performance. Unless this is done analysis of the projected cost or the actual cost will not be meaningful.

### LET'S SUM UP

The learning curve is a concept that illustrates how the time or cost to complete a task decreases with increasing repetitions due to gained efficiencies and improved skills. It quantifies the rate of improvement in performance, typically represented as a percentage known as the learning curve ratio, which shows the reduction in time or cost with each doubling of cumulative production. Applications of the learning curve are vast, including manufacturing, where it helps in forecasting costs and setting pricing strategies; project management, for estimating time and resources; and workforce training, to plan and optimize training programs. By understanding and leveraging the learning curve, organizations can enhance productivity, reduce costs, and improve overall performance.

## Section 2.5 Check Your Progress QUIZ – 5

### 1. What does the learning curve concept illustrate?

- A. The increase in costs with increased production.
- B. How the time or cost to complete a task decreases with increasing repetitions.
- C. The relationship between production volume and product quality.
- D. The fixed cost of production over time.

### 2. What is the learning curve ratio?

- A. The rate at which production volume increases over time.
- B. The percentage reduction in time or cost with each doubling of cumulative production.
- C. The fixed cost percentage of total production costs.
- D. The ratio of total costs to total revenues.

### 3. In which area can the learning curve be applied to forecast costs and set pricing strategies?

- A. Marketing
- B. Manufacturing
- C. Customer service
- D. Product design

### 4. How can the learning curve be useful in project management?

- A. By increasing the complexity of tasks.
- B. By estimating time and resources needed for future tasks.
- C. By decreasing the number of team members.

D. By ignoring past performance data.

### 5. Why is the learning curve important for workforce training?

A. It helps plan and optimize training programs to improve efficiency.

B. It increases the initial training costs significantly.

C. It reduces the need for continuous training.

D. It shows that training has no impact on performance improvement.

## 2.6 UNIT SUMMARY

Cost management techniques encompass various methods to control and reduce expenses in an organization. **Cost control** involves monitoring and regulating expenditure to ensure it stays within budget, requiring clear budget definitions and accurate cost tracking. **Cost reduction**, on the other hand, focuses on permanently lowering costs without compromising quality, through methods like process improvement and waste reduction. **Pareto Analysis** identifies the most significant factors in a process or problem, often revealing that 80% of effects come from 20% of causes, aiding in prioritizing efforts. **Target costing** sets allowable costs based on market-driven pricing and desired profit margins, involving steps like market research and cross-functional collaboration. **Life Cycle Costing** manages the total cost of a product from concept to disposal, with strategies tailored for each stage to optimize cost and performance. Lastly, the **learning curve** illustrates how repetition leads to improved efficiency and reduced costs, with the learning curve ratio quantifying this improvement. These techniques collectively enhance decision-making, cost prediction, resource allocation, and overall profitability.

## 2.7 GLOSSARY

Cost Control	The process of monitoring and regulating expenditure to ensure it aligns with the budget.
Cost Reduction	Aimed at permanently lowering costs without compromising quality or performance.

Pareto Analysis	A technique used to identify the most significant factors in a process or problem.
Target Costing	A pricing strategy to determine allowable costs based on market
Life Cycle Costing	Managing the total cost of a product throughout its lifecycle.
Learning Curve	Illustrates how the time or cost to complete a task decreases with increasing repetitions due to improved efficiencies.

## 2.8 SELF ASSESSMENT QUESTIONS 5 Marks

1	Explain the difference between cost control and cost reduction.
2	Describe the concept of Pareto Analysis.
3	Discuss the concept of target costing and its importance in product pricing strategies.
4	Explain the concept of life cycle costing (LCC) and its significance in managing the total cost of a product.
5	Define the learning curve and the learning curve ratio.

## SELF ASSESSMENT QUESTIONS 10 Marks

1	Compare and contrast cost control and cost reduction strategies.
2	Explain the principles of Pareto Analysis and its relevance in operational management.
3	Evaluate the concept of target costing as a strategic tool for managing product costs.

4	Evaluate the effectiveness of LCC in optimizing costs across different stages of the product life cycle.
5	Analyze the concept of the learning curve and its implications for organizational performance improvement.

## 2.9 Activities

1. **Case Study Analysis:** Analyze a company's cost control and cost reduction strategies, and identify areas for improvement.
2. **Pareto Analysis Exercise:** Conduct a Pareto analysis on a given dataset (e.g., customer complaints, production defects) and present findings.
3. **Target Costing Project:** Develop a target costing plan for a new product, including market research, target pricing, and cost reduction strategies.
4. **Life Cycle Costing Simulation:** Create a life cycle cost analysis for a product, including strategies for each stage of its life cycle.
5. **Learning Curve Calculation:** Calculate the learning curve ratio for a specific production process and discuss its implications for cost management.

## 2.10 Answer for check Your Progress

2.2 Section Pareto analysis QUIZ – 2	
Q.1	c) Pareto Principle
Q.2	d) 80%
Q.3	a) Vilfredo Pareto
Q.4	d) Personal Development

<b>Q.5</b>	a) 80/20 Rule
<b>2.3 Section Target costing QUIZ – 3</b>	
<b>Q.1</b>	b) To determine the allowable cost of a product based on market-driven pricing and desired profit margins.
<b>Q.2</b>	c) Identifying the target price customers are willing to pay.
<b>Q.3</b>	b) Cross-functional collaboration
<b>Q.4</b>	b) Desired profit margin
<b>Q.5</b>	b) Setting the highest possible price
<b>2.4 Section C Life cycle costing QUIZ – 4</b>	
<b>Q.1</b>	b) A comprehensive approach to managing the total cost of a product throughout its entire lifecycle.
<b>Q.2</b>	b) Investing in robust design to minimize future costs.
<b>Q.3</b>	c) Production stage
<b>Q.4</b>	b) It improves decision-making by considering long-term cost implications.
<b>Q.5</b>	b) Planning for cost-effective disposal or recycling.
<b>2.5 Section Learning curve QUIZ – 5</b>	
<b>Q.1</b>	b) How the time or cost to complete a task decreases with increasing repetitions.
<b>Q.2</b>	b) The percentage reduction in time or cost with each doubling of cumulative production.
<b>Q.3</b>	b) Manufacturing

<b>Q.4</b>	b) By estimating time and resources needed for future tasks.
<b>Q.5</b>	a) It helps plan and optimize training programs to improve efficiency.

### 2.11 References and Suggested Readings

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3. Bandgar P.K., (2017), “StrategicCostManagement”, 1<sup>st</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.
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## Unit 3 – Activity Based Cost Management

Activity Based Cost Management: Concept, Purpose, Stages, Benefits, Relevance in Decision making and its Application in Budgeting – Practical problems.

### Activity Based Cost Management

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## UNIT OBJECTIVES

The important objectives of this units objectives Activity-Based Costing (ABC) is used to identify, describe, assign costs to, and report on agency operations. A more accurate cost management system than traditional cost accounting; ABC identifies opportunities to improve business process effectiveness and efficiency by determining the “true” cost of a product or service. Activity Based Costing is a method for developing cost estimates in which the project is subdivided into discrete, quantifiable activities or a work unit.

### SECTION 3.1: ACTIVITY BASED COST MANAGEMENT

#### 3.1 Activity-based cost management (ABCM)

A powerful tool for measuring performance, Activity-Based Costing (ABC) is used to identify, describe, assign costs to, and report on agency operations. A more accurate cost management system than traditional cost accounting; ABC identifies opportunities to improve business process effectiveness and efficiency by determining the “true” cost of a product or service. Activity Based Costing is a method for developing cost estimates in which the project is subdivided into discrete, quantifiable activities or a work unit. ABC systems calculate the costs of individual activities and assign costs to cost objects such as products and services on the basis of the activities undertaken to produce each product or services. It accurately identifies sources of profit and loss.

##### 3.1.1 The key components of activity-based cost management include:

- 1. Activity Identification:** This involves identifying all the activities within an organization that contribute to the production of goods or services. Activities can be categorized as either value-added or non-value-added.
- 2. Cost Assignment:** Once activities are identified, costs are assigned to each activity based on the resources consumed by that activity. This involves tracing direct costs to specific activities and allocating indirect costs based on drivers

that measure the consumption of resources.

3. **Activity Analysis:** This step involves analyzing activities to understand their efficiency and effectiveness. Managers can identify opportunities for improvement by analyzing the costs and performance of each activity.
4. **Decision Making:** The information provided by ABCM can be used to make informed decisions about pricing, product mix, process improvement, and resource allocation. By understanding the true cost drivers of their operations, organizations can make more accurate decisions to improve profitability and efficiency.

Overall, activity-based cost management provides a more accurate and detailed understanding of costs within an organization, enabling better decision-making and resource allocation. It helps organizations identify areas for improvement and optimize their operations to enhance competitiveness and profitability.

### 3.1.2 Concept of activity-based cost management

The concepts of ABC were developed in the manufacturing sector of the United States during the 1970s and 1980s. It is a practice in which activities are identified and all related costs of performing them are calculated, providing actual costs chargeable. The focus of activity-based costing is activities. Thus, identifying activities is a logical first step in designing an activity based costing. An activity is an event, task or unit of work with a specified purpose. For example; designing products, setting up machines, operating machines and distributing products.

The CIMA terminology defines ABC as a cost attribution to cost units on the basis of benefit received from indirect activities. Peter B. B. Turney defines ABC as “a method of measuring the cost and performance of activities and cost objects. Assigns cost to activities based on their use of resources and assigns cost to cost objects based on their use of activities. ABC recognizes the causal relationship of cost drivers to activities.” ABC can be defined by the following equation:

$$C/A = HD + M + E + S$$

Where C/A = Estimated cost per activity

H = Number of labour hours required to perform the activity one

time  
D = Wages per labour hour

M = Material costs required to perform the activity one

time  
E = Equipment costs to perform the activity one time

S = Subcontracting costs to perform the activity one time

The total cost for performing the activity will be based on the number of times the activity is performed during a specific time frame. An activity-based costing system first traces costs to activities and then to products and other cost objects. The following figure diagrammatically explains the basic flow of Activity-Based Costing.

### 3.1.3 Important Terms in Activity Based Costing

The operation of the ABC system involves the use of the following terms:

**Activity:** An activity means an aggregate of closely related tasks having some specific functions which are used for completion of goal or objectives. For example, customer order processing is an activity. It includes receiving order from customers, interacting with production department regarding capacity to produce and giving commitment to the customer regarding delivery time. Other activities may be assembling, packaging, advertising etc.

**Resource:** Resources are elements that are used for performing the activities or factors helping in the activities. For example, order receiver, telephone, computers etc. are resources in customer order processing activity. It may include material, labour, equipment, office supplies etc.

**Cost:** Cost is amount paid for resource consumed by the activity. For example, salaries, printing stationary, telephone bill etc. are cost of customer order processing activity. It is also known as activity cost pool.

**Cost object:** It refers to an item for which cost measurement is required. e.g. a product, a service, or a customer.

**Cost pool:** A cost pool is a term used to indicate grouping of costs incurred on a particular activity which drives them.

**Cost driver:** Any element that would cause a change in the cost of activity is cost driver. Actually, cost drivers are basis of charging cost of activity to cost object. Cost

drivers are used to trace cost to product by using a measure of resources consumed by each activity. For example, frequency of order, number of order etc. may be cost driver of customer order processing activity.

Cost driver may be involved two parts:

1. Resource cost driver
2. Activity cost driver

A resource cost driver is a measure of the quantity of resources consumed by an activity. An activity cost driver is a measure of the frequency and intensity of demand, placed on activities by cost objects.

### For example,

Activities	Resources	Cost pools	Cost driver
Consulting	Consultant, computer	Employee cost, maintenance cost	Level of consultant, time spent
Laser printing	Printing staff, printer	Colour cost, maintenance cost, printing stationary	No. of pages printed, font
Accounting administration	Administration staff	Salaries	No. of times account produced

Activities	Resources	Cost pools	Cost driver
Consulting	Consultant, computer	Employee cost, maintenance cost	Level of consultant, time spent
Laser printing	Printing staff, printer	Colour cost, maintenance cost, printing stationary	No. of pages printed, font
Accounting administration	Administration staff	salaries	No. of times account produced

Customer service	Telephone, staff	Telephone bills, salaries	Frequency of order, no. of order, time spent in servicing, no. of service calls
Research development	Staff, equipment, material	Salaries, maintenance cost, materials cost	No. of research projects, time spent on a project, technical complexities of project

The cost drivers for various functions i.e., production, marketing, research, and developments are given below.

Production	Number of units Number of set-ups
Marketing	Number of sales personnel Number of sales orders
Research and development	Number of research projects Personnel hours spend on projects Technical complexities of the projects
Customer service	Number of service calls Number of products serviced Hours spend on servicing products

## LETS SUM UP

Activity-Based Cost Management (ABCM) is a method that focuses on managing business activities to improve cost efficiency and resource allocation. Key components of ABCM include identifying and analyzing activities, assigning costs to these activities, and then allocating costs to products or services based on their usage of these activities. The concept of ABCM revolves around understanding the relationship between activities, resources, and costs to provide more accurate cost

information and insights for decision-making. Important terms in Activity-Based Costing (ABC) include cost drivers, which are factors that cause costs to increase or decrease; activity cost pools, which group together costs associated with particular activities; and cost objects, which are items or entities, such as products or services, that incur costs. By focusing on activities, ABCM helps organizations improve process efficiency, reduce waste, and enhance profitability.

## Section 3.1 Check Your Progress – QUIZ 1

1. **What is the primary focus of Activity-Based Cost Management (ABCM)?**
  - A) Managing financial investments
  - B) Managing business activities to improve cost efficiency
  - C) Developing marketing strategies
  - D) Enhancing customer satisfaction
2. **Which of the following is a key component of ABCM?**
  - A) Identifying and analyzing activities
  - B) Conducting employee training programs
  - C) Setting sales targets
  - D) Developing IT infrastructure
3. **In the context of ABCM, what is a 'cost driver'?**
  - A) A method of reducing costs
  - B) A factor that causes costs to increase or decrease
  - C) A type of financial report
  - D) A software tool for accounting
4. **What is an 'activity cost pool'?**
  - A) A grouping of employees based on their roles
  - B) A collection of costs associated with a particular activity
  - C) A savings account for future investments
  - D) A report showing profit margins
5. **What are 'cost objects' in Activity-Based Costing (ABC)?**
  - A) Items or entities that incur costs

- B) Tools used for accounting purposes
- C) Financial statements of a company
- D) Strategies for reducing expenses

### 3.2.1 Stages of Activity Based Costing

The different steps or stages in ABC system can be given as follows:

#### 1. Identify the chosen cost objects

The cost objects of any organization are the products or services and the goal is to first calculate the total cost of manufacturing and distributing these products and their unit cost.

#### 2. Identify the different activities within the organization

After the identification of cost objects, the main activities, which are being performed in the organization, have to be identified. Usually, the number of activities over cost centers in ABC will be much more as compared to traditional overhead system. The exact number will depend on how the management subdivides the organization's activities.

#### 3. Identifying the direct cost of products

The direct cost of products or objects may comprise direct material cost, direct labor cost and direct expenses. Classification of as many of the total costs as direct costs as is economically feasible should be made. It reduces the amount of costs classified as indirect.

#### 4. Relating the overhead to the activities

After identifying the organization's activities, the various items of overhead are related to activities both support and primary, that caused them. As a result of relating the items of overhead to various activities, cost pool or cost buckets are created.

#### 5. Spreading the support activities across the primary activities

The spreading of support activities (i.e., activities which support or assist manufacturing) across the primary activities (correlated to the number of units produced) is done on some suitable base which reflects the use of support activity.

The base is the cost driver and is measured of how the support activities are used.

## 6. Determining the activity cost drivers

The determination of the activity cost drivers is done in order to relate the overhead collected in cost pools to the cost objects of products. It is done on the basis of the factor that drives the consumption of the activities.

## 7. Calculating the activity cost driver rates

The activity cost rates for each activity are calculated in the way in which overhead absorption rates would be calculated under the traditional system. It can be presented as follows: Activity cost driver rate = Total cost of activity/Activity driver  
These activity cost driver rates are to be used for ascertaining the amount of overhead chargeable to various cost objects or products.

## 8. Computing the total cost of products or cost objects

The total costs of the products shall be computed by adding all direct and indirect costs assigned to them. The amount of overhead chargeable to a product or cost object shall be calculated by multiplying the activity cost drivers rates by different amounts of each activity that each product or other cost object consumes.

### 3.2.2 Significance of Activity Based Costing

The following list reflects the results of several surveys of practice in the United States, the United Kingdom, and Canada to determine why companies choose ABC.

- Cost Reduction: ABC measures how much activities that are costly and then take steps to reduce their costs by changing the productions process or outsourcing those activities.
- Product pricing and decisions of whether to continue producing a product or keeping a particular customer. ABC implementers generally believe that ABC provides more accurate cost information than conventional costing does. Management can use this information to negotiate price increases with customers or to drop unprofitable products.
- Budgeting and performance measurement: Management can use more accurate cost information to improve budgets and measures of department and division performance.

### 3.2.3 Advantages of Activity Based Costing

- (i) It provides more accurate product costing information by reducing arbitrary cost allocations.
- (ii) It improves the quality of information available for decision making by answering the questions such as what activities and events are driving cost and where efforts should be made to control cost
- (iii) It is easiest way to allocate overhead in the product.
- (iv) It helps to identify the activities that can be eliminated.
- (v) It links up cause and effect relationship.
- (vi) ABC helps to identify the value-added activities (that increase the customer's satisfaction) and non- value-added activities (that creates the problems in customer's satisfaction)
- (vii) ABC translates cost in to a language that people can understand and that can be linked up to business activities.

### 3.2.4 Limitations of Activity Based Costing

- (i) More time consuming to collect data
- (ii) Cost of buying, implementing and maintaining activity-based system
- (iii) In some cases, the establishment of cause-and-effect relationship between cost driver and costs not be a simple affair.
- (iv) ABC does not conform to generally accepted accounting principles in some areas.

### 3.2.5 Traditional vs. Activity Based Costing

Activity-Based Costing (ABC) is a system that focuses on activities as the fundamental cost objects and uses the cost of these activities for computing the costs of products. There are several reasons why managers are preferring ABC to traditional system.

- (i) In the traditional system cost analysis is done by product. In ABC managers focus attention on activities rather than products because activities in various departments may be combined and costs of similar activities ascertained, e.g. quality control, handling of materials, repairs to machines etc. If detailed costs are kept by activities,

the total company costs for each activity can be obtained, analysed, planned and controlled.

- (ii) Managers manage activities and not products. Changes in activities lead to changes in costs. Therefore, if the activities are managed well, costs will fall and resulting products will be more competitive.
- (iii) Allocating overhead cost to production based on a single cost driver (allocation base, such as unit basis, percentage of material, percentage of prime cost, labour hour rate, machine hour rate etc.) can result in an unrealistic product cost because the traditional system fails to capture cause-and-effect relationships. To manage activities better and to make wiser economic decisions, managers need to identify the relationships of causes (activities) and effects (costs) in a more detailed and accurate manner.
- (iv) ABC highlights problem areas that deserve management's attention and more detailed analysis. Many actions are possible, on pricing, on process technology, on product design, on operational movements and on product mix.

Traditional costing can lead to under costing or over costing of products or services. Over or under costing of products distorts cost information. A poor quality of cost information causes management to make poor decisions for pricing, product emphasis, make or buy etc. ABC differs from the traditional system only in respect of allocations of overheads or indirect costs. Direct costs are identified with, or assigned to, the cost object, in the same manner as is done in case of traditional costing system. Overhead costs are linked to the cost objects based on activities. This is shown in the following figure:

### 3.2.6 Purpose of activity cost management

The purpose of activity cost management is multifaceted and encompasses several key objectives aimed at enhancing organizational performance and competitiveness. Here are some primary purposes of activity cost management:

- 1. Cost Understanding:** Activity cost management helps organizations gain a deeper understanding of the costs associated with various activities involved in their operations. By identifying and analyzing these costs, organizations can pinpoint areas of inefficiency, waste, or excessive spending.
- 2. Cost Allocation:** Activity cost management enables more accurate allocation of costs to products, services, or customers. By understanding the specific

activities that drive costs, organizations can allocate overhead and indirect costs more accurately, leading to more precise product costing and pricing decisions.

