மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்

Manonmaniam Sundaranar University

Reaccredited with 'A' Grade (CGPA 3.13 Out of 4.0) by NAAC (3rd Cycle)

Tirunelveli - 627 012, Tamilnadu, India.

DIRECTORATE OF DISTANCE

& CONTINUING EDUCATION

STRATEGIC COST MANAGEMENT

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First Year Semester II

STRATEGIC COST MANAGEMENT

Course Units

UNIT I

Introduction to Strategic Cost Management

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 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.

UNIT III

Activity Based Cost Management

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

UNIT IV

Transfer Pricing

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

Cost Management in Agriculture and IT sector

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.

Booksforstudy:

1. Ravi M Kishore (2018), "Strategic Cost Management", 5th Edition,Taxmann Publications Pvt. Ltd, NewDelhi.
2. Bandgar P. K., (2017), "Strategic Cost Management", 1st Edition, Himalaya Publishing House Pvt Ltd, Mumbai.
3. SexenaV.K.,(2020),"Strategic Cost Management and Performance Evaluation", 1st Edition,SultanChand&Sons,New Delhi.

Booksforreference:

1. John K Shank and Vijay Govindarajan (2008),Strategic Cost Management,Simon & Schuster; Latest edition, UK
2. JawaharLal,(2015),"Strategic Cost Management", 1st Edition, Himalaya Publishing House PvtLtd, Mumbai.)
3. AroraM.N.,(2021),"ATextBookofCostandManagementAccounting",11th Edition,Vikas PublishingHouse Pvt.Ltd., NewDelhi.

Webreferences:

1. https://www.accountingtools.com/articles/strategic-cost-management.html#:~:text=Strategic%20cost%20management%20is%20the,it%20or%20have%20no%20impact.
2. https://ca-final.in/wp-content/uploads/2018/09/Chapter-4-Cost-Management-Techniques.pdf
3. https://resource.cdn.icai.org/66530bos53753-cp5.pdf

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STRATEGIC COST MANAGEMENT

UNIT –I

INTRODUCTION TO STRATEGIC COST MANAGEMENT

COST MANAGEMENT INFORMATION

It is the information the manager needs to effectively manage the firm and includes both financial information about costs and revenues as well as relevant non-financial information about productivity, quality, and other key success factors for the firm. Financial information (earnings made, costs incurred etc.) tends to have a short term focus while the non-financial factors like productivity, quality, customer loyalty have a long term focus.

'Strategic Cost Management' is the development of cost management information to facilitate the principal management function, strategic management. Strategic Management in essence is the development of a sustainable competitive position in which the firm's competitive advantage provides continued success. Because strategic issues are increasing in importance to management, cost management has moved from a traditional role of product costing and operational control to a broader, strategic focus: strategic cost management.

Managers usually use following tools to implement firm's broad strategy and influence the cost management.

•Benchmarking

Benchmarking is a process by which a firm identifies its critical success factors, studies the best practices of other firms (or other units within a firm) and then implements improvements in the firm's processes to match or beat the performance of those competitors.

•Total Quality Management

TQM is a technique by which management develops policies & practices to ensure that the firm's products and services exceed customers' expectations. This approach includes increased product functionality, reliability, and durability and serviceability. Cost management is used to analyse the cost consequences of different design choices for TQM and to measure and report the many aspects of quality including production breakdowns and defects, wasted labour or raw materials, the number of service calls, and the nature of complaints, warranty costs, and product recalls. TQM efforts can build brand loyalty and help company improve product quality and competitiveness quickly.

•Continuous Improvement

It is a Japanese management technique Kaizen by which managers & workers commit to a program of continuous improvement in quality and other critical success factors. It is often associated with Benchmarking & TQM.

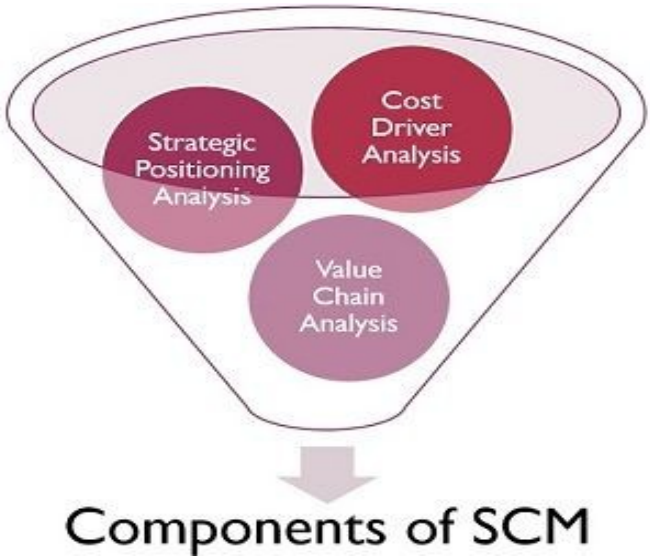
NEED FOR SCM

1. It is an updated form of cost analysis, in which the strategic elements are more clear and formal and improves the overall position of the company.
2. It is used to analyse cost information, and use it to develop various measures to achieve a sustainable competitive advantage.
3. It provides a better understanding of the overall cost structure in the quest of gaining a sustainable competitive advantage.
4. It uses cost information specifically to govern the strategic management process – formulation, communication, implementation and control.
5. It helps in identifying the cost relationship between value chain activities and its process of management to gain competitive advantage.