- 3. Performance Evaluation:** Activity cost management provides a basis for evaluating the performance of different activities within the organization. Managers can assess the efficiency and effectiveness of activities by comparing actual costs with expected costs, enabling them to identify areas for improvement and optimization.
- 4. Resource Optimization:** By understanding the cost drivers of various activities, organizations can optimize the allocation of resources to maximize efficiency and minimize waste. This includes optimizing staffing levels, equipment utilization, inventory levels, and other resources to achieve better cost outcomes.
- 5. Strategic Decision Making:** Activity cost management provides valuable information for strategic decision making. Organizations can use activity cost data to make informed decisions about product mix, pricing strategies, process improvements, outsourcing decisions, investment priorities, and other strategic initiatives.
- 6. Continuous Improvement:** Activity cost management facilitates a culture of continuous improvement within the organization. By regularly monitoring and analyzing activity costs, organizations can identify opportunities for cost reduction, process optimization, and innovation, driving ongoing improvements in performance and competitiveness.

Overall, the purpose of activity cost management is to enable organizations to better understand, manage, and optimize their costs to improve performance, profitability, and competitiveness in a dynamic business environment. It provides a systematic approach for identifying opportunities for cost reduction and value creation while aligning resources with strategic objectives.

### 3.2.7 Benefits of Activity-Based Cost Management

Activity-Based Cost Management (ABCM) offers several benefits to organizations, which contribute to improved performance, cost efficiency, and strategic decision-making. Some of the key benefits include:

- 1. Accurate Cost Allocation:** ABCM provides a more accurate method of allocating costs to products, services, or customers by identifying the specific activities that consume resources. This leads to more precise product costing, pricing, and profitability analysis.
- 2. Cost Transparency:** By breaking down costs into activities, ABCM enhances cost transparency within the organization. Managers gain a clearer understanding of the factors driving costs, enabling them to make more informed decisions about resource allocation and cost management.
- 3. Identification of Cost Drivers:** ABCM helps organizations identify the activities that drive costs throughout the value chain. By understanding the underlying cost drivers, managers can focus on optimizing those activities to achieve cost savings and improve efficiency.
- 4. Better Decision Making:** With accurate cost information provided by ABCM, managers can make better decisions across various areas of the organization. This includes decisions related to product mix, pricing strategies, process improvements, outsourcing, investment priorities, and resource allocation.
- 5. Improved Performance Evaluation:** ABCM enables more accurate performance evaluation by measuring the efficiency and effectiveness of activities within the organization. Managers can identify areas for improvement and monitor progress over time, leading to enhanced performance and productivity.
- 6. Cost Reduction Opportunities:** ABCM helps organizations identify opportunities for cost reduction and process optimization. By analyzing activity costs and performance, managers can pinpoint inefficiencies, eliminate non-

value-added activities, and streamline processes to achieve cost savings.

7. **Enhanced Strategic Alignment:** ABCM aligns cost management practices with strategic objectives, ensuring that resources are allocated in a manner that supports organizational goals. This alignment helps organizations prioritize initiatives and investments that contribute to long-term success.
8. **Continuous Improvement:** ABCM fosters a culture of continuous improvement within the organization. By regularly monitoring activity costs and performance, organizations can identify opportunities for enhancement and implement changes to drive ongoing efficiency gains and cost savings.

Overall, Activity-Based Cost Management enables organizations to gain a deeper understanding of their cost structure, improve decision-making processes, and drive continuous improvement across all areas of the business. By leveraging the benefits of ABCM, organizations can enhance their competitiveness, profitability, and long-term sustainability.

## LETS SUM UP

Activity-Based Costing (ABC) involves several stages: identifying activities, assigning costs to those activities, determining cost drivers, calculating activity rates, and applying these rates to cost objects. The purpose of ABC is to provide more accurate cost information by tracing costs to the activities that generate them, which helps in making better managerial decisions. The advantages of ABC include improved cost accuracy, better understanding of overheads, enhanced decision-making, and identification of inefficient processes. However, it also has disadvantages, such as being time-consuming and costly to implement, requiring significant data collection, and potentially being complex to maintain. Overall, the benefits of ABC include more precise product costing, improved resource allocation, and greater insight into cost behavior, leading to enhanced profitability and strategic planning.

## Section 3.2 CHECK YOUR PROGRESS – QUIZ -2

1. Which of the following is the first stage in Activity-Based Costing (ABC)?
  - A) Determining cost drivers
  - B) Identifying activities
  - C) Applying rates to cost objects
  - D) Calculating activity rates
2. What is the primary purpose of Activity-Based Costing (ABC)?
  - A) To simplify financial reporting
  - B) To provide more accurate cost information
  - C) To increase employee salaries
  - D) To develop marketing strategies
3. One advantage of ABC is:
  - A) Reduced implementation costs
  - B) Improved cost accuracy
  - C) Simplified accounting processes
  - D) Decreased data collection requirements
4. A disadvantage of ABC is:
  - A) It is quick to implement
  - B) It provides less accurate cost information
  - C) It is time-consuming and costly to implement
  - D) It reduces the complexity of cost analysis
5. What is a benefit of using Activity-Based Costing (ABC)?
  - A) Enhanced product costing precision
  - B) Reduced need for managerial oversight
  - C) Simplified financial statements
  - D) Increased market share

### 3.3 Relevance in Decision making and its Application in

## Budgeting

### 3.3.1 Relevance in Decision making and its Application in Budgeting

Activity-Based Cost Management (ABCM) plays a significant role in decision-making processes and can be applied effectively in budgeting. Here's how ABCM is relevant in decision-making and its application in budgeting:

- 1. Product Pricing and Profitability Analysis:** ABCM provides accurate information about the costs associated with producing different products or services. This information is crucial for decision-making related to pricing strategies. By understanding the true cost drivers, organizations can set prices that reflect the actual cost of production and ensure profitability.
- 2. Make or Buy Decisions:** ABCM helps organizations evaluate whether to produce goods or services internally or outsource them to external suppliers. By comparing the costs of in-house production versus outsourcing, organizations can make informed decisions about the most cost-effective option.
- 3. Product Mix Decisions:** ABCM enables organizations to analyze the profitability of different product lines or service offerings. This information is valuable for decision-making regarding the allocation of resources and investment in product development or marketing efforts.
- 4. Process Improvement Initiatives:** ABCM identifies activities that consume resources and their associated costs. This information is essential for identifying opportunities for process improvement and cost reduction. Decision-makers can prioritize improvement initiatives based on their impact on activity costs and overall performance.
- 5. Resource Allocation:** ABCM provides insights into how resources are allocated across various activities within the organization. This information helps decision-makers allocate resources more effectively, ensuring that resources are directed towards activities that contribute the most value to the

organization.

## In budgeting, ABCM can be applied in the following ways:

- 1. Activity-Based Budgeting (ABB):** ABB is a budgeting approach that aligns with ABC principles. Instead of simply allocating funds based on historical spending or departmental budgets, ABB allocates resources based on the activities that drive costs. This approach ensures that resources are allocated to activities that contribute the most value to the organization's objectives.
- 2. Cost-Centered Budgeting:** ABCM provides detailed cost information for each activity within the organization. This information can be used to develop cost-centered budgets, where budgets are allocated to specific activities or cost centers based on their resource needs and cost drivers.
- 3. Flexible Budgeting:** ABCM facilitates the development of flexible budgets that adjust based on changes in activity levels or cost drivers. By incorporating activity-based cost information into budgeting processes, organizations can develop more accurate and responsive budgets that reflect changes in business conditions.
- 4. Performance-Based Budgeting:** ABCM enables organizations to link budget allocations to performance metrics related to activities and cost drivers. This approach ensures that resources are allocated to activities that contribute the most value and achieve desired performance outcomes.

Overall, ABCM enhances decision-making processes by providing accurate cost information and insights into resource allocation. When applied in budgeting, ABCM helps organizations develop more accurate, responsive, and performance-driven budgets that support strategic objectives and improve overall financial management.

## LETS SUM UP

Activity-Based Costing (ABC) is highly relevant in decision-making as it provides accurate cost information by tracing costs to the activities that generate them, leading to better resource allocation and process improvements. This detailed cost information

aids managers in identifying inefficient processes, optimizing resource use, and making informed strategic decisions. In budgeting, ABC's application enhances precision by allocating costs based on actual activity levels, thus improving budget accuracy and accountability. By aligning costs with activities, ABC helps in setting realistic budgets, monitoring performance, and controlling costs more effectively, ultimately supporting financial planning and organizational efficiency.

### **Section 3.3 Check Your Progress- QUIZ -3**

#### **1. How does Activity-Based Costing (ABC) improve decision-making?**

- A) By simplifying financial reports
- B) By providing accurate cost information
- C) By increasing marketing efforts
- D) By reducing the need for managers

#### **2. What is a key benefit of ABC in budgeting?**

- A) Simplifies data collection
- B) Allocates costs based on actual activity levels
- C) Increases overhead costs
- D) Reduces employee training requirements

#### **3. In the context of ABC, what does tracing costs to activities help managers identify?**

- A) Employee performance levels
- B) Inefficient processes
- C) Customer satisfaction rates
- D) Market trends

#### **4. How does ABC enhance budget accuracy?**

- A) By reducing production volumes
- B) By aligning costs with activities
- C) By increasing employee salaries
- D) By expanding market presence

#### **5. Which of the following is a result of applying ABC in budgeting?**

- A) Decreased financial planning efforts
- B) Improved monitoring of performance
- C) Increased complexity in cost analysis
- D) Simplified accounting standards

### ILLUSTRATIONS

1. Sabari limited manufactures two products as A and B. The following are details

Particulars	A	B
Output in units	4,000	6,000
Labour hours per unit	2 Hrs	2 Hrs
Activities involved	100	300
Order processing:	5,000	6,000
No of orders		
Machine processing:		
No of hours		

#### Overhead cost:

Total overheads	Rs. 1,50,000
Order process cost	Rs. 40,000
Machine processing cost	Rs. 1,10,000

Find out overhead cost under traditional method and activity-based costing method.

#### Solution:

#### Computation of overhead rate:

Traditional method: overhead

$$\begin{array}{l} \text{Labour hours} \\ : \quad \underline{1,50,000} \qquad = \text{Rs. 7.5 Per hour} \\ \quad 20,000 \text{ hrs} \\ \quad (4,000 \times 2) + (6,000 \times 2) \end{array}$$

#### Activity based costing:

#### Computation of cost driver rate :

Machine processing rate : 1,10,000 Rs. 110

11,000 hrs

Order processing : 40,000 Rs. 400

400 orders

**2 . compute the cost driver rates from the following:**

Particulars of activities	Overhead cost
Material procurement cost	Rs. 8,00,000
Material handling cost	Rs. 5,00,000
Quality control cost	Rs. 6,00,000
Setting up cost	Rs. 4,00,000
Maintenance cost	Rs. 12,00,000

	Rs
No of orders	1,000
No of movements	2,000
No of setting up hours	500
No of inspections	800
Maintenance Hours	2,000

**Solution:****Computation of cost driver rates under ABC****1. Material procurement rate:Overhead relating to**

$$= \frac{\text{material procurement}}{\text{No of procurement orders}} = \frac{80,000}{1,000} = \text{Rs.800 per order}$$

**2. Material handling rate:**

$$= \frac{\text{material handling overhead}}{\text{Movements of materials}} = \frac{5,00,000}{2,000} = \text{Rs. 250 Per movement}$$

**3. Setting up cost rate:**

$$= \frac{\text{setting up overhead}}{\text{No of setting up hrs}} = \frac{60,000}{100} = 120 \text{ per setting up hour}$$

**4. Maintenance hour rate :**

$$= \frac{\text{overhead relating to maintenance}}{\text{Maintenance hours}} = \frac{12,00,000}{2,000 \text{ hrs}} = 600 \text{ Per maintenance hour}$$

**5. Quality control rate :**

$$= \frac{\text{overhead related to quality control}}{\text{Inspections in numbers}} = \frac{4,00,000}{800} = 500 \text{ per inspection}$$

3 . Manufacturing company produces two products M & N. The following details are provided for the year 2022.

Particulars	Product M	Product N
Yearly output	8,000 units	12,000 units
Machine hours	4 per unit	2 per unit
Labour hours	2 hrs per unit	3 per units (hours)
Total orders handled	25	50
Total set ups for the year	30	20

Total overhead cost per year :

	Rs
Relating to machine operations	4,00,000
Set ups	3,00,000
Orders handling	2,50,000

Compute the labours hours rate under traditional cost approach and cost driver rates under ABC method.

Solution:

Labour hour rates (under traditional method)

	Rs
Total overheads	9,50,000
Total labour hours	16,000
M : 8,000 x 2	36,000
N : 12,000 X 3	
	52,000

Labour hour rate :  $\frac{9,50,000}{52,000} = 18.26$  per hour

### Activity based costing (cost driver rate)

Machine hour rate =  $\frac{\text{machine overheads}}{\text{Machine hours}}$

Machine hours

Machine overheads = Rs. 4,00,000

Machine hours :

	Rs
M : 8,000 X 2	32,000
N : 12,000 X 2	24,000
	56,000

Machine hours rate : Rs. 7.14 per hour

Machine hour rate per unit :      Product M 7.14 x 4 = Rs. 28.56

  Product N 7.14 x 2 = Rs. 14.28

Rate per order                   :  $\frac{\text{overhead}}{\text{No of orders}}$

  No of orders

Overhead                         : Rs. 2,50,000

No of orders :

No of orders	
M	25
N	50
	75

Rate per unit :

$$\text{Product M} \quad : \quad \frac{25 \times 3.333}{8,000} = \text{Rs. } 10.417$$

$$\text{Product N} \quad : \quad \frac{15 \times 3.333}{12,000} = \text{Rs. } 0.0042$$

$$\text{Rate per order} \quad : \quad \frac{2,50,000}{75} = 3,333 \text{ per order}$$

Setup cost per order:

Overheads	3,00,000
Total set ups:	
M	30
N	20
	50

$$\text{Setup cost per order} : \frac{3,00,000}{50} = 6,000 \text{ per setup}$$

$$\text{Rate per unit : Product M} \quad : \quad \frac{6,000 \times 30}{8,000} = \text{Rs. } 22.5$$

$$\text{Product N} \quad : \quad \frac{6,000 \times 20}{12,000} = \text{Rs. } 10$$

4 . From the following particulars of Balaji ltd, find out the overhead cost per unit under traditional method and ABC method.

Particulars	Product 1	Product 2
Output in units	3,000	3,500
Direct material	275	400
Direct labour 25 per hour	100	200

Total overhead incurred Rs. 16,00,000

Total labour hours worked were 40,000 hours

The overhead incurred for different activities was as follows :

Cost pool activity	Overheads Rs	Cost volume driver	
		Product I	Product II
Material procurement	4,00,000	500 orders	300 orders
Quality control	5,00,000	220 inspections	280 inspections
Setup cost	3,00,000	140 set ups	160 set ups
Machinery oriented cost	4,00,000	600 hours	200 hours

### Solution:

#### Statement of cost under traditional method

Particulars	Product I	Product II
Direct material	275	400
Direct wages	100	200
Direct expenses	-	-
Add: overheads		
$\frac{16,00,000}{40} \times 4$	160	320
40,000		
$40 \times 8$		
Total cost	435	920

## Statement of cost under ABC method

## Computation of cost per cost driver

Particulars Cost pool activity	Volume of cost driver	Amount of overhead	Cost per cost driver
material procurement	800	4,00,000	500
quality control	500	5,00,000	1000
setup costs	300	3,00,000	1000
machine oriented costs	No of machine hours	4,00,000	500

## Computation of cost method under ABC method

Particulars	Product I	Product II
Direct material	275	400
Direct wages	100	200
Direct expenses	-	-
<b>Prime cost</b>	<b>375.00</b>	<b>600.00</b>
<b>Overheads</b>		
Material procurement	83.33	42.35
$\frac{500 \times 500}{3,000} : \frac{500 \times 300}{3,000}$	73.33	62.85
Quality control	100.00	28.57
$\frac{1,000 \times 220}{3,000} : \frac{1,000 \times 280}{3,500}$		
Set up cost		
$\frac{1,000 \times 140}{3,000} : \frac{1,000 \times 160}{3,500}$		
Machine oriented cost		
$\frac{500 \times 600}{3,000} : \frac{500 \times 200}{3,500}$		
<b>Cost per unit</b>	<b>678.33</b>	<b>779.98</b>

5. Z Ltd provides following information. Compute the cost per unit under traditional method and ABC method.

particulars	Product C	Product D	Volume of cost driver	C Rs	D Rs
Direct material per unit	225	250	Material requisition	40	20
Direct wages @ 50 per unit	250 50	300 150	Material hours Material movements	400 40	200 30
Direct expenses Output in units	8,000	4,000	Not set ups	90	70

Total overhead is Rs. 4,00,000

	Rs
Total material procurement cost	60,000
Total machine related cost	40,000
Material handling cost	1,40,000
Set up cost	1,60,000

**Solution:****Computation of cost and production under traditional method**

<b>Particulars</b>	<b>Product C</b>	<b>Product D</b>
Direct material	225	250
Direct wages	250	300
Direct expenses	50	150
Actual cost	52.5	700.00
Add : overhead :		
Labour hour basis (5 x 6.25) <u>4,00,000</u> = Rs. 6.25 64,000 hrs	31.25	37.50
Total cost	556.25	737.50

**Cost under ABC method****Computation of cost driver rate**

<b>Cost pool activity</b>	<b>Amount of overhead</b>	<b>Volume of cost driver</b>	<b>Rate per cost driver</b>
Material purchase	60,000	60	1,000
Machine related cost	40,000	600	66,667
Material handling cost	1,40,000	70	2,000
Set up costs	1,60,000	160	1,000

### Computation of cost per unit under ABC method

Particulars	Products	
	C	D
Direct materials	225	250
Direct wages	250	300
Direct expenses	50	150
Prime cost 1	525	700
Add : overheads:		
Material procurement	1,000 x 40 = 40,000	1,000 x 20 = 20,000
Machine related cost	400 x 66,667 = 26,667	200 x 66,667 = 13,333
Material handling cost	2,000 x 40 = 80,000	2,000 x 30 = 60,000
Set up costs	1,000 x 90 = 90,000	1,000 x 70 = 70,000
Total overheads	2,36,666	1,63,334
II Overhead per unit	<u>2,36,667</u> = 2,958 8,000 units	<u>1,63,334</u> = 4,083 4,000
Cost per unit I = II	Rs. 55,458	Rs. 74,083

6. A company makes two products X & Y, provides the following particulars.

Particulars	Output	Machine hours (Per unit)	Direct labour hours (per unit)	Total number of order handled
X	4,000	2	2	20
Y	6,000	2	2	30

Annual overhead cost :

	Rs.
Relating to machines	1,60,000
Relating to handling orders	40,000
	2,00,000

**Compute the production overhead by X & Y by one unit**

**Solution:**

**Traditional method**

$$\text{Labour rate : overhead} \quad \frac{\text{overhead}}{\text{Labour hours}} = \frac{2,00,000}{20,000 \text{ hrs}} = \text{Rs. } 20$$

**Activity based costing:**

$$\text{Machine hour rate :} \quad \frac{1,60,000}{20,000} = \text{Rs. } 8 \text{ per hour}$$

$$\text{Rate per unit : X} = 8 \times 2 = 16$$

$$Y = 8 \times 2 = 16$$

$$\text{Rate per order :} \quad \frac{40,000}{5} = \text{Rs. } 800$$

5

$$\text{Rate per unit : product X :} \quad \frac{20 \times 800}{4,000} = \text{Rs. } 4$$

4,000

$$\text{Product Y :} \quad \frac{30 \times 800}{6,000} = \text{Rs. } 4$$

6,000

**7 . A firm produces two products T & S and provides following details.**

products	Output in units Rs	Total machine hours Rs	Total orders handled Rs	Total no of set ups Rs
T	40,000	20,000	150	30
S	50,000	1,30,000	450	50

**Details relating to overhead as follows:**

Volume related overheads	Rs. 4,00,000
Setting up related overheads	Rs. 2,00,000
Order handling cost	Rs. 2,00,000

**Compute the overhead absorption rate :**

- Under traditional method
- under ABC method

**Solution :**

Overhead absorption rate under traditional method

$$\begin{aligned} \text{Machine hour rate} &= \frac{\text{total overhead}}{\text{machine hours}} \\ &= \frac{9,00,000}{1,50,000 \text{ hrs}} = \text{Rs. 6 Per hour} \end{aligned}$$

$$\text{Rate per unit : product T} = \frac{6 \times 20,000}{40,000} = \text{Rs. 3}$$

$$\text{Product S} = \frac{6 \times 1,30,000}{50,000} = \text{Rs. 15.6}$$

**Cost driver rates under ABC method :**

$$\text{Machine hour rate} = \frac{\text{overhead in connection with volume}}{\text{Machine hours}}$$

(Under volume related activity)

$$= \frac{4,00,000}{1,50,000 \text{ hrs}} = 2.67 \text{ per hours}$$

$$\text{Rate per unit : product T} = \frac{2.67 \times 20,000}{40,000} = \text{Rs. 1.30}$$

$$\text{Product S} = \frac{2.67 \times 1,30,000}{50,000} = \text{Rs. 6.942}$$

$$\text{Cost per handling orders} = \frac{\text{overhead in handling overhead}}{\text{No of orders handled}}$$

$$\frac{3,00,000}{600} = \text{Rs. 500 per order}$$

600

Rate per unit : product T =  $\frac{150 \times 500}{40,000} =$  Rs. 1.875

40,000

Product S =  $\frac{450 \times 500}{40,000} =$  Rs. 4.5

40,000

Cost per setting up = overhead relating to setting up

No of setting ups

=  $\frac{2,00,000}{80}$  Rs. 2,500 per setup hour

80

Cost per unit : product T =  $\frac{2,500 \times 30}{40,000} =$  Rs. 1.875

40,000

Product S =  $\frac{2,500 \times 50}{50,000} =$  Rs. 2.5

50,000

8. A firm is producing three products and these products are produced in production runs of 20 units and sold in batch of 10 units. The details of the products are given below.

particulars	M Rs	N Rs	O Rs
Production in units	200	220	240
Cost per unit:	50	80	60
Direct material	40	55	45
Direct labour	10	20	10
Machine hour rate per unit			

The factory overhead during the period are as follows:

	Rs
Production expenses	40,000
Storing cost	25,000
Machine setting up cost	35,000
Expenses relating to quality maintenance	45,000
Material movement and disposal cost	22,000
	1,67,000

The cost drivers for the above overhead expenses are follows:

Production expenses	Machine hours
Storage cost	Requisitions
Machine setting up cost	Production runs
Quality maintenance	Production runs
Material movement and disposal	No of orders executed

No of requisition raised for each product is 50, no of orders are 160 and each order was in a batch of 10 units.

### Compute the following :

1. Cost of each product under conventional method by using absorption of overhead on the basis of machine hour rate.
2. Cost of each product under activities based costing.
3. state the difference between two methods.

### Solution:

#### Statement of cost under traditional method products

particulars	Products		
	M 200 units	N 220 units	O 240 units
Direct material I	50	80	60
Direct labour II	40	55	45

Machine hours per unit	10	20	10
Total machine hours	2,000	4,400	2,400
	Rs	Rs	Rs
Overheads per machine hours	18.977	18.977	18.977
<u>1,67,000</u>			
8,800			
Overheads cost per unit III	189.77	379.54	189.77
Works costs I + II + III	79.77	514.54	294.77

Computation of cost driver rate under activity-based costing

$$\begin{aligned} \text{Production expenses per hour} &= \frac{\text{production overhead}}{\text{No of machine hours}} \\ &= \frac{40,000}{8,800} = \text{Rs. } 4,545 \end{aligned}$$

$$\begin{aligned} \text{Storage cost} &= \frac{\text{storage cost}}{\text{Material acquisition}} \\ &= \frac{25,000}{150} = 166.67 \end{aligned}$$

$$\begin{aligned} \text{Machine setup costs} &= \frac{\text{machine set up costs}}{\text{Production runs}} \\ &= \frac{35,000}{33} = \text{Rs. } 1,060 \end{aligned}$$

$$\begin{aligned} \text{Expenses related to quality maintenance} &= \frac{\text{cost}}{\text{No of production runs}} \\ &= \frac{45,000}{33} = \text{Rs. } 1,364 \end{aligned}$$

$$\begin{aligned} \text{Material movement and dispatch cost} &= \frac{\text{cost}}{\text{Orders executed}} \\ &= \frac{22,000}{160} = \text{Rs. } 137.5 \end{aligned}$$

### Computation of cost under activity-based costing

Particulars	M	N	O
Output in units	200	220	240
	Rs	Rs	Rs
Direct material	50	80	60
Direct labour	40	55	45
Direct expenses	-	-	-
<b>Prime cost</b>	<b>90</b>	<b>135.00</b>	<b>105.00</b>
Add : overheads	45.45	90.9	45.45
Production expenses	41.667	37.88	34.722
Storage costs:	53.00	53.00	53.00
<u>50 x 166.67</u>	68.20	68.20	68.20
200 or 220 or 240	13.75	13.75	13.75
Machine setup costs:			
<u>1060 x 10</u> or <u>1060 x 11</u> or <u>1060 x 12</u>			
200 units      220      240			
Quality control cost:			
<u>1364 x 10</u> or <u>1364 x 11</u> or <u>1364 x 12</u>			
200      220      240			
Material handling and discharge			
<u>135.7</u>			
10 units			
<b>Total cost per unit</b>	<b>312.067</b>	<b>398.73</b>	<b>320.172</b>

**Statement of comparative cost**

<b>Particulars</b>	<b>M</b>	<b>N</b>	<b>O</b>
	<b>Rs</b>	<b>Rs</b>	<b>Rs</b>
Cost per unit under :			
Machine hour rate	108.977	153.977	123.977
Cost per unit under ABC	312.067	398.73	320.172

**Difference is that N consumes more than machine hours.**

**9. Bheem Ltd produces three products, details are which are as follows.**

<b>Particulars</b>	<b>X</b>	<b>Y</b>	<b>Z</b>
Output in units	300	350	400
Direct material	Rs	Rs	Rs
Direct wages	90,000	1,05,000	90,000
Direct expenses	45,000	70,000	1,35,000
Labour hours	30,000	35,000	45,000
Production overhead are absorbed at			
Rs.10 per labour hour	4,500	7,000	13,500
	45,000	70,000	1,35,000

The products are produced in runs of 10 units and sold in batches of 20 units. The overhead cost is as follows:

<b>Activity</b>	<b>Cost drivers</b>	<b>Extent</b>	<b>Cost</b>	<b>drivers</b>	<b>Amount</b>
					<b>RS.</b>
Production overhead	Labour hours	4,500	7,000	13,500	2,50,000
	Stores requisition	50	30	20	10,000

Storage cost	Purchase requisition	10	15	25	25,000
Material	No of production runs	30	35	45	1,10,000
procurement	No of orders executed	15	17.5	22.5	1,10,000
Setup costs					
Material					
dispatch					

**Compute :**

1. The cost under traditional method by applying labour hour method.
2. The cost under ABC method.
3. Find the comparative cost.

**Solution:**

**Statement of cost under traditional method**

particulars	X		Y		Z	
	Total	Per unit	total	Per unit	Total	Per unit
Units produced	300		350		450	
	Rs	Rs	Rs	Rs	Rs	Rs
Direct material	90,000	300	1,05,000	300	90,000	200
Direct wages	45,000	150	70,000	200	1,35,000	300
Overheads	45,000	150	70,000	200	1,35,000	300
<b>Total cost</b>	<b>2,10,000</b>	<b>700</b>	<b>2,80,000</b>	<b>800</b>	<b>1,05,000</b>	<b>900</b>

### Computation cost of cost driver under ABC method

Particular of activity	Cost driver	Cost per cost driver
Production overhead	Labour hours	$\frac{2,50,000}{100} = \text{Rs.}10$ per hour
Stores cost	Stores requisition	25,000
Material procurement cost	Purchase requisition	$\frac{10,000}{100} = \text{Rs.}100$ per requisition
Setup costs	Runs based on units	$\frac{25,000}{50} = \text{Rs.}500$ per requisition
Material dispatch	per run	50
	No of orders executed	$\frac{1,10,000}{110} = \text{Rs.}1,000$ per run
		110
		$\frac{96,000}{35} = \text{Rs.}2,742.86$ Per order
		35

### Statement of cost under ABC method

Particulars	X	X	Y	Y	Z	Z
Output in units	300	Per	350	Per	450	Per
Direct material	Rs	unitRs	Rs	unitRs	Rs	unitRs
	90,000	300	1,05,000	300	90,000	200
Direct wages	45,000	150	70,000	200	1,35,000	300
Direct expenses	30,000	100	35,000	100	45,000	100
Production overheads	45,000	150	70,000	200	1,35,000	100
Rs.10 per hour	5,000	16.67	3,000	8.57	2,000	4.44
Storage cost	5,000	100	7,500	21.42	12,500	27.77
50 : 30 : 20	30,000	100	35,000	100	45,000	100
Material procurement cost	30,000	100	35,000	100	45,000	100
10 : 15 : 25	30,000	100	35,000	100	45,000	100
Setup costs	30,000	100	35,000	100	45,000	100
30 : 35 : 45						
Material dispatch						
<b>Cost per unit</b>		<b>1,016.67</b>		<b>1,029.99</b>		<b>932.21</b>

**Comparative cost**

<b>Particulars</b>	<b>X</b>	<b>Y</b>	<b>Z</b>
	Rs	Rs	Rs
Traditional method	700	800	900
Cost per unit under ABC method	1,016.67	1,029.99	932.29
<b>Difference</b>	<b>316</b>	<b>229.99</b>	<b>32.21</b>

**All three products consume more labour hours and material dispatch and setup costs.**

**3.4 UNIT SUMMARY**

Activity-Based Cost Management (ABCM) is a strategic approach that focuses on managing business activities to improve cost efficiency and resource allocation. The key components of ABCM include identifying and analyzing activities, assigning costs to these activities, and allocating costs to products or services based on their usage of activities. The concept of ABCM revolves around understanding the relationship between activities, resources, and costs to provide more accurate cost information and insights for decision-making. Important terms in Activity-Based Costing (ABC) include cost drivers, activity cost pools, and cost objects. The stages of ABC include identifying activities, assigning costs, determining cost drivers, calculating activity rates, and applying these rates to cost objects. Advantages of ABC include improved cost accuracy, better understanding of overheads, and enhanced decision-making, while disadvantages include being time-consuming and costly to implement. The purpose of ABC is to provide precise cost information for better managerial decisions, with benefits such as more accurate product costing and improved resource allocation. ABC is highly relevant in decision-making and budgeting, as it helps set realistic budgets, monitor performance, and control costs effectively, thereby supporting financial planning and organizational efficiency.

### 3.5 GLOSSARY

1.	<b>Activity-Based Cost Management (ABCM):</b> A method that focuses on managing business activities to improve cost efficiency and resource allocation.
2.	<b>Activity-Based Costing (ABC):</b> A costing methodology that assigns costs to products and services based on the resources they consume and the activities involved in their production.
3.	<b>Activities:</b> Specific tasks or processes within an organization that consume resources and contribute to the production of goods or services.
4.	<b>Cost Drivers:</b> Factors that cause costs to increase or decrease, used to assign costs to activities in ABC.
5.	<b>Activity Cost Pools:</b> Groups of individual costs associated with particular activities, used to accumulate costs before they are allocated to cost objects.
6.	<b>Cost Objects:</b> Items or entities such as products, services, or customers that incur costs and are the focus of cost assignment in ABC.
7.	<b>Stages of ABC:</b> The steps involved in Activity-Based Costing, including identifying activities, assigning costs, determining cost drivers, calculating activity rates, and applying these rates to cost objects.
8.	<b>Assigning Costs:</b> The process of allocating costs to specific activities based on the resources they consume.
9.	<b>Determining Cost Drivers:</b> Identifying the factors that cause costs to be incurred for specific activities.
10.	<b>Calculating Activity Rates:</b> The process of determining the cost per unit of activity, used to assign costs to cost objects.
11.	<b>Applying Rates to Cost Objects:</b> Using activity rates to allocate costs to products, services, or customers based on their consumption of activities.
12.	<b>Overheads:</b> Indirect costs that are not directly attributable to specific products or services, such as administrative expenses.

13.	<b>Resource Allocation:</b> The process of distributing resources such as money, personnel, and equipment among various activities or departments within an organization.
14.	<b>Process Efficiency:</b> The effectiveness with which activities are performed, aiming to maximize output while minimizing waste and costs.
15.	<b>Cost Behavior:</b> The way costs change in response to changes in business activity levels.
16.	<b>Strategic Planning:</b> The process of defining an organization's strategy and making decisions on allocating resources to pursue this strategy.
17.	<b>Budgeting:</b> The process of creating a plan to spend money, outlining expected revenues and expenditures over a specific period.
18.	<b>Performance Monitoring:</b> Tracking and evaluating the performance of various activities and processes to ensure they align with organizational goals.
19.	<b>Financial Planning:</b> The task of determining how a business will afford to achieve its strategic goals and objectives.
20.	<b>Organizational Efficiency:</b> The ability of an organization to achieve its goals with minimal waste of resources, time, and effort.

## .6 SELF ASSESSMENT QUESTIONS (5 MARKS)

1.	Explain the concept of Activity-Based Cost Management (ABCM) and its significance in modern businesses.
2.	Describe the key components of Activity-Based Cost Management and how they contribute to cost efficiency.
3.	Discuss the stages involved in implementing Activity-Based Costing (ABC) in an organization.
4.	What are the advantages and disadvantages of using Activity-Based Costing (ABC)? Provide examples to support your points.
5.	How does Activity-Based Cost Management (ABCM) enhance decision-making and what is its application in budgeting? Provide a detailed explanation.

**SELF ASSESSMENT QUESTIONS 10 MARKS**

1.	Discuss the key stages involved in implementing Activity-Based Costing (ABC) in an organization.
2.	Explain the concept of Activity-Based Cost Management (ABCM) and compare it with traditional costing methods.
3.	Describe the process of assigning costs to activities in Activity-Based Costing (ABC).
4.	Discuss the role of cost drivers in Activity-Based Costing (ABC). How are cost drivers identified and used to allocate costs to activities?
5.	Examine the application of Activity-Based Costing (ABC) in budgeting. How does ABC improve budget accuracy and support effective financial planning?

**3.7 ACTIVITIES AND ASSIGNMENT****EXERCISES****Computation of cost driver rate:**

1. H Ltd. has following details relating to overhead cost. Find out the cost driver rate.

Activities	Amount of overheads Rs.	Cost driver	Product L Rs	Product M Rs
Power cost	6,50,000	Machine hours	5,000	15,000
Material procurement	4,50,000	No of orders	300	150
Quality control	3,00,000	No of inspections	200	100
Purchase orders	5,00,000	Purchase orders	400	100
Setup costs	4,00,000	No of setups	200	200

**(Ans : cost driver rates:**

1. Power cost : Rs. 100 per hour per MH
2. Material procurement : Rs. 1,000 per order

3. Quality control : Rs. 1,000 per inspection
4. Purchase order cost : Rs. 100 per order
5. Set up cost : Rs. 1,000 per order )

2. The following are the details of overhead relating to ashok Ltd.

Compute the cost per cost driver volume.

Cost pool activity	Amount of overhead	Volume of activity	Products	
			A	B
Works expenses	40,0000	Machine hours	1,200	800
Material cost	50,000	Requisition of material	250	250
Inspection	80,000	No of inspections	200	200
Material handling	60,000	Number of order	100	300
dispecified				

(Ans : Cost driver rates

1. works expenses : Rs. 20
2. material cost : Rs. 100
3. inspection : Rs. 200
4. material handling : Rs. 150)

3. Compute cost per cost driver rate from the following:

Activity	Cost driver	Cost incurred Rs.
Processing of orders	No of purchase orders : 150	45,000
Delivery	No of regular deliveries : 200	90,000
Sales visits	Customer visits : 400	1,60,000

(Ans ; rate per purchase order : Rs. 300

Rate per delivery : Rs. 450 Cost per customer visits : Rs. 400)

4. From the following details of a company producing two different equipment, find the cost driver rates.

Activity	Extent of cost driver	Overhead cost
Procurement	Orders processed being:	2,50,000
Inspection	X 400	4,50,000
	Y 500	
	Inspection hours	
	X 1,000	
	Y1,200	

(Ans : cost driver rate procurement : Rs. 277

Inspection : Rs. 204.5)

**5. Total annual overheads are as below:**

Volume related activity: Rs. 4,00,000, Setup related activity Rs.

2,00,000. Order handling cost: Rs. 3,00,000

Compute the cost overhead absorption rate

a) traditional method

b) activity based method

(Ans : Machine hour rate under conventional method:

$$\frac{\text{Total overhead}}{\text{Total machine hours}} = \frac{9,00,000}{1,50,000} = \text{Rs. 6}$$

Cost driver rates under ABC :

1. Machine hour =  $\frac{\text{Overhead under volume related activity}}{\text{Machine hours}}$

$$= \frac{4,00,000}{1,50,000} = 2.67$$

2. cost per handling =  $\frac{3,00,000}{600} = \text{Rs. 500}$

3. cost per setup =  $\frac{2,00,000}{80} = \text{Rs. 2,500}$

**6. Find out cost driver rates.**

Material procurement Rs. 8,00,000, material handling cost :

Rs. 5,00,000. Setup cost Rs. 6,00,000. Maintenance cost Rs. 12,00,000.

Quality control cost	:	Rs. 4,00,000
No of orders	:	1,000
No of movements	:	2,000
Maintenance hours	:	2,000
No of set ups	:	500
No of inspections	:	800

(Ans: cost driver rates : procurement rate:  $\frac{8,00,000}{1,000} = \text{Rs. } 800$

$\frac{5,00,000}{2,000} = \text{Rs. } 250$

Material handling rate :  $\frac{5,00,000}{2,000} = \text{Rs. } 250$

$\frac{6,00,000}{500} = \text{Rs. } 120$

Setup rate :  $\frac{6,00,000}{500} = \text{Rs. } 120$

Maintenance :  $\frac{1,20,000}{2,000} = 600$

Quality control :  $\frac{4,00,000}{800} = 500$

Quality control :  $\frac{4,00,000}{800} = 500$

7. calculate cost driver rate for the following:

Arvind & co has computed the following data for its activities.

Activity	Cost driver	Consumption Rs	Cost Rs
Power	Kilowatt hours	80,000	4,00,000
Inspection	Inspection in numbers	40,000	6,00,000

The organisation makes three different products. The consumption of cost drivers is as follows:

product	Kilowatt hours Rs	Inspection quality Rs
M	15,000	5,000
N	20,000	4,000
O	25,000	3,000

(Ans : computation of rate per cost driver :

Power :  $\frac{4,00,000}{60,000} = 6.67$  per kilowatt hours

Quality inspection :  $\frac{6,00,000}{12,000} = 50$  per inspection)

8. The overhead and cost drives of Ajay Ltd is as follows:

Cost pools	overheads	Cost driver	Volume of cost driver
Machine overheads	80,000	Machine hours	5,000 hours
Maintenance	60,000	Maintenance hours	1,200 hours
Quality control	40,000	No of inspections	800
Material transport	20,000	Material movements	500

The company has produced a component whose material cost is Rs. 1,25,000. Direct wages Rs. 75,000. Direct expenses Rs. 10,000. The activities usage volume is as follows:

	Rs
Machine hours	250
Maintenance hours	50
Inspection	40
Material movements	75

Find out the total cost under ABC method.