The strategic cost management must be implemented at the initial stages of production, so as to reduce heavy cost failure.

COMPONENTS OF STRATEGIC COST MANAGEMENT

There are three important components of strategic cost management:



1. **Strategic Positioning Analysis**: It determines the company's comparative position in the industry in terms of performance.
2. **Cost Driver Analysis**: Cost is driven by different interrelated factors. In strategic cost management, the cost driver is divided into two categories, i.e. structural cost drivers and executional cost drivers. It examines measures and explains the financial effect of the cost driver concerned with the activity.
3. **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.

TRADITIONAL VS STRATEGIC COST MANAGEMENT

Particulars	**Traditional Cost Management**	**Strategic Cost Management**
Time Span	Short term concept	Long term concept
Focus	Internal	Both Internal and External
Cost Driver Concept	Based on volume of the product	Each value activity has a separate cost driver. So, not based on volume but on activities associated with the manufacturing of the product.
Objective	Score keeping, attention directing and problem solving.	Cost leadership or product differentiation.
Cost Reduction	Primary objective is cost reduction.	Primary objective is cost containment- cost reduction and value improvement at the same time.
Approach	Risk-averse.	Risk taking and ability to adapt itself with changing environment.

VALUE CHAIN

Developed by Michael Porter in 1985 and used throughout the world, the value chain is a powerful tool for disaggregating a company into its strategically relevant activities in order to focus on the sources of competitive advantage, that is, the specific activities that result in lower costs or higher prices.

A company's value chain is typically part of a larger value system that includes companies either upstream (suppliers) or downstream (distribution channels), or both. This perspective about how value is created forces managers to consider and see each activity not just as a cost, but as a step that has to add some increment of value to the finished product or service.

Manufacturing companies create value by acquiring raw materials and using them to produce something useful. Retailers bring together a range of products and present them in a way that is convenient to customers, sometimes supported by services such as trial rooms or personal shopper advice and insurance companies offer policies to customers that are underwritten by larger re-insurance policies. Here, they are packaging these larger policies in a customer-friendly way, and distributing them to a mass audience.

In other words, the value that is created and captured by a company as reduced by the costs incurred is the profit margin.

Expressed as a formula the equation would read as:

Value Created and Captured – Cost of Creating that Value = Profit Margin

The more value an organization creates, the more profitable it is likely to be. As more and more value is provided to the customers, competitive advantage creeps in. Understanding how a company creates value, and looking for ways to add more value, are critical elements in developing a competitive strategy.

Thus, the value chain is a set of activities that an organization carries out to create value for its customers. Porter proposed a general-purpose value chain that companies can use to examine all of their activities, and see how they are connected. The way in which value chain activities are performed determines costs and affects profits.

VALUE CHAIN ANALYSIS (VCA)

"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.

Conducting a value chain analysis prompts a firm to consider how each step adds or subtracts value from its final product or service. This, in turn, can help it realize some form of competitive advantage, such as:

● Cost reduction, by making each activity in the value chain more efficient and, therefore, less expensive

● Product differentiation, by investing more time and resources into activities like research and development, design, or marketing that can help the product stand out

Typically, increasing the performance of one of the four secondary activities can benefit at least one of the primary activities.

Difference between the value added cost and non-value added cost

Value added cost	Non-value added cost
It is the cost if eliminated, would reduce the value of the product.	It is the cost if eliminated, would not reduce the value of the product.
Cost that customer is willing to pay	Cost that customer is not willing to pay
It is necessary for performance of the process	It is not necessary for performance of the process
Work that is valued by external or internal customer	Work that is not valued by external or internal customer
It improve the Quality of the product	It does not improve the Quality of the product
It result is cost reduction and not loss	It adversely affect cost and prices

ELEMENTS IN PORTER'S VALUE CHAIN

Rather than looking at departments or accounting cost types, Porter's Value Chain focuses on systems, and how inputs are changed into the outputs purchased by consumers. Using this viewpoint, Porter described a chain of activities common to all businesses, and he divided them into primary and support activities, as shown below.