Ans: cost driver rates:

Machine hour rate : Rs. 16 per hour

Maintenance rate : Rs. 50 per hour

Quality control :

Rate per instruction: Rs. 50

Material movement rate : Rs. 40

Total cost per unit of component: Rs. 2,21,500

(1,25,000 + 75,000 + 10,000 + 4,000 + 2,500 + 2,000 + 3,000)

**(B) Computation of cost per unit:**

9. A firm makes two products Q & R using common facilities. The cost pools and other details are furnished below. Compute the overhead absorption per unit using activity based costing.

Particulars	Product Q	Product R	Common expenses	Rs
Output In units	800	1,200	Machine activity	1,44,000
Machine hours per unit	3	4	expenses	1,10,000
Labour hour per unit	5	6	Setting up	1,20,000
Machine setting up	60	50	expenses	
hours	20	30	Order related	
No of orders dispatched			expenses	

**Ans : cost driver rates:**

**Machine activity exp. Per hour : Rs. 20**

**Selling up expenses per setup : Rs. 1,000**

**Order dispatch cost per order : Rs. 2,400**

**Cost per unit**

**Product Q : Rs. 195**

$$(2,400 \times 20 + 60 \times 1,000 + 2,400 \times 20) = \underline{156000}$$

800

**Product R : Rs. 181**

$$(4,800 \times 20 + 50 \times 1,000 + 30 \times 2,400) = \underline{2.18.000}$$

1,200

10. From the following information of the company, prepare the overheads cost under conventional method and ABC method. The company makes two products, T and S.

Products	Units produced	No of orders	labour	Inspection	Machine

T S	12,000	40	Hours per unit	25	Hours Per unit
	14,000	50	4	75	4
			5		3

The total overhead of the company is 12,00,000. Which are related to machine activity. No of orders handled and inspection being 4,00,000, 6,00,000 and 2,00,000.

(Ans : overhead absorption rate under conventional method,

Labour hour rate is : Rs. 10.16 12,00,000

1,18,000

Overhead per unit T : 40.64 (10.16 x 6)

S : 50.80 (10.16 x 5)

Overhead absorption rate under activity based costing

Cost driver rates :

Machine hours : Rs. 4.44 = 4,00,000

90,000

Rate per under : Rs. 6,666.6 = 6,00,000

90

Rate per inspection : Rs. 2,000 = 2,00,000

100

Cost per unit T : Rs. 30.828 (4.44 x 12,000 + 40 x 6,666.6 + 25 x 2,000 )

12,000 units

S : Rs. 38.96 (4.44 x 14,000 + 50 x 6,666.6 + 75 x 2,000 )

14,000

11. The manufacturing overheads of Arun & co is as follows :

Units produced : 1,000

Machine oriented activity cost : Rs. 1,35,400

Machine hours two hours per unit.

Machine ordering overheads Rs. 7,000. Number of material order 100

What is the overhead cost driver rate under ABC method?

(Ans : cost driver rates :

Machine oriented rate activity : 135400 = 67.5 per hour

2,000 hrs

Rate per unit =  $67.5 \times 2 \text{ hrs} = \text{Rs. } 135$ Material order rate :  $\frac{7,000}{100} = \text{Rs. } 70 \text{ per order}$ Rate per unit =  $\frac{70 \times 100 \text{ or hrs}}{1,000 \text{ units}} = \text{Rs. } 7$ **3.8 Answers for Check Your Progress**

<b>3.1 Section Activity-based cost management (ABCM) QUIZ – 1</b>	
<b>Q.1</b>	b) Managing business activities to improve cost efficiency
<b>Q.2</b>	a) Identifying and analyzing activities
<b>Q.3</b>	b) A factor that causes costs to increase or decrease
<b>Q.4</b>	b) A collection of costs associated with a particular activity
<b>Q.5</b>	a) Items or entities that incur costs
<b>3.2 Section Stages of Activity Based Costing QUIZ</b>	
<b>Q.1</b>	b) Identifying activities
<b>Q.2</b>	b) To provide more accurate cost information
<b>Q.3</b>	b) Improved cost accuracy
<b>Q.4</b>	c) It is time-consuming and costly to implement
<b>Q.5</b>	a) Enhanced product costing precision
<b>Section 3.3: Relevance in Decision making and its Application in Budgeting QUIZ – 3</b>	
<b>Q.1</b>	b) By providing accurate cost information
<b>Q.2</b>	b) Allocates costs based on actual activity levels
<b>Q.3</b>	b) Inefficient processes
<b>Q.4</b>	b) By aligning costs with activities
<b>Q.5</b>	b) Improved monitoring of performance

**Reference and Suggested Readings**

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3. Arora M. N., (2021), “A Text Book of Cost and Management Accounting”, 11<sup>th</sup>Edition, Vikas Publishing House Pvt. Ltd., New Delhi

<b>Unit 4 - Transfer Pricing</b>
Transfer Pricing: Meaning, Benefits, Methods: Pricing based on cost, Market price on transfer price, Negotiated pricing and Pricing based on opportunity costs – Practical Problems.

## TRANSFER PRICING

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## UNIT OBJECTIVES

The main objectives of this units is Transfer pricing has become necessary in highly decentralized companies where number of divisions/departments are created as a part and parcel of the decentralized organisation. Transfer pricing is one of the tools in the hands of management for measuring the performance of divisions or departments.

## 4.1 Meaning of Transfer Pricing

In the modern days, production is on the mass scale due to technological advancement and up gradation. Organisations grow in course of time and for such growing organisations, decentralization becomes absolutely necessary. It becomes inevitable for such organisations to establish separate divisions and departments to ensure smooth working. Transfer pricing has become necessary in highly decentralized companies where number of divisions/departments are created as a part and parcel of the decentralized organisation. Transfer pricing is one of the tools in the hands of management for measuring the performance of divisions or departments.

A 'Transfer Price' is that notional value at which goods and services are transferred between divisions in a decentralized organisation. Transfer prices are normally set for intermediate products, which are goods, and services that are supplied by the selling division to the buying division. In large organisations, each division is treated as a 'profit center' as a part and parcel of decentralization. Their profitability is measured by fixation of 'transfer price' for inter divisional transfers.

Transfer pricing refers to the pricing of goods, services, or intangible assets transferred within a multinational company (MNC) or between related entities. These related entities could be subsidiaries, divisions, or branches located in different countries. The primary objective of transfer pricing is to determine the fair and equitable price for these transactions as if they were taking place between independent parties. However, within a multinational corporation, the transactions often involve entities that are under common control, which can create opportunities for tax optimization and profit shifting.

Transfer pricing plays a crucial role in international taxation because it affects the allocation of taxable income among different jurisdictions. Tax authorities pay close attention to transfer pricing to ensure that multinational companies do not manipulate prices to shift profits to low-tax jurisdictions artificially.

To address transfer pricing issues and prevent tax avoidance, many countries have established regulations and guidelines based on the arm's length principle. This principle requires that transfer prices between related entities should be set at a level that would be charged between unrelated parties under similar circumstances.

Companies engaging in cross-border transactions must carefully document their transfer pricing policies and practices to comply with regulations and demonstrate that their

transfer pricing arrangements are consistent with the arm's length principle. Failure to adhere to transfer pricing rules can lead to disputes with tax authorities and potentially significant tax penalties.

The transfer price can have impact on the division's performance and hence lot of care is to be taken in fixation of the same. The following factors should be taken into consideration before fixing the transfer prices.

1. Transfer price should help in the accurate measurement of divisional performance.
2. It should motivate the divisional managers to maximize the profitability of their divisions.
3. Autonomy and authority of a division should be ensured.
4. Transfer Price should allow 'Goal Congruence' which means that the objectives of divisional managers match with those of the organisation.

#### **4.1.2 Objectives of Inter Company Transfer Pricing**

The following are the main objectives of intercompany transfer pricing scheme:

##### **1. To evaluate the current performance and profitability of each individual unit:**

This is necessary in order to determine whether a particular unit is competitive and can stand on its working. When the goods are transferred from one department to another, the revenue of one department becomes the cost of another and such inter transfer price affects the reported profits.

##### **2. To improve the profit position :**

Intercompany transfer price will make the unit competitive so that it may maximize its profits and contribute to the overall profits of the organisation.

##### **3. To assist in decision making :**

Correct intercompany transfer price will make the costs of both the units realistic in order to take decisions relating to such problems as make or buy, sell or process further, choice between alternative methods of production.

##### **4. For accurate estimation of earnings on proposed investment**

**decisions:**

When finance is scarce and it is required to determine the allocation of scarce resources between various divisions of the concern taking into consideration their competing claims, then this technique is useful. Transfer pricing refers to the pricing of goods, services, and intangibles transferred within divisions of the same company, especially across international borders. Its primary objective is to allocate income among different branches of a multinational enterprise (MNE) to ensure that profits are correctly reflected where economic activities generating the profits are performed and where value is created. This helps in aligning intra-company pricing with market rates, thereby preventing tax evasion and profit shifting. Additionally, effective transfer pricing ensures compliance with local tax regulations, reduces the risk of double taxation, and facilitates better resource allocation and financial performance assessment within the company.

**Let's sum up**

Transfer pricing is the process of setting prices for goods, services, or intangible assets exchanged between divisions within the same organization, particularly in decentralized companies. It serves as a tool for performance measurement, cost control, and resource allocation while fostering goal alignment among divisions. Additionally, transfer pricing can help optimize tax liabilities across different regions, but must comply with legal guidelines. Overall, it helps management evaluate divisional performance and make strategic decisions that align with the organization's broader objectives.

**Section 4.1 Check Your Progress QUIZ -1**

- 1. What is transfer pricing?**
  - A. The pricing of goods, services, and intangibles transferred within divisions of the same company
  - B. The pricing strategy used by companies to set prices for external, customers
  - C. The process of setting prices for stocks and bonds
  - D. The method of calculating employee salaries and bonuses
- 2. One of the primary objectives of transfer pricing is to:**
  - A. Increase sales to external customers

- B. Allocate income among different branches of a multinational enterprise
- C. Reduce production costs
- D. Enhance brand visibility

**3. Transfer pricing helps in:**

- A. Aligning intra-company pricing with market rates
- B. Increasing the overall tax liability of a company
- C. Decreasing the number of employees in a company
- D. Setting external market prices for goods and services

**4. Effective transfer pricing ensures compliance with:**

- A. Employment laws
- B. Environmental regulations
- C. Local tax regulations
- D. International trade laws

**5. Which of the following is a benefit of proper transfer pricing?**

- A. It guarantees increased profits for the company
- B. It eliminates the need for financial reporting
- C. It reduces the risk of double taxation
- D. It ensures lower production costs

## 4.2 Methods of Transfer Pricing

It is the notional value of goods and services transferred from one division to other division. In other words, when internal exchange of goods and services take place between the different divisions of a firm, they have to be expressed in monetary terms. The monetary amount for those inter divisional exchanges is called as 'transfer price'. The determination of transfer prices is an extremely difficult and delicate task as lot of complicated issues are involved in the same. Inter division conflicts are also possible. There are several methods of fixation of 'Transfer Price'. They are discussed below.

1. Pricing based on cost
  - Actual cost
  - Cost plus
  - Standard cost
  - Marginal cost
2. Market price as transfer price

3. Negotiate pricing
4. Pricing based on opportunity cost

### 1. Pricing based on cost:

In these methods, 'cost' is the base and the following methods fall under This category.

**(a) Actual Cost:** Under this method the actual cost of production is taken as transfer price for inter divisional transfers. Such actual cost may consist of variable cost or sometimes total costs including fixed costs.

**(b) Cost Plus:** Under this method, transfer price is fixed by adding a reasonable return on capital employed to the total cost. Thereby the measurement of profit becomes easy.

**(c) Standard Cost:** Under this method, transfer price is fixed on the basis of standard cost. The difference between the standard cost and the actual cost being variance is absorbed by transferring division. This method is simple and easy to follow, but the constant revision of standards is necessary at regular intervals.

**(d) Marginal Cost:** Under this method, the transfer price is determined on the basis of marginal cost. The reason being fixed cost is in any case unavoidable and hence should not be charged to the buying division. That is why only marginal cost will be taken as transfer price.

### 2. Market price as transfer price:

Under this method, the transfer price will be determined according to the market price prevailing in the market. It acts as a good incentive for efficient production to the selling division and any inefficiency in production and abnormal costs will not be borne by the buying division. The logic used in this method is that if the buying division would have purchased the goods/services from the open market, they would have paid the market price and hence the same price should be paid to the selling division. One of the variations of this method is that from the market price, selling and distribution overheads should be deducted and price thus arrived should be charged as transfer price. The reason behind this is that no selling efforts are required to sell the goods/services to the buying division and therefore these costs should not be charged to the buying division. Market price based transfer price has the following advantages :

1. Actual costs are fluctuating and hence difficult to ascertain. On the other hand market prices can be easily ascertained.

2. Profits resulting from market price based transfer prices are good parameters for performance evaluation of selling and buying divisions.
3. It avoids extensive arbitration system in fixing the transfer prices between the divisions.

**However, the market price-based transfer pricing has the following limitations:**

1. There may be resistance from the buying division. They may question buying from the selling division if in any way they have to pay the market prices.
2. Like cost-based prices, market prices may also be fluctuating and hence there may be difficulties in fixation of these prices.
3. Market price is a rather vague term as such prices may be ex-factory price, wholesale price, retail price etc.
4. Market prices may not be available for intermediate products, as these products may not have any market.
5. This method may be difficult to operate if the intermediate product is for captive consumption.
6. Market price may change frequently.
7. Market prices may not be ascertained easily.

**3. Negotiated Pricing:** Under this method, the transfer prices may be fixed through negotiations between the selling and the buying division. Sometimes it may happen that the concerned product may be available in the market at a cheaper price than charged by the selling division. In this situation the buying division may be tempted to purchase the product from outside sellers rather than the selling division. Alternatively, the selling division may notice that in the outside market, the product is sold at a higher price but the buying division is not ready to pay the market price. Here, the selling division may be reluctant to sell the product to the buying division at a price, which is less than the market price. In all these conflicts, the overall profitability of the firm may be affected adversely. Therefore, it becomes beneficial for both the divisions to negotiate the prices and arrive at a price, which is mutually beneficial to both the divisions. Such prices are called as 'Negotiated Prices'. In order to make these prices effective care should be taken that both, the buyers and sellers should have access to the available data including about the alternatives available if any. Similarly, buyers and sellers should be free to deal outside the company, but care should be taken that the overall interest of the organisation is not

affected.

- The main limitation of this method is that lot of time is spent by both the negotiating parties in fixation of the negotiated prices.
- Negotiating skills are required for the managers for arriving at a mutually acceptable price, otherwise there is a possibility of conflicts between the divisions.

**4. Pricing based on opportunity cost:** This pricing recognizes the minimum price that the selling division is ready to accept and the maximum price that the buying division is ready to pay. The final transfer price may be based on these minimum expectations of both the divisions. The most ideal situation will be when the minimum price expected by the selling division is less than the maximum price accepted by the buying division. However in practice, it may happen very rarely and there is possibility of conflicts over the opportunity cost.

It is very clear that fixation of transfer prices is a very delicate decision. There might be clash of interests between the selling and buying division and hence while fixing the transfer price, overall interests of the organisation should be taken into consideration and overall 'Goal Congruence' should be given utmost importance rather than interests of the selling or buying division.

#### **4.2.1 Benefits of transfer pricing**

Transfer pricing offers several benefits to multinational corporations and helps them effectively manage their operations. Some of the key benefits include:

- 1. Tax Optimization:** Transfer pricing allows companies to optimize their tax liabilities by allocating profits and costs among different jurisdictions in a manner that minimizes overall tax exposure. By adjusting transfer prices within legal and regulatory frameworks, companies can take advantage of variations in tax rates across countries to reduce their global tax burden.
- 2. Centralized Management:** Transfer pricing facilitates centralized management within multinational corporations by providing a framework for pricing transactions between different subsidiaries, divisions, or branches. This allows companies to streamline operations, coordinate decision-making, and maintain consistent pricing policies across the organization.
- 3. Resource Allocation:** Transfer pricing helps multinational corporations allocate resources efficiently by providing a mechanism for evaluating the

performance of different business units and subsidiaries. By analyzing the profitability of each unit based on transfer pricing arrangements, companies can make informed decisions about resource allocation, investment priorities, and strategic initiatives.

4. **Risk Management:** Transfer pricing enables companies to manage risks associated with fluctuations in currency exchange rates, regulatory changes, and market conditions. By implementing appropriate transfer pricing policies and documentation, companies can minimize the likelihood of disputes with tax authorities and mitigate potential financial and reputational risks.
5. **Compliance and Governance:** Transfer pricing promotes compliance with tax regulations and corporate governance standards by requiring companies to document their transfer pricing policies and practices. By maintaining comprehensive documentation and adhering to relevant regulations, companies can demonstrate transparency, accountability, and compliance with legal requirements.
6. **Competitive Advantage:** Transfer pricing can provide a competitive advantage by enabling companies to optimize their global supply chains, enhance operational efficiency, and improve profitability. By strategically managing transfer pricing arrangements, companies can achieve cost savings, increase market competitiveness, and drive sustainable growth.

Overall, transfer pricing is a critical tool for multinational corporations to manage their tax, operational, and strategic objectives effectively. By implementing appropriate transfer pricing policies and practices, companies can maximize value creation, mitigate risks, and enhance shareholder value in an increasingly complex global business environment.

#### 4.2.2 Market Price on Transfer Price

"Market price on transfer price" refers to a transfer pricing method where the transfer price is determined based on prevailing market prices for similar goods or services in external markets. This approach aims to ensure that the transfer price reflects the fair market value of the product or service being transferred, aligning with the arm's length principle.

Here's how the market price on transfer price method typically works:

- 1. External Benchmarking:** The selling division or entity within the multinational corporation benchmarks the transfer price against prices observed in external markets for comparable products or services. This may involve conducting market research, analyzing industry data, or consulting external pricing databases to identify relevant market prices.
- 2. Comparability Analysis:** The selling division evaluates the comparability between its product or service and those observed in external markets. Factors such as product specifications, quality, quantity, delivery terms, and geographical location are considered to ensure a valid comparison.
- 3. Adjustments for Differences:** Any differences between the product or service being transferred and those observed in external markets are identified and adjusted for to make the comparison more accurate. These adjustments may account for factors such as differences in volume, customization, transportation costs, and terms of sale.
- 4. Setting the Transfer Price:** Based on the findings of the comparability analysis and adjustments, the transfer price is set to align with prevailing market prices for similar goods or services. This ensures that the transfer price reflects the fair market value and is consistent with the arm's length principle.

#### 4.2.3 Advantages of using market price on transfer price method include:

- 1. Objectivity:** Market prices provide an objective benchmark for determining transfer prices, as they are based on actual transactions occurring in external markets. This reduces the risk of subjective judgments or biases influencing pricing decisions.
- 2. Compliance:** Setting transfer prices based on market prices helps ensure compliance with transfer pricing regulations and the arm's length principle. Tax authorities typically accept market-based pricing as evidence of arms' length transactions, reducing the likelihood of disputes or challenges.
- 3. Transparency:** Market-based pricing promotes transparency by providing a clear and externally verifiable basis for determining transfer prices. This enhances accountability and facilitates communication with tax authorities,

stakeholders, and other relevant parties.

However, there are also challenges associated with the market price on transfer price method:

- 1. Availability of Comparable Data:** Obtaining reliable and relevant market data for benchmarking purposes can be challenging, particularly for unique or specialized products or services. Limited availability of comparable data may complicate the application of this method.
- 2. Complexity of Comparability Analysis:** Conducting a thorough comparability analysis and making appropriate adjustments to account for differences between the internal transfer and external market transactions can be complex and time-consuming.
- 3. Dynamic Market Conditions:** Market prices for goods and services can fluctuate over time due to changes in supply and demand, economic conditions, and other factors. Keeping track of these changes and adjusting transfer prices accordingly requires ongoing monitoring and analysis.

Overall, while the market price on transfer price method offers objectivity and compliance with transfer pricing regulations, it may pose challenges related to data availability, complexity, and adaptability to dynamic market conditions. Companies often use a combination of transfer pricing methods to address these challenges and determine transfer prices that balance internal cost considerations with external market dynamics.

#### 4.2.4 Negotiated pricing

Negotiated pricing is a transfer pricing method where the transfer price for goods, services, or intangible assets is determined through negotiation between the buying and selling divisions or entities within a multinational corporation. Instead of relying on predetermined formulas or external benchmarks, negotiated pricing allows the parties involved to discuss and agree upon a transfer price that is acceptable to both sides.

Here's how negotiated pricing typically works:

- 1. Negotiation Process:** The buying and selling divisions or entities engage in negotiations to determine the transfer price for the goods, services, or intangible assets being transferred. Both parties may present their respective

cost structures, market conditions, and other relevant factors to support their proposed transfer prices.

2. **Consideration of Factors:** During the negotiation process, various factors are considered to arrive at a mutually acceptable transfer price. These factors may include production costs, market conditions, competitive landscape, strategic objectives, and any unique circumstances surrounding the transaction.
3. **Flexibility:** Negotiated pricing offers flexibility for both parties to tailor the transfer price to their specific needs and circumstances. It allows for adjustments based on factors such as volume discounts, long-term contracts, payment terms, and other considerations that may impact the overall value of the transaction.
4. **Agreement and Documentation:** Once the parties reach a consensus on the transfer price, they formalize the agreement through written contracts or other documentation. The terms of the agreement, including the agreed-upon transfer price and any relevant conditions or adjustments, are documented to provide clarity and avoid misunderstandings in the future.

### **Advantages of negotiated pricing include:**

1. **Customization:** Negotiated pricing allows parties to customize the transfer price based on their individual requirements and preferences. It enables companies to consider a wide range of factors and tailor the pricing arrangement to maximize mutual benefits.
2. **Relationship Building:** Negotiated pricing fosters collaboration and relationship building between divisions or entities within the multinational corporation. By engaging in open and transparent discussions, parties can build trust, strengthen partnerships, and enhance communication channels for future transactions.
3. **Flexibility and Adaptability:** Negotiated pricing offers flexibility to adapt to changing market conditions, business dynamics, and strategic priorities. It allows parties to respond quickly to emerging opportunities or challenges and adjust transfer prices accordingly to optimize performance.

However, there are also challenges associated with negotiated pricing:

- 1. Time and Resource Intensive:** Negotiating transfer prices can be time-consuming and resource-intensive, particularly for complex transactions or when parties have divergent interests. It may require extensive discussions, analysis, and documentation to reach a consensus.
- 2. Potential for Disputes:** Negotiated pricing may lead to disagreements or disputes between parties if they cannot agree on a transfer price that satisfies their respective interests. Resolving disputes may require mediation, arbitration, or other conflict resolution mechanisms.
- 3. Subjectivity:** Negotiated pricing involves subjective judgments and biases that may influence the outcome of the negotiation process. Without objective benchmarks or guidelines, parties may have different interpretations of what constitutes a fair transfer price.

Overall, negotiated pricing offers advantages such as customization, relationship building, and flexibility but may also pose challenges related to time, resource allocation, and potential for disputes. Companies often use negotiated pricing alongside other transfer pricing methods to achieve optimal outcomes and manage their intercompany transactions effectively.

#### 4.3.5 Pricing based on opportunity costs

Pricing based on opportunity costs is a transfer pricing method where the transfer price is determined by considering the opportunity cost of using resources within the multinational corporation. Unlike traditional cost-based pricing, which focuses solely on the direct costs incurred in production, pricing based on opportunity costs takes into account the value of the resources being transferred and the benefits foregone from using those resources elsewhere.

Here's how pricing based on opportunity costs typically works:

- 1. Identification of Resources:** The selling division or entity identifies the resources being transferred, which may include raw materials, labor, equipment, intellectual property, or other assets.
- 2. Assessment of Alternative Uses:** The selling division evaluates the alternative uses for the resources being transferred within the multinational corporation. This involves considering the potential benefits or revenues that could be generated by using those resources in alternative ways, such as producing other products, serving different markets, or pursuing strategic

initiatives.

3. **Calculation of Opportunity Costs:** The opportunity cost of using the resources for the specific transaction is calculated based on the benefits foregone from their alternative uses within the organization. This may involve estimating the potential revenues, cost savings, or other benefits that could be realized by reallocating the resources to alternative activities.
4. **Setting the Transfer Price:** The transfer price is determined based on the opportunity cost of the resources being transferred. It reflects the value of the resources to the buying division or entity, taking into account the benefits foregone from using those resources elsewhere within the multinational corporation.

### **Advantages of pricing based on opportunity costs include:**

1. **Efficient Allocation of Resources:** Pricing based on opportunity costs encourages the efficient allocation of resources within the multinational corporation by considering the value of the resources in alternative uses. It ensures that resources are allocated to activities that generate the highest returns and maximize overall profitability.
2. **Alignment with Strategic Objectives:** By incorporating opportunity costs into transfer pricing decisions, companies can align intercompany transactions with their strategic objectives and priorities. It allows for a more holistic approach to resource allocation and decision-making across the organization.
3. **Maximization of Value Creation:** Pricing based on opportunity costs helps companies maximize value creation by ensuring that resources are utilized in ways that it promotes a focus on activities that contribute most effectively to the company's long-term success and sustainability.

However, there are also challenges associated with pricing based on opportunity costs:

1. **Complexity of Calculation:** Assessing opportunity costs and determining the appropriate transfer price can be complex and challenging, particularly for organizations with diverse operations and multiple alternative uses for resources. It may require sophisticated modeling, analysis, and decision-

making processes.

2. **Subjectivity:** Pricing based on opportunity costs involves subjective judgments and assumptions about the value of resources in alternative uses. Different stakeholders may have different perspectives on the potential benefits and risks associated with reallocating resources, leading to disagreements or conflicts in setting transfer prices.
3. **Data Availability and Reliability:** Obtaining accurate and reliable data to assess opportunity costs and alternative uses of resources within the organization can be difficult. It may require comprehensive data collection, analysis, and validation processes to ensure the integrity of the pricing decision.

Overall, pricing based on opportunity costs offers advantages such as efficient resource allocation and alignment with strategic objectives but may also pose challenges related to complexity, subjectivity, and data availability. Companies often use this method alongside other transfer pricing approaches to achieve optimal outcomes and manage their intercompany transactions effectively.

## Let's Sum Up

Transfer pricing methods include several approaches, such as the Comparable Uncontrolled Price (CUP) method, Resale Price method, Cost Plus method, Transactional Net Margin method (TNMM), and the Profit Split method. Each method helps determine the appropriate price for transactions between related parties to reflect market conditions accurately. The benefits of effective transfer pricing include compliance with tax regulations, minimization of tax liabilities, avoidance of double taxation, and accurate reflection of profit allocation within the multinational enterprise. Market-based transfer pricing ensures that intra-company transactions are priced similarly to those with external customers, fostering fairness and transparency. Negotiated pricing allows divisions within a company to agree on transfer prices, which can enhance flexibility and internal cooperation. Pricing based on opportunity costs ensures that transfer prices reflect the potential benefits or losses of alternative uses of resources, optimizing decision-making and resource allocation.

## Section 4.2 Check Your Progress – QUIZ -2

1. Which of the following is a method of transfer pricing?
  - A. Market Share method
  - B. Comparable Uncontrolled Price (CUP) method
  - C. Cost Distribution method
  - D. Demand Forecast method
2. A benefit of effective transfer pricing includes:
  - A. Increasing tax liabilities
  - B. Avoiding double taxation
  - C. Reducing the quality of products
  - D. Ignoring market conditions
3. Market-based transfer pricing ensures that intra-company transactions are:
  - A. Priced based on internal agreements only
  - B. Priced similarly to transactions with external customers
  - C. Priced lower than market rates
  - D. Ignored in financial reports
4. Negotiated pricing within a company primarily enhances:
  - A. External market competition
  - B. Internal cooperation and flexibility
  - C. Cost-cutting measures
  - D. Tax evasion practices
5. Which method ensures that transfer prices reflect potential benefits or losses of alternative uses of resources?
  - A. Market Price method
  - B. Cost Plus method
  - C. Opportunity Cost method
  - D. Resale Price method

## ILLUSTRATIONS

### (A) Computation of Transfer price:

#### Illustration 1

A firm's total cost per unit of the product is Rs. 150 per unit. If the expected rate of return is 25% of cost, what is the transfer price per unit?

Solution:

#### Computation of Transfer price

Particulars	Rs.
Total Cost	150.00
Add: 25% of cost as profit	37.50

$150 \times \frac{25}{100}$	187.50
Transfer price	

**Illustration 2**

A Firm's two products details are as follows:

Particulars	Product P Per unit Rs.	Product Q Per unit Rs.
Direct material cost	50.00	75.00
Direct labour	25.00	20.00
Direct expenses	20.00	5.00
Variable overhead	5.00	20.00
Fixed cost	50000	100000
Total output in units	10000	20000
Transfer price	25% of Cost	25% of transfer price

Find out the transfer price.

**Solution:**

## Computation of Transfer price

Particulars	Product	
	P RS.	Q Rs.
Material cost	50.00	75.00
Labour	25.00	20.00
Direct expenses	20.00	5.00
<b>Prime Cost</b>	<b>95.00</b>	<b>100.00</b>
Add: Variable overhead	5.00	20.00
Add: Fixed overhead	100.00	120.00
	5.00	5.00
<b>Total cost</b>	<b>105.00</b>	<b>125.00</b>
Add: Profit margin $105 \times \frac{25}{100}$	26.25	
<b>25% of Transfer price</b> $(100 - 25: 75) = 125 \times \frac{25}{75}$		41.67
<b>Transfer price</b>	<b>131.25</b>	<b>166.67</b>

**(B) Transfer of products with transfer price**  
**Illustration 3**

A firm would like to compute the Transfer price of its three products with the following details:

Particulars	X Rs	Y Rs.	Z Rs.
Total Cost	6000	75000	100000

Compute the transfer price if the return is:

1. At cost
2. Cost plus 25%
3. At 25 % on Transfer Price

**Solution:**

**Computation of Transfer price**

Particulars	X Rs	Y Rs.	Z Rs.
<b>1. Transfer at Cost :</b>			
Total Cost	60000	75000	100000
Transfer Price @ cost	60000	75000	100000
<b>2. Cost plus 25%:</b>			
Cost	60000	75000	100000
Add: 25% of Cost (Profit)	15000	18750	25000
	<u>75000</u>	<u>93750</u>	<u>125000</u>
<b>3. At 25 % on Transfer Price:</b>			
Cost	60000	75000	100000
Add: Profit margin	20000	25000	33333
60000 x $\frac{25}{75}$	80000	100000	133333
75000 x $\frac{25}{75}$			
100000 x $\frac{25}{75}$			

**Illustration 4**

Aryan Ltd produces two products, details of which are furnished below:

Particulars	T	S
Output in Units	15000	25000
Total prime cost	Rs.	Rs.
Variable overhead	75000	100000
Fixed Cost	25000	25000
	50000	25000

You are required to compute the transfer price per unit. If

1. 25% on cost is required
2. 20% on transfer price is required

**Solution:**

Particulars	Product	
	T RS.	S Rs.
Prime cost	75000	100000
Variable overhead	25000	25000
Fixed cost	50000	25000
Total cost	<u>150000</u>	<u>150000</u>
Add: profit margin 25% on cost:	37500	37500
Transfer price	<u>187500</u>	<u>187500</u>
Price per unit	Rs.12.5 per unit	Rs.7.5 per unit
<b>Cost Per unit if transfer is 20% of transfer price</b>		
Price at 20% on transfer price	150000	150000
Total cost		
dd: Profit margin		
20% on transfer price (100- 20)	<u>37500</u>	<u>37500</u>
$150000 \times \frac{20}{80}$	<u>187500</u>	<u>187500</u>
Transfer price	<u>187500</u>	<u>187500</u>
Price per unit	15000 units = Rs.12.5	25000 units = Rs.7.5

**C. Interdepartmental Transfers:****Illustration 5**

Shri Balaji limited produces two products processed paper and history book. The processed paper is fully transferred to history books department. The processed paper is fully transferred to history books at cost plus 50%. Find out the profit from the particulars if history books are sold at a profit of 50% on cost.

Particulars	Processed paper dept. Rs.	History books dept. Rs.
Sales	3,00,000	(7,00,000 + 3,50,000)
Cost to the product (own cost)	2,00,000	10,50,000 4,00,000

**Solution:**

Particulars	RS.	Rs.	Rs.
Sales	3,00,000		10,50,000
Less: cost	2,00,000	3,00,000	7,00,000
Profit	1,00,000	4,00,000	3,50,000

**Illustration 6**

Sairam Ltd makes three different products, the particulars are provided below:

Particulars	Sugar cane Juice Rs.	Sugar making dept Rs.	Jaggery making dept Rs.
<b>Cost of the product:</b>			
Direct material	500000	750000	_____
Direct labour	200000	600000	300000
Direct Expenses	150000	200000	250000
Variable overhead	150000	400000	50000
Fixed overhead	200000	800000	400000

The sugarcane department transfers 50% of production to sugar and jaggery each at 20% of sales. Sugar dept sells its products @ profit of 20 % of sales and jaggery department sell the product @ 20% profit on sales. Find out the profit of each division.

**Statement of Profit**

<b>Particulars</b>	<b>Sugar cane Rs.</b>	<b>Sugar Rs.</b>	<b>Jaggery Rs.</b>
Direct material	5,00,000	7,50,000	7,50,000
Direct Labour	2,00,000	6,00,000	3,00,000
Direct Expenses	1,50,000	2,00,000	2,50,000
	<u>8,50,000</u>	<u>15,50,000</u>	<u>13,00,000</u>
Variable O/H	1,50,000	4,00,000	50,000
Fixed expenses	2,00,000	8,00,000	4,00,000
Total Cost		<u>27,50,000</u>	<u>17,50,000</u>
Add: Profit 20% of sales	12,00,000	6,87,500	4,37,500
	<u>3,00,000</u>		
	<u>15,00,000</u>	<u>34,37,500</u>	<u>21,87,500</u>

**Illustration 7**

An automobile company has three divisions details of which are as follows:

<b>Particulars</b>	<b>Spares making division Rs.</b>	<b>Two wheelers making division Rs.</b>	<b>Four wheeler making division Rs.</b>
Outside sales	2,00,000	10,00,000	20,00,000
Cost of production	1,00,000	4,00,000	6,00,000
(own in the division)	50,000	-	50,000
Transfer sale at cost	(60,000)	-	(60,000)
(Transfer sale at profit of 20% on cost)			

Find out the profit of each division and the company using transfer prices.

Solution:

**Computation of profit**  
**(If transfer price is at cost)**

Particulars	Spares	Two	Four	Total
	Rs.	wheelers	Wheelers	
		Rs.	Rs.	
Outside Sales	2,00,000	10,00,000	20,00,000	32,00,000
Transfer sale at cost	50,000	-	-	50,000
Total	<u>2,50,000</u>	10,00,000	20,00,000	<u>32,50,000</u>
Sales I	-	-	50,000	-
Transfer sale at cost	1,00,000	-	6,00,000	11,00,000
Own Cost	1,00,000	4,00,000	6,00,000	11,50,000
<b>Total cost II</b>	1,50,000	4,00,000	6,50,000	21,00,000
		6,00,000	13,50,000	

**If Transfer price at profit on cost**

Particulars	Divisions			Total
	Spares	Two	Four	
	Rs.	wheelers	Wheelers	
		Rs.	Rs.	
Outside Sale	2,00,000	10,00,000	20,00,000	32,00,000
Transfer sale at 20% on cost	60,000	-	-	-
(50,000 + 50,000 x <u>20</u>	<u>2,60,000</u>	<u>10,00,000</u>	<u>20,00,000</u>	<u>32,00,000</u>
100				
<b>Total Sales I</b>			60,000	-
Transfer sale at cost	-	-	6,00,000	11,00,000
Own Cost	1,00,000	4,00,000	6,00,000	11,00,000
Total Cost II	1,00,000	4,00,000	6,50,000	-
	<u>160,000</u>	<u>6,00,000</u>	<u>13,50,000</u>	<u>21,00,000</u>

## Computation of Transfer price with ROI

### Illustration 8

T.M. Ltd has two division making equipment which are in the form of personal components and industrial components. Personal components division has a capacity to make 5,00,000 units, at present it is making and selling 3,00,000 units to outsiders at Rs.200 per unit. Variable cost per unit Rs.120. Fixed cost pertaining to it is Rs. 6,00,000 Lakhs. Capital employed is 8,00,000. Expected rate of return is 15% industrial components division has received an order from a customer for which component made by the personal division could be used to make and sell to new customer at an additional variable cost of Rs. 10 per unit to be incurred by personal component division. The residual budgeted income of personal components division is Rs.5 Crores. Compute the transfer price to be charged by Personal components division to industrial components division. What is the decision if the industrial division is able to get component from outside at below variable cost?

### Solution:

#### Computation of Transfer Price

Particulars	Rs.	Rs.
Expected profit		5,00,00,000
Fixed Cost	12,00,000	60,00,000
	200	5,72,00,000
Return on Capital (80,00,000 x 15/100)	-120	<u>2,40,00,000</u>
Total contribution required	80	166.00 Per Unit
Sales to outsiders @ selling Price	80 x	
	3,00,000	10.00mper
Less: Variable cost	5.72,00,000	unit
	<u>2,40,00,000</u>	120.00 per unit
Contribution per unit	3,32,00,000	
	(3,32,00,000/ 2,00,000)	<u>276.00 per Unit</u>
Total contribution from existing customers		
Required contribution to have a profit on Rs.5,00,00,000		
Less: Contribution recovered from existing customers by sale of 3,00,000 units x 80		
Contribution to be raised from industrial components division by way of transfer price of 2,00,000 units		

per unit		
add: additional variable cost		
existing variable cost		
Transfer price		

**Illustration 9**

A firm transfer goods from one division to another division at cost plus return on capital. The related information relating to division I is provided below. Compute transfer price to be charged to division II.

Fixed Assets		Rs. 25,00,000
Gross current assets:		
Current assets other than		
Debtors:	4,00,000	
Debtors:	1,00,000	Rs. 5,00,000
Required profit on Capital		25%
Fixed cost of operating		Rs. 6,00,000
Production output in units		Rs. 30,000
Variable cost per unit		Rs. 25

**Solution:****Computation of transfer price**

Particulars	Rs.	Rs.
Fixed cost per unit 6,00,000 / 30,000 units		20.00
Variable Cost		
Return on Investment Total Assets x 25/100		25.00
(Fixed assets + current assets) = 30,00,000 x 25/100 Per unit: 7,50,000/30,000 units		25.00
<b>Transfer price</b>		<b>70.00</b>

**Illustration 10**

A company makes two products, which are to be used by the company to make a new product, determine the transfer price to be charged on these products from the following details:

Particulars	Product I	Product II
Direct wages	50,000	15,000
Direct expenses	10,000	5,000
Capital invested	30,00,000	40,00,000
Tax rate is 20 %		
ROI is 10%		

If profit of 15% on sales is required with trade discount of 10 % , what would be the transfer price?