SUPPORT ACTIVITIES	Procurement (Purchasing of Raw, Materials, Machines, Suppliers)					MARGIN
	Human Resource Management (Recruiting, Training, Development)					
	Technology Development (R & D, Product and Process Improvement)					
	Firm Infrastructure (General Management, Accounting, Finance, Strategic Planning)					
	Inbound Logistics (Raw Materials, Handling and Warehousing)	Operations (Machining, Assembling, Texting Products)	Outbound Logistics (Warehousing and Distribution of Finished Products)	Marketing & Sales (Advertising Promotion, Pricing, Channel Relations)	Service (Installation Repair Parts)	

Primary Activities: Primary activities relate directly to the physical creation, sale, maintenance and support of a product or service. They consist of the following:

Inbound Logistics: These are all the processes related to receiving, storing, and distributing the inputs internally. The supplier relationships are a key factor in creating value here.

Operations: These are the transformation activities that change inputs into outputs that are sold to customers. Here, operational systems create value.

Outbound Logistics: These activities deliver the product or service to the customer. These are the things like collection, storage, and distributing the outputs. They may be internal or external to the organisation.

Marketing and Sales: These are the processes that are used to persuade clients to purchase from the firm instead of its competitors. The benefits being offered, and how well they are communicated to the customers, are sources of value here.

Service: These are the activities related to maintaining the value of the product or service to customers, once it has been purchased.

Support Activities: Support activities support the primary functions stated above. Each support, or secondary, activity can play a role in each primary activity. For example, procurement supports operations with certain activities, but it also supports marketing and sales with other activities.

Procurement (Purchasing): This is what the organisation does to get the resources it needs to operate. This includes finding vendors and negotiating best prices.

Human Resource Management: This is how well a company recruits, hires, trains, motivates, rewards, and retains its workers. People are a significant source of value, so businesses can create a clear advantage with good HR practices.

Technological Development: These activities relate to managing and processing information, as well as protecting a company's knowledge base. Minimizing information technology costs, staying current with technological advances, and maintaining technical excellence are sources of value creation.

Infrastructure: These are a company's support systems, and the functions that allow it to maintain daily operations. Accounting, legal, administrative, and

general management are examples of necessary infrastructure that businesses can use to their advantage.

Companies use these primary and support activities as “building blocks” to create a valuable product or service.

Five Steps to developing a value chain analysis (Illustrative)

Step 1: Identify all value chain activities

Identify each activity that plays a part in creating your company’s finished product. For example, it is not enough to write down that you have a product design team. You need to dig deeper and ask:

How many designers are on that team?

How much time does each activity on that team require? What raw materials are they using?

Once you’ve identified each primary activity in detail, you’ll need to do the same for each support activity. This step will take a considerable amount of time and, if possible, shouldn’t be a one-person task. Instead, encourage cross-collaboration internally so each department can outline its logistics, operational costs and services.

Step 2: Calculate the cost of each activity

Remember to calculate cost drivers such as rent, utilities and staff. By having an accurate picture of every single cost (and what activities increase or decrease costs), it’s easier to see how much revenue you’re actually generating. Once each activity has been mapped out, you can delineate which parts of your value chain are costing your business the most money. According to the Financial Times, a value chain analysis on a £2.50 cup of coffee revealed that only 1penny/pence goes to the actual coffee grower. The rest of the £2.49 is made up

of additional supplies like: Milk, Stirrers, Transport, Rent, Staff and Taxes. Using this value chain analysis example, we learn that the most critical component (coffee) is one of the least expensive parts of the cost breakdown. Rent and staff are the most expensive. Having this information, the company can choose their next steps wisely.

If they want to reduce rent costs, they can attempt to negotiate their contract. Failing that, they can relocate to a less expensive location. While that may draw less foot traffic, the low-cost option could potentially boost their profit margin. If they want to reduce staff costs, they could evaluate how many people are scheduled per shift and perhaps cut staff hours during less busy times. Alternatively, if they cannot streamline their process or lower costs in any way, they could try to boost their perceived value. They could do this by creating and promoting unique items, or sourcing new ingredients (at a similar cost) that increase sales or engagement.

It's easy to see why detailed, accurate calculations can make or break the effectiveness of your value chain.

Step 3: Look at what your customers perceive as value

Know that customers tie value directly to a product's price tag, in other words, perception greatly impacts product margins. Research shows that although branded and non-branded painkillers have the exact same health outcome, the former is better perceived by consumers. Because customers believe it is more valuable to their health, they're willing to pay more for the brand name. To determine what your end customers perceive as valuable, you need to dig into their psychology. Collecting quantitative and qualitative data can help you identify statistical patterns in your customer's buying behaviour. Identifying these qualities will also help your sales representatives down the line with prospecting and qualifying ideal customers.

Understanding why and how your customers make purchasing decisions boils down to understanding their intent and what they perceive as valuable.

As Rory Sutherland's TED Talk highlights, the same product can mean very different things to different people. He explains that when it comes to selling a product, there's no such thing as an objective value. Rather, the value that people place on products comes from factors such as societal influence and group-think. People often make decisions based on actions that their friends, family and close social groups take. For example, if people in your social circles start to buy noise-cancelling headphones to wear at work, you may begin to think of them as valuable, even if you didn't want to buy them before. Knowing what your customers, and their social circles, desire opens up the opportunity to market your product in a way that motivates them to buy it.

Step 4: Look at your competitors' value chains

The best way to determine value is through market analysis. Although it's unlikely you will have access to your competitors' infrastructure and operational breakdowns, you can use benchmarks as a starting point. This process is called competitive benchmarking. You can choose to use competitive benchmarking in one of three main ways:

(i) Process benchmarking: Comparing your process structure and operations against how your competitors carry out tasks.

(ii) Strategic benchmarking: Comparing your high-level business strategy to your competitors' to determine what emulates success.

(iii) Performance benchmarking: Comparing outcomes, such as revenue, organic traffic, social media performance, reviews and ratings and so on.

First, you need to determine your competitive benchmarking goals; then, you can conduct research, make a comparison and determine value. As Smart

Insights' Dave Chaffey explains, you need a baseline to review the marketing effectiveness of competitors. For example, the sales and marketing value chain of online companies can be expansive. By breaking down the rough costs of your competitor's online sales and marketing efforts, you can calculate whether your spending is too high. McKinsey recommends using a competitor-insight loop to build insight into your competitors' strategic planning and decision-making processes.

The key to making this process successful is to tap into the latest data from a competitor's frontline workforce, such as a blog or shared database, and identify value gaps.

Step 5: Decide on a competitive advantage

At this stage, you will have a clear understanding of your internal costs, what changes you can make and how they stack up to your competitors. If you choose cost advantage, you need to find a way to optimize and cut the cost of primary and support activities in your value chain. You might choose to outsource talent, replace certain human activities with automation or look for cheaper delivery services or distribution channels. As more and more people start working remotely, you may even get rid of office space. Any cost cuts you make in the chain can lower the cost of your final product. The more you can push your product prices down, the larger your cost advantage will be compared to competitors.

If you choose competitive differentiation, you must capitalize on increasing the value perception of those products that your customers and end users are most willing to pay for. You can cater to your customers' most basic desires and needs by recognizing their pain points and repositioning your products as the ultimate solution.

For example, your sales team can highlight your product differentiation during the sales pitch or closing stage in the pipeline by:

● Mentioning the unique benefits your product has that your competitors' products don't

● Presenting a case study from a customer that reinforces your position and highlighting relevant data or ROI (Return on Investment)

● listing other businesses in the prospect's industry that have used your product or service and had a positive experience

Example of Apple

When Steve Jobs began building Macs in the 80s in his garage, he wasn't doing it for customers — it was for himself. "We were the group of people who were going to judge whether it was great or not," he said in an interview years later. "We weren't going to go out and do market research." Just over a decade later, Jobs famously quipped: "People don't know what they want until you show it to them." These admissions give us a unique understanding of the mind-set behind a very successful brand. While Jobs was insistent on making products that he loved, the company spent massive amounts of money on its internal creative processes — a support activity in their value chain. These investments were made possible because of tight control over the cost of Apple's primary activities such as operations, logistics and support. This is what Apple's value chain analysis tells us about how the company became so successful.

Apple's Primary Activities

1. Inbound logistics: Apple's supply chain is enormous. Its top 200 suppliers provide the company with 98% of procurement expenditures for materials, manufacturing and product assembly. To manage the sheer volume of suppliers and inbound logistics, they must run a tight supply chain management ship. As

such, the suppliers are held to strict quality standards and to streamline this process, the company launched the Apple Procurement Program, which states:

"Our business environment is competitive and fast-paced. Our suppliers must understand this dynamic and be agile and flexible in responding to changing business conditions. Above all, Apple values innovation. We appreciate suppliers who truly understand and share in our challenges, and who help us find the best possible solutions."

Every year, the list of suppliers is revisited. Suppliers that meet Apple's standards and provide a more competitive product are added to the list to ensure optimization of their value chain.

2. Operations: Apple takes advantage of lower labour and raw material costs in Japan and China, overall manufacturing costs are also cut. Outsourcing helps them keep overall manufacturing costs low.

3. Outbound logistics: Apple's business model allows for products to be purchased online and from the company's stores. Because the company has hundreds of retail stores, it can capitalize on keeping any retail margins made through Apple sales. Brand name recognition also means that non-Apple outlets stock the products in large numbers. A Communications of the ACM article estimates that Apple gives retailers a 25% wholesale discount. Using this estimate, Apple was left with a gross profit of $80 for the 30GB 5th Gen iPods sold through non-Apple outlets. For any sale made through Apple's online or customer-facing stores, they also pocketed a $45 retail margin.