**Solution:**

**Statement of Transfer Price Without Discount**

Particulars	Product I	Product II
	Rs.	Rs.
ROI on capital @ 10 %	3,00,000	4,00,000
Tax component 20 %	3,75,000	5,00,000
Hence profit after tax	4,75,000	6,00,000
100 – 20 = 80%	Rs. 19	Rs. 30.00
Profit before tax (3,00,000 x 100/80)		
Sales: cost + profit (1,00,000 + 3,75,000)		
Unit Price		

**Workings:**

**Transfer price, if 15% on sales is required**

If selling price = 100

After Tax profit: 15% = 15.00

Pre tax profit

( At tax rate of 20%)

If profit = 100

Less: Tax = -20

Pre tax profit 80 = Rs.15

Profit

15/80 x 100 = 18.75

If selling price = 100

Less: Discount = 10

Net price 90.00

Less: Profit desired 18.75

**cost = 71.25**

## Statement of Transfer Price

Particulars	Products	
	Product I Rs.	Product II Rs.
Cost of 71.25%	1,00,000	1,00,000
( cost + Profit ) Sales : 1,00,000/71.25 x 100	1,40,350	1,40,350
(71.25 + 18.75) Number of Units	25,000	20,000
Selling price ( 1,40,350/25000, 140,350/20000)	5.614	7.0175
Discount	10%	
Net Price : ( 5.614 x 90/100, 7.0175 x 90/100)	5.0526	6.31575

### 4.3UNIT SUMMARY

Transfer pricing refers to the pricing of goods, services, and intangibles transferred within divisions of the same company, especially across international borders. The primary objectives of inter-company transfer pricing include allocating income among different branches of a multinational enterprise to reflect where economic activities and value creation occur, ensuring compliance with local tax regulations, and minimizing the risk of double taxation. Methods of transfer pricing include the Comparable Uncontrolled Price (CUP) method, Resale Price method, Cost Plus method, Transactional Net Margin method (TNMM), and Profit Split method. Effective transfer pricing offers benefits such as tax compliance, reduced tax liabilities, accurate profit allocation, and enhanced internal decision-making. Market-based transfer pricing ensures intra-company transactions are priced similarly to external transactions, fostering transparency and fairness. Negotiated pricing allows divisions to agree on transfer prices, enhancing internal cooperation and flexibility. Pricing based on opportunity costs ensures that transfer prices reflect the potential benefits or losses of alternative resource uses, optimizing resource allocation and decision-making.

#### 4.4 GLOSSARY

1.	<b>Transfer Pricing</b> : The pricing of goods, services, and intangibles transferred within divisions of the same company, especially across international borders.
2.	<b>Comparable Uncontrolled Price (CUP) Method:</b> A transfer pricing method that compares the price charged for goods or services in a controlled transaction to the price charged in a comparable uncontrolled transaction.
3.	<b>Resale Price Method:</b> A transfer pricing method that determines the appropriate price by subtracting a gross margin from the resale price of a product sold to an independent entity.
4.	<b>Cost Plus Method:</b> A transfer pricing method that adds an appropriate markup to the costs incurred by the supplier of goods or services in a controlled transaction.
5.	<b>Profit Split Method:</b> A transfer pricing method that identifies the combined profit to be split for the associated enterprises from a controlled transaction and then splits those profits based on an economically valid basis.
6.	<b>Market-Based Transfer Pricing:</b> Pricing intra-company transactions similarly to how transactions with external customers are priced.
7.	<b>Negotiated Pricing:</b> Transfer prices agreed upon through negotiation between the divisions within a company
8.	<b>Opportunity Cost:</b> The cost of an alternative that must be forgone in order to pursue a certain action.
9.	<b>Double Taxation:</b> A tax principle referring to income taxes paid twice on the same source of earned income.
10.	<b>Tax Compliance:</b> The degree to which a taxpayer complies with tax laws and regulations.

#### 4.5 SELF ASSESSMENT QUESTIONS 5 MARKS

1. Explain the concept of transfer pricing and its significance in multinational enterprises (MNEs).
2. Describe the objectives of inter-company transfer pricing.
3. List and briefly explain the different methods of transfer pricing.
4. Discuss the benefits of effective transfer pricing for multinational enterprises.
5. Compare and contrast market-based transfer pricing and negotiated pricing.

#### SELF ASSESSEMENT QUESTIONS 10 MARKS

1. Discuss the various transfer pricing methods and their applicability in different business scenarios.
2. Evaluate the impact of transfer pricing on multinational enterprises in terms of tax compliance and financial performance.
3. How does transfer pricing influence managerial decision-making and resource allocation within a multinational enterprise?
4. Critically assess the challenges and risks associated with implementing transfer pricing policies in multinational enterprises.
5. Explain the concept of opportunity cost in transfer pricing and how it can be applied to optimize resource allocation within a company.

#### 4.6 ACTIVITIES AND ASSIGNMENT

##### EXERCISES

##### (A) Computation of transfer prices :

1. A company's cost of production of a product is Rs. 250 per unit. If the company decides to charge 20% of cost price as transfer price, what is the transfer price ?

**(Ans : Transfer price :  $250 + 250 \times \underline{20}$   
100**

**$250 + 50 = \text{Rs. } 300$**

2. A firm produces a product in a division, which is to be transferred to another division for further processing at a transfer price from the following details find the transfer price.

Cost per unit is Rs. 1,250

Profit required :

- a) 20% of cost
- b) 25% of transfer price
- c) It to be transferred @ market price of 1,500

**(Ans : Transfer price :**

**a) Rs. 1,500 (1,250 + 1,250 x 20 )**

**100**

**b) Rs. 1,666 (1,250 + 1,250 x 25 )**

**75**

**c) Market price as transfer price : Rs. 1,500 )**

3. A firm has two products being produced, which are to be transferred to another division for the further processing. Find out the transfer price from the following details:

Particulars	Product I	Product II
	Rs.	Rs.
Cost per unit	400	500
Profit required	20% of cost	20% on transfer price

**Ans : Transfer price : product I**

**400 + 400 x 20**

**100**

**400 + 80 = Rs. 480**

**Product II**

**500 + 500 + 20**

**80**

**500 + 125 = Rs. 625**

4. A firm produces two products, which are to be transferred to another division for further processing at a transfer price which is required to be computed from the following:

Particulars	Product J	Product K
	Rs.	Rs.
Direct material	25.00	35.00
Direct wages	45.00	55.00
Direct expenses	10.00	15.00
Variable overhead	20.00	25.00
Fixed cost @ Rs. Per unit	40.00	50.00

Compute transfer price

1. as cost + 25%
2. as 25% of transfer price

**(Ans : Transfer price :**

**At cost + 25%: product J : Rs. 175 : product K : Rs. 225**

**It transfer @ 25% on Transfer price :**

**J : Rs. 186.67**

**K : Rs. 240)**

5. A manufacturing company being in production of two components transfers two of its products to another division for further processing, find out the transfer price from the following details:

Particulars	Product M	Product N
	Rs.	Rs.
Direct material	150.00	250.00
Direct wages	350.00	350.00
Direct expenses	200.00	200.00
Variable overhead	200.00	100.00
Fixed overhead	Rs. 5,00,000	Rs. 8,00,000
Units of output	10,000 units	8,000 units

Compute the transfer of price if is based on 1.

1. cost – 20%
2. Transfer price and 20%

**(Ans : 1. Transfer price :**

**M : Rs. 1,140    N : Rs. 1,200**

**2. Transfer price :**

**M: Rs. 1,187.5    N: Rs. 1,375)**

6. A company charges 20% of cost as transfer price of it's 3 products. From the following find the transfer price.

Particulars	A	B	C
	Rs.	Rs.	Rs.
Profit	300	600	900

**(Ans : transfer price :**

<b>A</b>	<b>B</b>	<b>C</b>
<b>Rs.</b>	<b>Rs.</b>	<b>Rs.</b>
<b>1,500</b>	<b>3,000</b>	<b>4,500)</b>

7. A firm transfers three of its products to another division @ 25 % of cost, find the transfer price.

Particulars	X Rs.	Y Rs.	Z Rs.
Profit	500	1,000	1,500

(Ans : transfer price :

<b>A</b>	<b>B</b>	<b>C</b>
<b>Rs.</b>	<b>Rs.</b>	<b>Rs.</b>
<b>2,000</b>	<b>4,000</b>	<b>6,000</b> )

8. A manufacturing company transfers its three products to another division @30% of transfer price for further processing. Find the transfer price. From the following details:

Particulars	Product A Rs	Product B Rs	Product C Rs
Cost	4,500	10,000	15,000

(Ans : transfer price :

<b>A</b>	<b>B</b>	<b>C</b>
<b>Rs</b>	<b>Rs</b>	<b>Rs</b>
<b>9,000</b>	<b>20,000</b>	<b>30,000</b> )

9. Anand & co. transfers 3 of its products to another division @ a profit of 25% on transfer price. Find the transfer price from the following details.

Particulars	P Rs.	Q Rs.	R Rs.
Cost	7,500	18,000	45,000

(Ans : Transfer price :

<b>P</b>	<b>Q</b>	<b>R</b>
<b>Rs</b>	<b>Rs</b>	<b>Rs</b>
<b>10,000</b>	<b>24,000</b>	<b>60,000</b> )

10. Amudha & co . transfer two of its products to another division at a profit of 40% on transfer price for further processing find out the transfer price:

Particulars	R Rs.	S Rs.
Profit margin	5,000	8,000

(Ans : transfer price R : Rs. 12,500; S : Rs. 20,000)

11. Haris co transfers 3 of its products to another division at a profit of 30%

of transfer price, find the transfer price from the following:

Particulars	F Rs.	G Rs.
Profit	150.00	900

(Ans : Transfer price : F : Rs. 500; G : Rs. 3,000)

(B) Inter departmental transfers:

12. Milk products Ltd., involving in processing of milk products provides the following details, find out the profit. It processed milk dept transfers its product to other depts. 50% each.

Particulars	Processed milk department Rs.	Butter department Rs.	Cheese department Rs.
Sales	5,00,000	5,62,000	6,87,500
Cost (own cost)	4,00,000	2,50,000	2,50,000
Sales @ 25% cost		2,00,000	3,00,000

Note : 5,00,000 sales value of milk processing dept is transferred to other depts.

**milk dept                      butter dept                      cheese**

(Ans :

**Rs                                      Rs                                      Rs**

**Profit :              1,00,000                      1,12,500                      1,37,500 )**

13. A wheat processing dept; has three processes. The wheat process dept transfers the whole product to bread making and bun making depts. As 50% each at 25% of the cost. From the following details find the profit of three products. If bread making and bun making dept charges profit @ 50%.

Particulars	Wheat processing Rs.	Bread making Rs.	Bun making Rs.
Cost incurred in the department	16,00,000	6,00,000	8,00,000
(transfer)	20,00,000	10,00,000	10,00,000
Sales		24,00,000	27,00,000

**Ans :              wheat dept                      bread dept                      Bun dept**

**Rs.                                      Rs.                                      Rs.**

**Profit :              4,00,000                      8,00,000                      9,00,000**

14. An Automobile spares making company has two divisions, spares making division and Engineering division. Spares making division has a capacity of making 20,00,000 units. The present production and sales is 16,00,000 units. The sales price is 4,000 per unit. The variable cost is Rs. 280, Fixed cost pertaining to spares division is Rs. 1,20,00,000 (1.2 crores) Capital employed is Rs. 10,00,00,000 (10 crores) Expected rate of return is 8%. Engineering division has obtained an order from a customer, to supply a product, to make this the spares from spares division could be used at an additional variable cost of Rs. 20 per unit. The budgeted profit of spares division is 8 crores. Compute the transfer price to be charged by spares division to engineering division.

**(Ans : Transfer price : Rs. 1,562)**

**Hint: Total contribution :**

**Excepted profit + FC + ROI = 11,00,00,000 (crores)**

**(Rs. 8,00,00,000 + 1,20,00,000 + 1,80,00,000)**

**Contribution from existing customers = 4,000 – 280 = Rs. 3,720**

**(Rs. 3,720 x 16,00,000 units) = Rs. 5,95,20,000**

**(16,00,000 units)**

**Required contribution from sale to engineering division**

**(Rs. 11,00,00,000 – Rs. 5,95,20,000) = Rs. 5,04,80,000**

**Contribution per unit 5,04,80,000 units = Rs. 1,262**

**4,00,000**

**Transfer price : Rs. 1,562 (Rs. 1,262 + 20 + 280).**

15. Excellent wood making company is having two divisions, namely, wood processing and Interior wood-based product division. The wood processing division is at present processing and selling wood in the market. It is selling at present 25,000 units at Rs. 2,000 per unit. Its capacity is 50,000 units variable cost of making the finished wood is Rs. 800 per unit. Fixed cost is 85,00,000, budgeted profit is Rs. 2,00,00,000. Capital employed is Rs. 5,00,00,000. Rate of return on capital is 12%. The Interior design making division is taking a decision to obtain remaining 25,000 units from wood division and make a product for sale to customers outside which involved additional variable cost of Rs. 100 per unit. Compute the transfer price to be charged by wood making division. What would be the decision if Interior design division is able to buy the finished wood from market at below the variable cost?

**Ans : Transfer price : Rs. 1,000 (180 + 800 + 20)**

**Hint: Total required contribution FC + Profit + ROI : Rs. 3,45,00,000  
(85,00,000 + 2,00,00,000 + 60,00,000)**

**Existing contribution (2,000 – 800) x 25,000: Rs. 3,00,00,000**

**Required contribution form interior design division**

**3,45,00,000 – 3,00,00,000) Rs. 45,00,000**

**Contribution per unit = 45,00,000 : Rs. 180.00  
25,000**

**If outside supply below variable cost it is better to buy from outside**

**Inter departmental transfer :**

16. Best LTD has two divisions.

- (a) Best LTD transfers cloth to readymade garments department at cost plus return on capital. The related details of cloth dept are furnished below:

<b>Particulars</b>	<b>Rs.</b>
Fixed assets	40,00,000
Current assets other than cash	5,00,000
Cash	5,00,000
Required profit margin on capital	16%
Fixed cost incurred	14,00,000
Production in units	7,000
Variable cost per unit	50

**Compute the transfer price to be fixed**

a) Cloth department to readymade department.

**(Ans : Transfer price : Rs. 364.285 (200 + 50 + 114.285) )**

**Hint: FC Per unit : Rs. 200 = 14,00,000 , variable cost : Rs. 50**

**7,000 units**

**Return on investment (Total assets ) x 16%**

$$50,00,000 \times \left( \frac{16}{100} \right) = \frac{8,00,000}{7,000} = \text{Rs. } 114.285$$

17. Z Ltd, has two divisions.

Steel processing division and steel equipment division. Steel processing division transfers its finished product to equipment division at cost plus return on investment. From the following details find out the transfer price to be charged by steel making division to equipment division.

Particulars	Rs.
Current assets	12,00,000
Other than cash	3,00,000
Fixed assets	35,00,000
Required margin on investment	24%
Fixed cost	18,00,000
Variable cost per unit	35.00
Units of output	12,000

[Ans : transfer price : Rs. 285 (150 + 35 + 100)]

Hint : Fixed cost per unit : Rs. 150.00 =  $\frac{18,00,000}{12,000}$  , variable cost : Rs. 35.00

ROI :  $50,00,000 \times \frac{24}{100}$  : Rs. 100.00, Per unit :  $\frac{12,00,000}{12,000 \text{ units}}$

#### 4.7 Answers for Check Your Progress – Quiz 2

<b>4.1 Section: Meaning of Transfer Pricing QUIZ –1</b>	
Q.1	a) The pricing of goods, services, and intangibles transferred within divisions of the same company
Q.2	b) Allocate income among different branches of a multinational enterprise
Q.3	a) Aligning intra-company pricing with market rates
Q.4	c) Local tax regulations
Q.5	c) It reduces the risk of double taxation
<b>4.2 Section: Methods of transfer pricing QUIZ – 2</b>	
Q.1	b) Comparable Uncontrolled Price (CUP) method
Q.2	b) Avoiding double taxation
Q.3	b) Priced similarly to transactions with external customers
Q.4	b) Internal cooperation and flexibility

Q.5	c) Opportunity Cost method
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#### 4.8 Reference and Suggested Readings

1. Transfer Pricing and Corporate Taxation: Problems, Practical Implications and Proposed Solutions" by Elizabeth King.
2. Transfer Pricing Handbook: Guidance on the OECD Regulations" by Robert Feinschreiber.
3. Jawahar Lal, (2015), "Strategic Cost Management", 1<sup>st</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.)
4. Bandgar P. K., (2017), "Strategic Cost Management", 1<sup>st</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.

<b>Unit 5 – COST MANAGEMENT IN AGRICULTURE AND IT SECTOR</b>
Agriculture Sector: Features, Cost Structure, Cost Management, Tools to measure the performance, Minimum Support Price and International Perspective – Information Technology Sector: Features, Cost Structure, Cost Management and International Perspective.

### COST MANAGEMENT IN AGRICULTURE AND IT SECTOR

<b>Section</b>	<b>Topic</b>	<b>Page No.</b>
<b>UNIT - V</b>		
<b>Unit Objectives</b>		
<b>Section 5.1</b>	<b>Cost Management in Agriculture Sector</b>	
5.1.1	Features of Cost Management in Agriculture Sector	
5.1.2	Cost Structure in Agriculture Sector	
5.1.3	Cost management	
5.1.4	Tools to Measure the Performance of Cost Management in Agricultural Sector	
5.1.5	Minimum Support Price (MSP)	
5.1.6	International perspective	
	Let us sum up	
	Check your progress QUIZ – 1	
<b>Section 5.2</b>	<b>Cost Management in Information Technology Sector</b>	
5.2.1	Features of Cost Management in IT Sector	
5.2.2	Cost Structure in IT Sector	
5.2.3	Cost management	
5.2.4	International perspective	
	Let us sum up	
	Check your progress QUIZ - 2	
	Unit summary	
	Glossary	
	Self-assessment questions	

## UNIT OBJECTIVES

This unit includes identifying areas where costs can be reduced or optimized without sacrificing quality or productivity. Cost analysis helps in understanding the

profitability of different crops or livestock and making informed decisions about resource allocation. Leveraging technology and innovation to improve efficiency and reduce costs in agricultural operations.

## **SECTION:5.1 COST MANAGEMENT IN AGRICULTURE AND IT SECTOR**

### **5.1 Cost Management in Agriculture Sector**

Cost management in the agriculture sector is crucial for ensuring profitability, sustainability, and competitiveness for farmers and agricultural businesses. Here are some key aspects of cost management in agriculture:

- 1. Budgeting and Planning:** Creating comprehensive budgets and plans that outline expected expenses for various aspects of agricultural operations such as seeds, fertilizers, labor, machinery, irrigation, pest control, and overhead costs. This involves forecasting revenues and expenses based on historical data, market trends, and crop projections.
- 2. Cost Analysis:** Analyzing and evaluating costs associated with different agricultural activities and processes. This includes identifying areas where costs can be reduced or optimized without sacrificing quality or productivity. Cost analysis helps in understanding the profitability of different crops or livestock and making informed decisions about resource allocation.
- 3. Efficient Resource Utilization:** Optimizing the use of resources such as land, water, energy, and inputs like fertilizers and pesticides to minimize waste and maximize productivity. Implementing precision agriculture techniques, such as soil testing, crop monitoring, and variable rate technology, can help in efficient resource management.
- 4. Technology Adoption:** Leveraging technology and innovation to improve efficiency and reduce costs in agricultural operations. This includes using advanced machinery, drones, GPS systems, automated irrigation systems, and data analytics tools to streamline processes, increase productivity, and make data-driven decisions.
- 5. Risk Management:** Implementing risk management strategies to mitigate potential cost fluctuations and uncertainties in the agricultural market. This involves diversifying crops, hedging against price volatility through futures

contracts or crop insurance, and managing production risks related to weather, pests, and diseases.