4. Marketing and sales: Apple's marketing and sales efforts are identifiable for its design, quality and innovation. In 2015, the company boosted its marketing budget to $1.8 Billion, explaining that an "ongoing investment in marketing and advertising is critical to the development and sale of innovative products and technologies". Apple's approach to marketing and sales reflects its chosen

competitive advantage: 'highlighting value'. As SeedX Inc Founder Jacqueline Basulto points out, Apple reflects its perceived value not only in the cost of its products but also in its advertising.

5. Service: Most products sold by Apple are initially covered by a 1-year warranty and 90 days of support from staff. Customers can book appointments for technical repairs or general product assistance. They also staff their stores with trained Apple technicians who offer guided, interacted demos to customers. Allowing store visitors to engage with products, in turn, helps encourage them to buy.

Apple's Support Activities

1. Research and development: Apple invests heavily in research and development. In 2019 alone, more than $16 billion was pumped into its R&D program to continue research into products that can maintain Apple's competitive advantage. The investment paid off: in 2020, the company released 28 new or refreshed products onto the market.

2. Human Resource Management: Apple was crowned the most admired company for HR in 2019, reflecting its reputation on hiring and paying well. The company is known for recruiting top candidates and even poaching talent from other companies to get the best people working for them.

Summing up, conducting a value chain analysis is one of the most powerful processes a business can undertake. The detail involved in the analysis can uncover where your company spends its money, how well your operations are working and how you can outmanoeuvre your competitors. In fact, without a detailed value chain analysis, it's impossible to see where you can lower costs and how to decide what competitive advantage will work best for your product. At the same time, a value chain analysis is invaluable in identifying wasteful activities in your product production. By sizing up your competitors and

tightening up your development process, you can take steps to add value to your product and ultimately your bottom line.

QUALITY COST MANAGEMENT

QUALITY COSTING

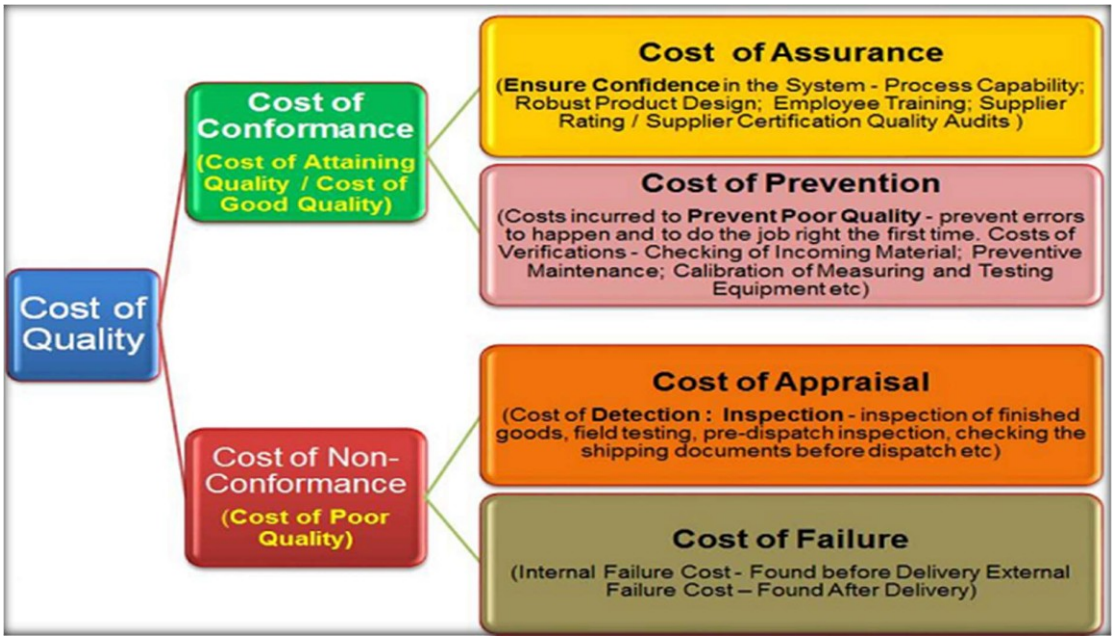
Cost of Quality is the total expenses incurred by an organization in achieving and maintaining good quality as well as in managing poor quality throughout its line of operations with an aim of attaining the highest level of customer satisfaction. Therefore, quality costing technique has become as one of the most "effective management tool" for collecting and "measuring" the expenses in maintaining quality in a production process and also identifies the non-value-added expenses.

Components of Cost of Quality

Cost of Quality (COQ) can be classified into two categories –

- Cost of Conformance (COC) or Cost of Good Quality (COGQ) and
- Cost of Non-Conformance (CONC) or Cost of Poor Quality (COPQ).

These classifications are explained with example in the following exhibit-



Cost of Conformance (COC) or Cost of Good Quality (COGQ) It can be defined as Costs associated with doing quality job, conducting quality improvements, and achieving quality goals. These are the costs that aim at assurance of quality and prevention of bad quality. That means Cost of Conformance has two sub-divisions: Cost of Assurance and Cost of Prevention.

(A) Cost of Assurance : These costs are associated with the quality requirements, systems and procedures, control measures and audits to ensure appropriate quality standards are used and complied such as money spent on establishing methods and procedures; Process Capability Studies; robust Product Design; proper employee training in performing good quality job; supplier rating / supplier certification (assessment and approval of suppliers of products and services), Quality audits (confirmation that the quality system is functioning correctly) acquiring tools, and planning for quality. Quality assurance provides confidence in the system that ensures quality of deliverables.

(B) Cost of Prevention: The costs that arise from efforts to keep defects from occurring at all- prevent errors to happen and to do the job right the first time. Prevention costs may include Costs of Verifications – checking of incoming material, processes, products, and services to ensure that they conform to agreed specifications; Preventive Maintenance; Calibration of measuring and test equipment etc. These are planned and incurred before actual operation and money is all spent before the product is actually built. The focus on prevention tends to reduce preventable costs of bad quality.

Cost of Non-Conformance (CONC) or Cost of Poor Quality (COPQ) is the costs associated with all activities and processes that do not meet agreed performance and / or expected outcomes. These costs would disappear if every

task were always performed without deficiency. These costs have two sub-divisions: Cost of Appraisal and Cost of Failure.

(A) Cost of Appraisal: Money spent to review completed products against requirements. Appraisal includes the cost of inspections, testing, and reviews. This money is spent after the product is built but before it is shipped to the user or moved into customers place. They could include: inspection of finished goods, field testing, pre- dispatch inspection, checking the shipping documents before dispatch etc

(B) Cost of Failure: All costs associated with defective products produced and or that have been delivered to the user. These costs are further sub-divided into Internal Failure Costs and External Failure Costs.

(a) Internal Failure Costs– These are the Costs generated before a product is shipped but after a product is made and inspected and found non-conformance to requirements, such as – Product/service design failure costs (internal – Design corrective action; Rework due to design changes; Scrap due to design changes);

Purchasing failure costs (Purchased material reject disposition costs; Purchased material replacement costs; Supplier corrective action; Rework of supplier rejects; Uncontrolled material losses); Operations (product or service) failure costs (Material review and corrective action costs – Disposition costs – Troubleshooting or failure analysis costs (operations) – Investigation support costs – Operations corrective action; Operations rework and repair costs – Rework – Repair; Re inspection/ retest costs; Extra operations; costs of Scrap (operations); Downgraded end product or service; Internal failure – labour losses; Other internal failure costs

(b) External Failure Costs—Costs generated after a product is shipped as a result of non-conformance to requirements, such as Complaint

investigation/customer service; Returned goods; Recall costs; Warranty claims; Liability costs; Penalties; Customer/user goodwill; Lost sales; Other external failure costs

Total Quality Management

Total Quality Management is a philosophy of continuously improving the quality of all the products and processes in response to continuous feedback for meeting the customers' requirements. It aims to do things right the first time, rather than need to fix problems after they emerge (a company should avoid defects rather than correct them). Its basic objective is customer satisfaction.

The elements of TQM are:

Total- Quality involves everyone and all activities in the company (Mobilizing the whole organization to achieve quality continuously and economically)

Quality- understanding and meeting the customers' requirements. (Satisfying the customers first time every time)

Management- Quality can and must be managed (Avoid defects rather than correct them)

TQM is a vision based, customer focused, prevention oriented, continuously improvement strategy based on scientific approach adopted by cost conscious people committed to satisfy the customers first time every time. It aims at Managing an organization so that it excels in areas important to the customer.

The underlying principles of TQM: The philosophy of TQM rest on the following principles which are enlisted below:

1. Clear exposition of the benefits of a project.

2. Total employee involvement

3. Process measurement.

4. Involvement of all customers and contributors.

5. Elimination of irrelevant data.

6. Understanding the needs of the whole process.

7. Use of graphical and pictorial techniques to achieve understanding.

8. Establishment of performance specifications and targets.

9. Use of errors to prompt continuous improvement.

10. Use of statistics to tell people how well they are doing

Steps in Total Quality Management:

Step 1: Identification of customers/customer groups:

Through a team approach (a technique called Multi-Voting), the Firm should identify major customer groups. This helps in generating priorities in the identification of customers and critical issues in the provision of decision-support information.

Step 2: Identifying customer expectations:

Once the major customer groups are identified, their expectations are listed. The question to be answered is - What does the customer expect from the Firm?