6. **Economies of Scale:** Taking advantage of economies of scale by increasing the scale of operations to spread fixed costs over a larger output. This may involve consolidation of land holdings, cooperative farming arrangements, or forming partnerships to share resources and reduce per-unit production costs.
7. **Continuous Monitoring and Evaluation:** Regularly monitoring and evaluating financial performance against budgeted targets and benchmarks. Identifying variances and deviations from the plan allows for timely adjustments and corrective actions to stay on track with cost management objectives.
8. **Training and Education:** Investing in training and education programs for farmers and agricultural workers to enhance their skills and knowledge in cost-effective farming practices, modern technologies, and sustainable agriculture methods.
9. **Environmental Sustainability:** Incorporating environmentally sustainable practices into agricultural operations can not only reduce costs in the long run but also improve resource efficiency and resilience to climate change. Practices such as conservation tillage, crop rotation, integrated pest management, and organic farming can help reduce input costs and minimize environmental impacts.

By effectively managing costs through these strategies, farmers and agricultural businesses can improve profitability, resilience, and long-term sustainability in the agriculture sector.

### 5.1.1 Features of Cost Management in Agriculture Sector

Cost management in the agriculture sector involves several features tailored to the unique challenges and requirements of farming and agricultural businesses. Here are some key features:

1. **Input Cost Tracking:** Monitoring and tracking the costs associated with inputs such as seeds, fertilizers, pesticides, fuel, water, and labor. This involves recording expenses at each stage of production to understand the cost structure and identify areas for optimization.

- 2. Yield Analysis:** Analyzing crop yields and livestock production to assess the efficiency of resource utilization and identify factors affecting productivity. By understanding the relationship between inputs and outputs, farmers can optimize their operations to maximize profitability.
- 3. Seasonal Variability Management:** Recognizing and managing the seasonal variability inherent in agriculture, including fluctuations in input prices, market demand, and weather conditions. Cost management strategies should account for seasonal patterns and adjust production plans and budgets accordingly.
- 4. Risk Assessment and Mitigation:** Assessing and mitigating risks associated with price volatility, weather uncertainties, pest outbreaks, and other factors that can impact costs and revenues. This may involve implementing risk management tools such as insurance, futures contracts, and diversification strategies.
- 5. Technology Integration:** Integrating technology and digital tools into cost management processes to improve efficiency, accuracy, and decision-making. This includes using farm management software, IoT sensors, drones, and satellite imagery for data collection, analysis, and monitoring.
- 6. Sustainability Considerations:** Incorporating sustainability principles into cost management practices to minimize environmental impact and promote long-term viability. This involves adopting practices such as conservation tillage, agroforestry, water conservation, and biodiversity enhancement, which can also lead to cost savings over time.
- 7. Labor Management:** Managing labor costs effectively by optimizing workforce allocation, improving labor productivity, and investing in training and skill development. Mechanization and automation technologies can also help reduce labor costs and increase efficiency in certain agricultural tasks.
- 8. Supply Chain Optimization:** Optimizing the supply chain to minimize transportation, storage, and distribution costs while ensuring timely delivery of inputs and products. This may involve strategic partnerships with suppliers, wholesalers, retailers, and transportation providers to streamline logistics and reduce costs.

**9. Performance Measurement and Benchmarking:** Establishing key performance indicators (KPIs) and benchmarks to measure the effectiveness of cost management initiatives and track progress over time. Comparing performance against industry standards and best practices can help identify areas for improvement and optimization.

**10. Continuous Improvement Culture:** Fostering a culture of continuous improvement where farmers and agricultural businesses are encouraged to seek out innovative solutions, experiment with new technologies, and learn from both successes and failures to drive cost efficiency and competitiveness.

These features collectively contribute to effective cost management in the agriculture sector, enabling farmers and agricultural businesses to optimize resources, improve profitability, and enhance sustainability in a dynamic and challenging environment.

### 5.1.2 Cost Structure in Agriculture Sector

Cost structure in the agriculture sector varies depending on numerous factors including the type of crops or livestock being produced, the scale of operation, geographic location, technology adoption, and regulatory environment. However, here are some common components of cost structure in agriculture:

- 1. Land Costs:** This includes expenses related to purchasing or leasing land for cultivation or grazing. Land costs may also involve property taxes, land improvement expenses, and land rent.
- 2. Labor Costs:** Labor expenses cover wages for farm workers involved in tasks such as planting, harvesting, irrigation, and animal care. Labor costs can vary seasonally and may also include expenses related to hiring temporary workers during peak seasons.
- 3. Input Costs:** Input costs encompass expenditures on seeds, fertilizers, pesticides, and other agricultural chemicals required for crop production. For livestock farming, input costs may include expenses for animal feed, vaccines, and medications.
- 4. Machinery and Equipment:** Costs associated with purchasing, leasing, operating, and maintaining farm machinery and equipment such as tractors,

harvesters, plows, and irrigation systems.

- 5. Utilities:** Expenses for utilities such as water, electricity, and fuel required for irrigation, machinery operation, and other farm activities.
- 6. Transportation and Logistics:** Costs related to transporting agricultural inputs (e.g., seeds, fertilizers) to the farm and transporting harvested crops or livestock to markets or processing facilities.
- 7. Capital Costs:** Capital expenses involve investments in infrastructure, buildings, and long-term assets such as barns, greenhouses, fences, and storage facilities.
- 8. Insurance and Risk Management:** Expenses for insurance coverage to protect against risks such as crop failure, natural disasters, liability claims, and fluctuations in market prices.
- 9. Regulatory Compliance:** Costs associated with complying with government regulations and environmental standards, including permits, licenses, and fees.
- 10. Marketing and Distribution:** Expenses for marketing activities, packaging, labelling, and distribution of agricultural products to wholesalers, retailers, or directly to consumers.
- 11. Interest and Financing Costs:** Costs related to interest payments on loans, mortgages, or lines of credit used to finance farm operations, purchase equipment, or expand production.
- 12. Miscellaneous Expenses:** Other costs such as professional services (e.g., accounting, legal), training and education, maintenance, and repairs.

Understanding and effectively managing these cost components are crucial for agricultural businesses to remain competitive and sustainable in the ever-changing agricultural landscape. Additionally, factors such as technological advancements, government policies, weather conditions, and market fluctuations can influence the cost structure in the agriculture sector.

### 5.1.3 Cost Management

Cost management in the agriculture sector involves strategies and practices aimed at controlling and optimizing expenses while maximizing the efficiency and

profitability of farm operations. Here are some key principles and approaches to effective cost management in agriculture:

- 1. Budgeting:** Develop detailed budgets that outline projected expenses for various aspects of farm operations, including inputs, labor, machinery, utilities, and marketing. Regularly monitor actual expenses against budgeted amounts to identify any variances and adjust spending as needed.
- 2. Cost Analysis:** Conduct thorough analyses of all cost components to understand their impact on overall profitability. Identify cost drivers, such as input prices, labor productivity, and machinery usage, and explore opportunities for cost reduction or optimization.
- 3. Efficient Input Management:** Optimize input usage by carefully selecting seeds, fertilizers, pesticides, and other inputs based on factors such as crop requirements, soil conditions, and weather patterns. Implement precision agriculture techniques, such as soil testing and variable rate application, to minimize input wastage and maximize yield potential.
- 4. Labor Management:** Efficiently manage labor resources by matching workforce capacity with operational needs and seasonality. Provide training and incentives to enhance productivity, reduce turnover, and ensure a skilled and motivated workforce.
- 5. Technology Adoption:** Embrace technological innovations and farm management tools to streamline operations, improve efficiency, and reduce costs. Examples include GPS-guided machinery, automated irrigation systems, drones for crop monitoring, and farm management software for data analysis and decision-making.
- 6. Energy Efficiency:** Implement energy-saving practices and technologies to reduce utility expenses associated with water pumping, heating, cooling, and machinery operation. Invest in renewable energy sources, such as solar panels or wind turbines, to offset energy costs and promote sustainability.
- 7. Inventory Management:** Maintain optimal inventory levels of inputs, machinery parts, and finished products to avoid excess inventory holding costs or shortages. Implement inventory tracking systems and efficient storage practices to minimize losses from spoilage, theft, or obsolescence.

- 8. Risk Management:** Develop risk mitigation strategies to protect against potential losses from factors such as adverse weather, pests, diseases, market fluctuations, and regulatory changes. Utilize insurance products, hedging instruments, diversification, and contingency planning to manage risks effectively.
- 9. Supplier Relationships:** Build strong relationships with input suppliers and service providers to negotiate favorable terms, discounts, and incentives. Explore bulk purchasing arrangements, cooperative buying groups, and strategic partnerships to leverage economies of scale and reduce input costs.
- 10. Continuous Improvement:** Foster a culture of continuous improvement by regularly evaluating farm operations, seeking feedback from stakeholders, and implementing innovations and best practices. Encourage collaboration, knowledge sharing, and ongoing learning among farm personnel to identify opportunities for cost-saving initiatives and operational enhancements.

By implementing these cost management strategies and fostering a culture of efficiency and innovation, agricultural businesses can enhance their competitiveness, resilience, and long-term sustainability in a dynamic and challenging operating environment.

#### **5.1.4 Tools to Measure the Performance of Cost Management in Agricultural Sector**

Measuring the performance of cost management in the agricultural sector requires tools and metrics that assess the effectiveness of cost-saving initiatives and identify opportunities for further improvement. Here are some tools specifically tailored to measure the performance of cost management in agriculture:

- 1. Cost-Volume-Profit (CVP) Analysis:** CVP analysis helps assess the relationship between costs, sales volume, and profitability. By analyzing cost structures, contribution margins, and breakeven points, farmers can evaluate the impact of changes in production levels, input costs, and selling prices on overall profitability.
- 2. Cost Benchmarking:** Benchmarking involves comparing farm-specific cost

metrics (e.g., cost per acre/hectare, cost per unit of production) against industry benchmarks or peer farms to identify areas of cost inefficiency and set performance targets. This allows farmers to gauge their cost competitiveness and prioritize cost-saving efforts.

- 3. Budget Variance Analysis:** Conducting variance analysis involves comparing actual expenses against budgeted amounts to identify discrepancies and understand the reasons behind cost deviations. By analyzing variances, farmers can pinpoint areas where costs are higher than expected and implement corrective actions to control expenses.
- 4. Input Efficiency Metrics:** Measure the efficiency of input usage by tracking metrics such as input-to-output ratios (e.g., input per unit of yield), input costs as a percentage of total production costs, and input usage per acre/hectare. Improvements in input efficiency indicate effective cost management practices and resource optimization.
- 5. Labor Productivity Metrics:** Assess labor productivity by monitoring metrics such as labor hours per unit of production, labor costs per acre/hectare, and labor costs as a percentage of total operating expenses. Increasing labor productivity through training, task optimization, and technology adoption can lead to cost savings and operational efficiency.
- 6. Machinery Utilization Analysis:** Evaluate the utilization of farm machinery and equipment by tracking metrics such as machinery downtime, utilization rates, and maintenance costs per operating hour. Maximizing machinery utilization and minimizing idle time can help reduce depreciation costs and improve operational efficiency.
- 7. Energy Efficiency Metrics:** Measure energy consumption and efficiency by tracking metrics such as energy usage per acre/hectare, energy costs as a percentage of total operating expenses, and energy intensity indicators (e.g., energy use per unit of output). Implementing energy-saving practices and adopting renewable energy sources can lower energy expenses and enhance cost management.
- 8. Inventory Turnover Ratios:** Calculate inventory turnover ratios to assess how efficiently farm inputs (e.g., seeds, fertilizers, pesticides) and finished products are being utilized and sold. Higher inventory turnover indicates

effective inventory management practices, reducing holding costs and improving cash flow.

- 9. Return on Investment (ROI):** Evaluate the return on investment for cost-saving initiatives and capital expenditures by comparing the benefits gained (e.g., cost reductions, increased productivity) to the costs incurred. Calculating ROI helps prioritize investments and assess their impact on overall profitability.
- 10. Sustainability Cost Metrics:** Consider integrating sustainability metrics into cost management assessments, such as tracking the cost savings associated with sustainable practices (e.g., reduced chemical inputs, water conservation, soil conservation) and quantifying the financial benefits of environmental stewardship.

By utilizing these tools and metrics, farmers and agricultural businesses can effectively measure the performance of cost management efforts, identify areas for improvement, and make informed decisions to enhance cost efficiency and profitability in the agricultural sector.

### 5.1.5 Minimum Support Price (MSP)

- 1. Purpose:** The primary objective of MSP is to provide price stability and income security to farmers, especially for essential crops that are subject to market volatility. It serves as a safety net for farmers against low market prices and encourages agricultural production by assuring a minimum income level.
- 2. Determination:** Governments typically set MSP based on various factors such as production costs, market demand-supply dynamics, inflation rates, and the need to maintain food security. MSP is often determined through consultations with agricultural experts, farmers' representatives, and input from market intelligence.
- 3. Implementation:** Once the MSP is announced, government agencies or designated entities procure crops from farmers at the guaranteed price. The procured crops are then used for various purposes such as public distribution, buffer stock maintenance, and welfare schemes, or sold in the market as deemed appropriate.
- 4. Criticisms:** Despite its intended benefits, MSP has faced criticism on several

fronts. Critics argue that MSP distorts market signals, encourages overproduction of certain crops, contributes to inefficiencies in resource allocation, and imposes financial burdens on governments. Moreover, MSP often benefits larger farmers disproportionately, leaving small and marginalized farmers with limited access to price support.

### 5.1.6 International Perspective

- 1. Variation in Approach:** Different countries have adopted various price support mechanisms, including MSP equivalents, to address agricultural challenges. For example, the European Union's Common Agricultural Policy (CAP) includes price support measures such as intervention prices and direct payments to farmers.
- 2. Subsidy Programs:** Many countries provide subsidies and incentives to farmers as part of their agricultural policies, aiming to support rural livelihoods, ensure food security, and maintain agricultural competitiveness. These subsidies may take the form of input subsidies, price support, income support, or risk management programs.
- 3. Trade Implications:** Price support mechanisms such as MSP can affect international trade dynamics by influencing domestic production levels, market prices, and export competitiveness. Critics argue that MSP and other forms of agricultural subsidies in developed countries distort global markets, disadvantage producers in developing countries, and hinder efforts to achieve fair and open trade.
- 4. WTO Regulations:** The World Trade Organization (WTO) regulates agricultural subsidies and domestic support measures through agreements such as the Agreement on Agriculture (AoA). Countries are required to report their subsidy programs and adhere to specified limits to avoid trade disputes and maintain a level playing field in global trade.
- 5. Reform Efforts:** There have been calls for reforms in agricultural support policies worldwide to address concerns related to market distortion, trade disparities, environmental sustainability, and social equity. Efforts to reform agricultural support systems often involve discussions on targeted assistance,

decoupling support from production, promoting sustainable practices, and improving market access for smallholder farmers.

In summary, the Minimum Support Price (MSP) is a significant policy tool used by governments to support farmers and stabilize agricultural markets. However, its implementation and effectiveness vary across countries, and it remains a subject of debate regarding its impact on market dynamics, trade relations, and the welfare of farmers.

## LETS SUM UP

Cost management in the agriculture sector involves effectively controlling and reducing production costs to enhance profitability and sustainability. Key features of cost management in this sector include the variability of costs due to weather conditions, seasonality, and the reliance on natural resources. The cost structure in agriculture typically includes inputs such as seeds, fertilizers, labor, equipment, and transportation. Tools to measure the performance of cost management in agriculture include cost-benefit analysis, budgeting, benchmarking, and the use of precision agriculture technologies. The Minimum Support Price (MSP) is a crucial mechanism used by governments to ensure farmers receive a minimum price for their produce, thereby protecting them from market fluctuations. From an international perspective, cost management practices vary, with some countries focusing on subsidies and others on technological advancements to improve efficiency and reduce costs. Overall, effective cost management in agriculture is essential for improving productivity, ensuring food security, and sustaining the livelihoods of farmers.

### Section 5.1 Check Your Progress – QUIZ - 1

- 1. What is a key feature of cost management in the agriculture sector?**
  - A. Consistent pricing throughout the year
  - B. Minimal variability due to weather conditions
  - C. Reliance on artificial resources
  - D. Seasonal fluctuations and reliance on natural resources
- 2. Which of the following is typically included in the cost structure of agriculture?**
  - A. Software licenses
  - B. Electricity bills
  - C. Marketing expenses

- D. Subscription fees
3. **Which tool is commonly used to measure the performance of cost management in agriculture?**
- A. Social media analytics
  - B. Financial audits
  - C. Cost-benefit analysis
  - D. Employee surveys
4. **What is the purpose of Minimum Support Price (MSP) in agriculture?**
- A. Maximizing profits for farmers
  - B. Regulating imports of agricultural products
  - C. Ensuring minimum income for farmers
  - D. Setting a ceiling on agricultural prices
5. **From an international perspective, countries differ in their approach to agriculture cost management. Which strategy focuses on technological advancements?**
- A. Subsidies for agricultural inputs
  - B. Price controls on agricultural products
  - C. Precision agriculture technologies
  - D. Protectionist policies

## 5.2 Cost Management in Information Technology Sector

Cost management in the Information Technology (IT) sector is crucial for ensuring the efficient use of resources, optimizing expenses, and maximizing profitability. Here are several key aspects of cost management in the IT sector:

1. **Total Cost of Ownership (TCO):** TCO analysis involves calculating the full cost of acquiring, implementing, and maintaining IT assets and systems over their entire lifecycle. This includes upfront costs such as hardware and software purchases, as well as ongoing expenses such as maintenance, support, upgrades, and training. By understanding the TCO of IT investments, organizations can make informed decisions about resource allocation and prioritize investments that offer the best value for money.
2. **Cloud Cost Management:** With the widespread adoption of cloud computing, managing cloud costs has become essential for organizations. Cloud cost management involves optimizing cloud usage, rightsizing resources, leveraging cost-saving strategies such as reserved instances and

spot instances, and monitoring and controlling cloud spending through cloud cost management tools and services.

3. **IT Infrastructure Optimization:** Optimizing IT infrastructure involves rationalizing hardware and software assets, consolidating data centers, virtualizing servers, and leveraging technologies such as software-defined networking (SDN) and hyper-converged infrastructure (HCI) to improve resource utilization, reduce hardware footprint, and lower infrastructure costs.
4. **Vendor Management:** Effective vendor management is critical for negotiating favourable contracts, managing vendor relationships, and controlling costs associated with IT products and services. This includes vendor selection, contract negotiation, performance monitoring, and vendor consolidation to reduce overhead and achieve cost efficiencies.
5. **IT Service Management (ITSM):** IT service management practices, such as ITIL (Information Technology Infrastructure Library), help organizations optimize service delivery, streamline processes, and reduce costs associated with incidents, problems, changes, and service requests. By implementing ITSM frameworks and best practices, organizations can improve operational efficiency and cost-effectiveness.
6. **Software License Management:** Managing software licenses is essential for controlling software costs, ensuring compliance with licensing agreements, and avoiding penalties for non-compliance. This involves tracking software licenses, optimizing license usage, implementing license management tools, and negotiating volume licensing agreements to reduce software expenses.
7. **Outsourcing and Off shoring:** Outsourcing IT functions and offshoring IT operations can offer cost advantages by accessing specialized skills, reducing labor costs, and leveraging economies of scale. However, organizations must carefully evaluate outsourcing arrangements, assess the total cost of outsourcing, manage vendor relationships, and mitigate risks associated with off shoring.
8. **Cost Transparency and Governance:** Establishing cost transparency and governance mechanisms helps organizations track and control IT expenses, allocate costs to business units or projects accurately, and ensure

accountability for cost management initiatives. This involves implementing cost allocation methodologies, establishing cost management policies, and conducting regular cost reviews and audits.

- 9. Risk Management:** Managing IT-related risks, such as cybersecurity threats, data breaches, and compliance violations, is essential for mitigating potential financial losses and reputational damage. Investing in cybersecurity measures, implementing robust data protection policies, and conducting risk assessments help organizations safeguard their IT assets and reduce the financial impact of security incidents.
- 10. Continuous Improvement:** Continuous improvement is fundamental to effective cost management in the IT sector. Organizations should regularly evaluate cost-saving opportunities, benchmark performance against industry peers, solicit feedback from stakeholders, and adopt emerging technologies and best practices to drive ongoing improvements in cost efficiency and effectiveness.

By addressing these key aspects of cost management, organizations in the IT sector can optimize their IT investments, enhance operational efficiency, and achieve sustainable cost savings while supporting business objectives and driving innovation.

### 5.2.1 Features of Cost Management in IT Sector

Cost management in the IT sector involves various features and practices aimed at controlling expenses, optimizing resource utilization, and maximizing the value of IT investments. Here are some key features of cost management in the IT sector:

- 1. Total Cost of Ownership (TCO) Analysis:** Conducting comprehensive TCO analysis to evaluate the full cost of IT assets and services over their entire lifecycle, including acquisition, deployment, maintenance, support, and disposal.
- 2. Cloud Cost Optimization:** Implementing strategies to optimize cloud usage, minimize cloud spending, and maximize cost efficiencies in cloud environments through rightsizing, resource optimization, and leveraging cost management tools and services.
- 3. IT Infrastructure Rationalization:** Rationalizing IT infrastructure by

consolidating servers, virtualizing resources, optimizing data center operations, and adopting technologies such as software-defined networking (SDN) and hyper-converged infrastructure (HCI) to reduce hardware and operational costs.

- 4. Vendor Management and Negotiation:** Managing vendor relationships effectively, negotiating favorable contracts, and optimizing vendor agreements to achieve cost savings, improve service levels, and ensure compliance with contractual terms.
- 5. Software License Optimization:** Managing software licenses to control costs, ensure compliance with licensing agreements, and optimize license usage through software asset management (SAM) practices, license optimization tools, and license consolidation strategies.
- 6. Outsourcing and Offshoring Strategies:** Evaluating outsourcing and offshoring opportunities to leverage cost advantages, access specialized skills, and optimize IT service delivery while managing risks associated with outsourcing arrangements.
- 7. Cost Allocation and Chargeback:** Implementing transparent cost allocation methodologies and chargeback mechanisms to accurately allocate IT costs to business units or departments based on usage, consumption, or other relevant metrics.
- 8. Financial Governance and Controls:** Establishing financial governance frameworks, policies, and controls to monitor IT spending, enforce budgetary discipline, track cost-saving initiatives, and ensure compliance with financial regulations and organizational policies.
- 9. IT Service Management (ITSM):** Adopting ITSM practices and frameworks such as ITIL (Information Technology Infrastructure Library) to standardize service delivery processes, optimize service management workflows, and enhance operational efficiency while controlling costs.
- 10. Risk Management and Cost Containment:** Identifying and mitigating IT-related risks such as cybersecurity threats, data breaches, and compliance violations to minimize potential financial losses, safeguard IT assets, and maintain business continuity.

**11. Continuous Improvement and Optimization:** Continuously monitoring and optimizing IT costs through regular cost reviews, performance benchmarking, stakeholder feedback, and the adoption of emerging technologies and best practices to drive ongoing improvements in cost efficiency and effectiveness.

By incorporating these features into their cost management practices, organizations in the IT sector can enhance financial transparency, control expenses, and maximize the return on their IT investments while supporting business objectives and driving innovation.

### 5.2.2 Cost Structure in IT Sector

The cost structure in the IT sector can vary significantly depending on the specific nature of the IT services provided, the business model of the organization, and other factors. Here are some common components of the cost structure in the IT sector:

- 1. Infrastructure Costs:** This includes expenses related to the physical and virtual infrastructure required to support IT operations, such as data centers, servers, networking equipment, storage systems, and cloud computing resources. These costs may encompass both capital expenditures (CAPEX) for purchasing hardware and ongoing operational expenses (OPEX) for maintenance, upgrades, and utilities.
- 2. Software Costs:** This includes expenses associated with acquiring, licensing, and maintaining software applications, development tools, operating systems, and productivity suites. Software costs may vary depending on whether the organization develops custom software in-house, purchases commercial off-the-shelf (COTS) software, or subscribes to software-as-a-service (SaaS) offerings.
- 3. Human Resources Costs:** This includes expenses related to employing IT professionals, such as salaries, wages, benefits, training, and recruitment costs. Human resources costs are a significant component of the cost structure in the IT sector, particularly for organizations that rely heavily on skilled technical talent for software development, system administration, cybersecurity, and other IT functions.

- 4. Research and Development (R&D) Costs:** This includes expenses associated with research, innovation, and product development activities aimed at creating new IT solutions, improving existing products, and staying ahead of technological advancements. R&D costs may cover investments in prototyping, testing, experimentation, and intellectual property development.
- 5. Marketing and Sales Costs:** This includes expenses related to marketing, advertising, and sales efforts aimed at promoting IT products and services, generating leads, acquiring customers, and maintaining client relationships. Marketing and sales costs may include advertising campaigns, sales commissions, marketing materials, and participation in industry events.
- 6. Customer Support and Service Delivery Costs:** This includes expenses associated with providing customer support, technical assistance, and service delivery to clients. Customer support costs may include help desk operations, technical support staff salaries, customer training programs, and service level agreements (SLAs) compliance.
- 7. Administrative and Overhead Costs:** This includes general administrative expenses and overhead costs associated with running the IT business, such as office rent, utilities, insurance, legal fees, accounting services, and administrative staff salaries. Administrative and overhead costs are necessary to support day-to-day operations and ensure compliance with regulatory requirements.
- 8. Security and Compliance Costs:** This includes expenses related to cyber security measures, data protection initiatives, and compliance with industry regulations and standards. Security and compliance costs may include investments in firewalls, antivirus software, intrusion detection systems, security audits, and regulatory compliance assessments.
- 9. Outsourcing and Vendor Costs:** This includes expenses associated with outsourcing IT functions, engaging third-party vendors, and procuring external services or expertise. Outsourcing and vendor costs may cover IT consulting fees, managed services contracts, software development outsourcing, and cloud service subscriptions.
- 10. Depreciation and Amortization:** This includes non-cash expenses

related to the depreciation of tangible assets (e.g., hardware, equipment) and the amortization of intangible assets (e.g., software licenses, patents) over their useful lives. Depreciation and amortization expenses impact the organization's profitability and tax liabilities.

Understanding and effectively managing these cost components is essential for IT organizations to control expenses, optimize resource allocation, and achieve sustainable growth and profitability in a competitive market environment.

### 5.2.3 Cost Management

Cost management in the IT sector is crucial for organizations to remain competitive, deliver value to customers, and achieve profitability. When considering an international perspective, several factors come into play that influence cost management strategies and practices in the IT sector:

- 1. Labor Costs:** Labor costs vary significantly across countries and regions due to differences in wage rates, labor laws, and skill levels. In the IT sector, organizations may leverage global talent pools by outsourcing software development, IT support, and other services to countries with lower labor costs. Offshoring IT operations to countries with skilled yet cost-effective labor forces can result in substantial cost savings for organizations.
- 2. Currency Fluctuations:** Currency fluctuations can impact the cost of IT products and services, especially for organizations operating in multiple countries or engaging in international trade. Fluctuations in exchange rates can affect the cost of hardware, software licenses, cloud services, and outsourcing contracts denominated in foreign currencies. Organizations may employ hedging strategies or adjust pricing strategies to mitigate currency risk and manage costs effectively.
- 3. Regulatory Compliance:** Compliance with international regulations and standards adds complexity and costs to IT operations, particularly in areas such as data privacy, cybersecurity, and intellectual property rights. Organizations operating across borders must invest in compliance programs, regulatory assessments, and legal consultations to ensure adherence to local and international regulations, which can impact cost management efforts.
- 4. Market Competition:** The competitive landscape in the IT sector varies

across regions, with different players vying for market share and customer loyalty. Price competition may drive down profit margins and necessitate cost management measures such as cost reduction initiatives to maintain profitability in competitive markets.

- 5. Global Supply Chain Management:** IT organizations rely on a global supply chain for sourcing components, hardware, and software products. Supply chain disruptions, geopolitical tensions, trade barriers, and logistics challenges can impact supply chain costs and lead to supply chain diversification strategies, vendor management optimizations, and contingency planning to mitigate risks and ensure business continuity.
- 6. Technology Infrastructure Costs:** Infrastructure costs, including data centers, networking equipment, and cloud computing resources, can vary based on factors such as energy costs, real estate prices, and regulatory requirements. Organizations may optimize infrastructure costs by selecting cost-effective hosting locations, leveraging energy-efficient technologies, and negotiating favorable contracts with infrastructure providers.
- 7. Intellectual Property Protection:** Protecting intellectual property (IP) rights is critical for IT organizations operating globally to safeguard proprietary technologies, software code, and trade secrets. IP protection measures incur costs related to patents, copyrights, trademarks, legal fees, and enforcement actions to prevent infringement and maintain competitive advantage in the market.
- 8. Cultural and Language Differences:** Operating in diverse cultural and linguistic environments introduces communication challenges, training costs, and cultural adaptation efforts for IT organizations. Multinational companies may incur expenses related to cross-cultural training, language localization, and multicultural workforce management to foster collaboration and synergy across international teams.

In summary, cost management in the IT sector from an international perspective involves navigating complexities related to labor costs, currency fluctuations, regulatory compliance, market competition, supply chain management, technology infrastructure, intellectual property protection, and cultural differences. By understanding these factors and implementing effective cost management strategies,

IT organizations can mitigate risks, seize opportunities, and achieve sustainable growth in global markets.

### 5.2.4 International Perspective

Cost management in the IT sector is crucial for organizations worldwide to ensure efficient resource allocation, control expenses, and maximize profitability. Here's how cost management in the IT sector is viewed from an international perspective:

- 1. Global Sourcing and Offshoring:** Many IT organizations leverage global sourcing and offshoring strategies to access cost-effective talent pools, reduce labor expenses, and gain competitive advantages. Offshore outsourcing destinations such as India, China, Eastern Europe, and Southeast Asia offer skilled IT professionals at lower labor rates, enabling organizations to lower development and operational costs.
- 2. Outsourcing and Managed Services:** International organizations often engage in outsourcing arrangements and managed services contracts to delegate IT functions, such as software development, infrastructure management, and technical support, to third-party vendors or service providers. Outsourcing IT services can help organizations reduce costs, mitigate risks, and focus on core business activities while leveraging external expertise and scalability.
- 3. Cloud Computing and Pay-as-You-Go Models:** Cloud computing platforms and pay-as-you-go pricing models have revolutionized the IT industry by offering flexible, scalable, and cost-effective alternatives to traditional on-premises infrastructure and software deployments. International organizations embrace cloud services to reduce capital expenditures (CAPEX), optimize operational expenses (OPEX), and benefit from economies of scale, as cloud providers invest in global data centers and infrastructure.
- 4. Cost Transparency and Benchmarking:** International organizations emphasize cost transparency and benchmarking initiatives to compare IT expenses, performance, and service levels across geographies, business units, and peer organizations. Benchmarking against industry standards and best practices helps organizations identify cost-saving opportunities, optimize

resource allocation, and negotiate favorable contracts with vendors and service providers.

- 5. Regulatory Compliance and Data Protection:** Compliance with international regulations, data protection laws, and industry standards (e.g., GDPR, HIPAA, PCI DSS) imposes additional costs and complexities on IT organizations operating across borders. Organizations invest in compliance programs, cybersecurity measures, and data privacy initiatives to mitigate regulatory risks, protect sensitive information, and avoid legal penalties and reputational damage.
- 6. Currency Fluctuations and Exchange Rate Risks:** International IT organizations are exposed to currency fluctuations and exchange rate risks, particularly when operating in multiple countries with different currencies. Exchange rate volatility can impact IT procurement costs, revenue streams, profit margins, and financial performance. Organizations may hedge against currency risks or diversify operations to minimize exposure to currency fluctuations.
- 7. Geopolitical Considerations and Trade Policies:** Geopolitical factors, trade policies, and international relations influence IT cost management strategies, supply chain dynamics, and market access for technology products and services. Tariffs, trade barriers, sanctions, and geopolitical tensions may disrupt global supply chains, increase import/export costs, and affect IT procurement decisions and sourcing strategies.
- 8. Emerging Markets and Growth Opportunities:** International IT organizations identify emerging markets and growth opportunities in developing countries and regions with expanding economies, rising technological adoption rates, and increasing demand for IT products and services. Investing in emerging markets enables organizations to access new customer segments, diversify revenue streams, and capitalize on cost-effective growth opportunities while managing risks associated with regulatory, political, and economic uncertainties.

## LETS SUM UP

Cost management in the Information Technology (IT) sector involves

strategies aimed at optimizing expenses while maintaining or improving service delivery and innovation. Key features include the dynamic nature of IT costs due to rapid technological advancements, varying labor costs based on skill levels, and significant investments in infrastructure and software development. The cost structure in the IT sector typically includes expenses related to hardware, software licenses, cloud services, personnel salaries (including specialized IT professionals), maintenance, and cybersecurity. From an international perspective, cost management practices in the IT sector vary widely, influenced by factors such as labor market conditions, regulatory environments, and technological infrastructure. Countries may focus on cost efficiencies through outsourcing, leveraging offshore teams, or investing in cutting-edge technologies to gain competitive advantages. Overall, effective cost management in the IT sector is crucial for achieving operational efficiency, adapting to market demands, and sustaining profitability amidst rapid technological changes.

## **Section 5.2 Check Your Progress – QUIZ – 2**

### **1. What is a key feature of cost management in the IT sector?**

- A. Stable labor costs
- B. Minimal investments in infrastructure
- C. Static nature of IT expenses
- D. Rapid technological advancements

### **2. Which of the following is typically part of the cost structure in the IT sector?**

- A. Land acquisition costs
- B. Raw material expenses
- C. Software licenses
- D. Advertising expenditures

### **3. Which cost management strategy is commonly employed in the IT sector to optimize expenses?**

- A. Increasing hardware costs
- B. Reducing investments in cybersecurity
- C. Outsourcing IT services
- D. Decreasing software updates

### **4. From an international perspective, what influences cost management practices in the IT sector?**

- A. Currency exchange rates
- B. Agriculture subsidies
- C. Environmental regulations

D. Healthcare policies

**5. What is a significant challenge in managing costs in the IT sector?**

A. Predictable labor market conditions

B. Static technological advancements

C. Cyber security threats

D. Reduced demand for IT services

### **5.3 UNIT SUMMARY**

Cost management in both the agriculture and information technology (IT) sectors involves strategic approaches to optimize expenses and enhance efficiency, tailored to their respective industries.

In the **agriculture sector**, cost management focuses on controlling input costs such as seeds, fertilizers, labor, equipment, and transportation, which are influenced by factors like weather, seasonality, and market conditions. Tools for measuring performance include cost-benefit analysis, budgeting, and precision agriculture technologies. The Minimum Support Price (MSP) ensures farmers receive a fair price for their produce, crucial for stabilizing incomes amidst market fluctuations. Internationally, practices vary widely, with some countries using subsidies and others emphasizing technology to improve productivity and sustainability.

Conversely, in the **IT sector**, cost management addresses dynamic expenses related to hardware, software licenses, cloud services, personnel, and cybersecurity. Features include rapid technological advancements, varying labor costs, and substantial investments in infrastructure and innovation. International perspectives in IT cost management reflect diverse strategies influenced by global labor markets, regulatory environments, and currency fluctuations. Strategies may include outsourcing, offshoring, or investing in cutting-edge technologies to maintain competitiveness and operational efficiency.

Both sectors rely on effective cost management to optimize resources, ensure sustainability, and navigate global market dynamics while meeting sector-specific challenges and opportunities.

## 5.4 GLOSSARY

### 1. Cost Management

- **Agriculture Sector:** Strategies aimed at optimizing expenses related to inputs such as seeds, fertilizers, labor, and equipment, considering factors like weather conditions and seasonality.
- **IT Sector:** Strategic approaches to controlling expenses associated with hardware, software licenses, cloud services, personnel, and cybersecurity, amidst rapid technological advancements.

### 2. Features of Cost Management

- **Agriculture Sector:** Focus on variability in input costs, reliance on natural resources, and tools like cost-benefit analysis and precision agriculture technologies.
- **IT Sector:** Addressing dynamic costs influenced by technological innovation, varying labor markets, and investments in infrastructure and cyber security.

### 3. Cost Structure

- **Agriculture Sector:** Includes expenses for seeds, fertilizers, labor, equipment, transportation, and overhead costs, shaped by seasonal and market conditions.
- **IT Sector:** Encompasses expenditures on hardware, software licenses, cloud services, personnel salaries (including specialized IT professionals), maintenance, and cybersecurity measures.

### 4. Tools to Measure Performance

- **Agriculture Sector:** Methods like cost-benefit analysis, budgeting, and precision agriculture technologies to evaluate efficiency and profitability.
- **IT Sector:** Utilization of financial analysis, budget management tools, and performance metrics to assess cost-effectiveness and operational efficiency.

### 5. Minimum Support Price (MSP)

- **Definition:** A government-regulated price intended to ensure farmers receive a minimum income for their produce, protecting against market fluctuations in the agriculture sector.

### 6. International Perspective

- **Agriculture Sector:** Varied approaches among countries, including

subsidies, technological advancements, and trade policies to enhance productivity and sustainability.

- **IT Sector:** Diverse strategies influenced by global labor markets, regulatory environments, and technological infrastructure to manage costs and maintain competitiveness.

## 7. Precision Agriculture Technologies

- **Definition:** Advanced technologies such as GPS, remote sensing, and IoT devices used in agriculture to optimize crop yields, reduce input costs, and enhance farm management practices.

## 8. Cyber security

- **Definition:** Measures and technologies implemented to protect computer systems, networks, and data from unauthorized access, cyberattacks, and data breaches, crucial in the IT sector's cost structure.

### 5. 5 SELF ASSESSMENT QUESTIONS 5 MARKS

1. Explain the key differences in cost management between the agriculture and IT sectors.
2. Discuss the role of Minimum Support Price (MSP) in the agriculture sector.
3. Compare and contrast the tools used to measure the performance of cost management in the agriculture and IT sectors.
4. Evaluate the impact of international perspectives on cost management strategies in both agriculture and IT sectors.
5. Explain the significance of precision agriculture technologies in optimizing costs and improving efficiency in the agriculture sector.

### SELF ASSESSMENT QUESTIONS 10 MARKS

1. Compare the cost structures of the agriculture and IT sectors.
2. Examine the role of government policies, such as Minimum Support Price (MSP) in agriculture and regulatory frameworks in IT, in shaping cost management practices.
3. Critically analyze the tools and methodologies used to measure performance in cost management for agriculture and IT sectors.
4. Discuss the international perspectives on cost management strategies in agriculture and IT sectors.
5. Evaluate the impact of technological advancements, such as precision

agriculture technologies in agriculture and advancements in cloud computing in IT, on cost management practices.

### 5.6 Answers for Check your Progress Quiz

<b>5.1 Section: Cost Management in Agriculture Sector QUIZ – 1</b>	
Q1	d) Seasonal fluctuations and reliance on natural resources
Q2	b) Electricity bills
Q3	c) Cost-benefit analysis
Q4	c) Ensuring minimum income for farmers
Q5	c) Precision agriculture technologies
<b>Section: 5.2 Cost Management in Information Technology Sector QUIZ – 2</b>	
Q1	d) Rapid technological advancements
Q1	c) Software licenses
Q1	c) Outsourcing IT services
Q1	a) Currency exchange rates
Q1	c) Cyber security threats

### 5.7 Reference and Suggested Readings:

**Strategic Cost Management Paperback – by Shank Govindarajan, Simon & Schuster; Latest edition (18 November 2008**

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