Step 3: Identifying customer decision-making requirements and product utilities:

By identifying the need to stay close to the customers and follow their suggestions, a decision-support system can be developed, incorporating both financial and nonfinancial and non-financial information, which seeks to satisfy user requirements. Hence, the Firm finds out the answer to - What are the customer's decision-making requirements and product utilities? The answer is

sought by listing out managerial perceptions and not by actual interaction with the customers.

Step 4: Identifying perceived problems in decision-making process and product utilities: Using participative processes such as brainstorming and multi-voting, the Firm seeks to list out its perception of problem areas and shortcomings in meeting customer requirements. This will list out areas of weakness where the greatest impact could be achieved through the implementation of improvements. The Firm identifies the answer to the question - What problem areas do we perceive in the decision-making process?

Step 5: Comparison with other Firms and benchmarking:

Detailed and systematic internal deliberations allow the Firm to develop a clear idea of their own strengths and weaknesses and of the areas of most significant deficiency. Benchmarking exercise allows the Firm to see how other Companies are coping with similar problems and opportunities.

Step 6: Customer Feedback:

Steps 1 to 5 provide a information base developed without reference to the customer. This is rectified at Steps 6 with a survey of representative customers, which embraces their views on perceived problem areas. Interaction with the customers and obtaining their views helps the Firm in correcting its own perceptions and refining its processes.

Steps 7 & 8: Identification of improvement opportunities and implementation of Quality Improvement Process:

The outcomes of the customer survey, benchmarking and internal analysis, provides the inputs for Steps 7 and 8, i.e. the identification of improvement opportunities and the implementation of a formal improvement process. This is done through a six-step process called PRAISE, for short.

COST ACCOUNTING STANDARD 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".

1. 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.

2. 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.

3. 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.

4. 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.

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

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.

INTRODUCTION TO LEAN SYSTEM

Lean is a systematic approach to reduce or eliminate activities that don't add value to the process. It emphasizes removing wasteful steps in a process and taking the only value added steps. The Lean method ensures high quality and customer satisfaction. A Lean system describes a business or business unit that holistically applies Lean principles to the way it plans, prioritizes, manages, and measures work. The goal for any Lean system is to maximize customer value. While Lean thinking can greatly improve the productivity and function of a team or department, Lean implementations that spread across the entire organization have the greatest impact on the customer.

Lean systems use a Lean approach to identify and eliminate waste. They systematically discover and act upon opportunities to improve. These are two of the fundamental concepts of Lean: Eliminate anything that does not add value to the customer, and work systematically and continuously to create more value for the customer.

It helps in

- reducing process cycle time,
- improving product or service delivery time,
- reducing or eliminating the chance of defect generation,
- reducing the inventory levels and
- Optimizing resources for key improvements among others.

It is a never-ending approach to waste removal, thus promotes a continuous chain of improvements.

What is “Value”?

Let’s understand what is "Value” in above definition on Lean:

Depending on the type of business process & industry context, the customer defines “value”. “Value” is related to customer’s perception of product(s) or service(s), which he or she is willing to pay for.

A process is set of activities, which converts inputs into outputs using resources. In a process, these activities can be classified into three types. They are:

- Non- Value-added activity: These activities do not add any value to the processor products. They form the wasteful steps. A customer doesn’t pay for the costs associated with these activities willingly. Rather, if present excessively they result in customer dissatisfaction.
- Value-added activity: These activities add value to the process and are essential. They improve processes for productivity and quality.

- Enabling value-added activity: These activities do not add value to a customer. They are necessary for continuity of a process.

In any process, almost 80 – 85% activities are non-value adding activities. The aim of LEAN approach is to identify them in the process. And use specific lean tools to eliminate or reduce them. Thus, Lean improves process efficiency.

Benefits of a Lean System

When an organization holistically applies these Lean principles, it is able to function in a healthier, smarter, more sustainable way. This directly results in business value.

When the organization wins, the people within it win too. Members of Lean systems are not only more productive, but often more fulfilled and less stressed too. Here are the top ten benefits Lean practitioners report:

- Manage team / process complexity
- More efficient business processes
- Better management of changing priorities
- Better project visibility at the team level
- Increased team productivity
- Reduced lead time
- Increased team morale
- Improved visibility to stakeholders
- Reduced costs
- Predictable delivery of customer value

JUST-IN-TIME INVENTORY (JIT)

In manufacturing, speed to market and costs of production can make or break a company. Just in time (JIT) manufacturing is a workflow methodology aimed at

reducing flow times within production systems, as well as response times from suppliers and to customers.

JIT manufacturing helps organizations control variability in their processes, allowing them to increase productivity while lowering costs. JIT manufacturing is very similar to Lean manufacturing, and the terms are often used synonymously.

What is Just in Time?

Just in Time (JIT), as the name suggests, is a management philosophy that calls for the production of what the customer wants, when they want it, in the quantities requested, where they want it, without it being delayed in inventory.

So instead of building large stocks of what you think the customer might want you only make exactly what the customer actually asks for when they ask for it. This allows you to concentrate your resources on only fulfilling what you are going to be paid for rather than building for stock.

Within a Just in Time manufacturing system, each process will only produce what the next process in sequence is calling for.

The Origins and History of JIT

JIT is generally accepted as being a concept invented by Taiichi Ohno of Toyota; after World War2 resources were very scarce in Japan so using them to create something that the customer did not actually want right now was not a good idea.

On a visit to the US the management team of Toyota were inspired by, of all things, how they saw a super market (Piggly Wiggly) handle their inventory. Only what was removed from the shelves by the customers was actually replenished and ordered from suppliers. In this way shelves never became empty, nor did they end up overflowing with excessive inventory.

Taiichi Ohno was tasked by Eiji Toyoda to make production more efficient through implementing these ideas and pull production with just in time concepts was developed. It took more than 15 years for Toyota to perfect their ideas and it was not introduced into western manufacturing until the end of the 1970's.

How does JIT differ from traditional manufacturing?

In traditional manufacturing we try to predict what the customer will want and we will create a forecast (or guess) against which we will produce our products. We will also try to produce those products in large batches as the belief is that will make machines and processes more efficient, especially if those machines require a long time to setup. This will typically result in long lead times through our processes, huge amounts of Work In Process (WIP) stocks and also large quantities of finished goods stocks that have not yet been ordered by our customers. This is what many now call "Just in Case" manufacturing.

If the customer does order something that is not in our current stocks they will either have to wait many weeks or even months for the product to be manufactured or work will be hurried through the system by progress chasers causing a huge amount of disruption to the production schedule.

These systems are often run by Manufacturing Resource Planning (MRP2) programs that will try to schedule each and every process within the facility. These software packages will seek to control every step and everything requires careful and often complex planning.

A Just in Time system on the other hand will seek to use simple visual tools known as Kanbans to pull production through the processes according to what the customer actually takes. It massively reduces the amount of stock held and will reduce lead times by a significant amount, often from weeks to just a few hours or days.

With a JIT system each process pulls from the preceding process' "supermarket" and that process will then work to replenish those shelves.

Benefits of JIT Inventory Management

Reduce Wastage

The JIT inventory management model eliminates excess inventory and overstocking. You can have low inventory levels, significantly reducing the risk of inventory going unsold and sitting unused in the warehouse. You can also minimize the losses incurred due to defective products by easily identifying and addressing defective inventory items when production volumes are low.

Improve Efficiencies

The JIT model reduces the costs of procuring, managing and storing excess raw materials and inventory. This results in a higher inventory turnover which in turn prevents inventory from sitting in your warehouse for too long and becoming obsolete. You can also receive and store deliveries in the smallest possible quantities, virtually eliminating excess raw material inventories. Local sourcing ensures that your suppliers are located near your company's production facilities, enabling timely deliveries and reducing the need for safety stock.

Increase Productivity

JIT inventory management increases productivity by reducing the time and resources required for manufacturing. This ensures faster production and shorter production runs. You can also implement product changes quickly as there is less raw material stock. Product damage is also reduced because of having lower inventory levels.

Optimize Production

JIT inventory management can eliminate bottlenecks and delays across the entire production cycle, by reducing product defects and automating processes. Shorter production cycles enable on-time deliveries and increase customer satisfaction. JIT production scheduling ensures that jobs are scheduled exactly when they are needed, meaning that your production runs start and end just in time for shipping.

Reduce Costs

As it requires very low inventory levels, JIT inventory reduces the working capital required for inventory purchases as well as storage costs. Your business can purchase raw material only when needed, so any available cash can be better utilized by the company. Labor costs are also lower as fewer factory workers are required in JIT manufacturing as compared to full-time production.

Improve Quality

JIT inventory management involves having fewer items moving on the shop floor at any given time. This allows your management to focus on optimizing processes and building high-quality products. High-quality products with fewer defects improve customer satisfaction and reduce wastage. In the JIT manufacturing model, suppliers guarantee quality, so the deliveries go directly to production and avoid any delays due to inspection.

KAIZEN COSTING

Kaizen costing is a manufacturing method that focuses on always making things better. And trying to spend less money doing it. It involves identifying and eliminating waste in the manufacturing process. Optimizing productivity and reducing costs to improve efficiency and increase profitability.

Kaizen costing and JIT involves the following processes as discussed below.

- Identify waste
- Improve efficiency
- Promote employee participation
- Achieve exceptional productivity and quality
- Limit expenses

Few important points related to Kaizen have been discussed below.

- To use Kaizen costing, it is important to take a systematic approach to cost reduction. This means examining each phase of the process to identify opportunities for cost-cutting. This is done by holding brainstorming sessions. With employees or using data analysis tools to gain insights.
- The success of Kaizen costing lies in involving all members of the organization. Employees are encouraged to identify areas for improvement and suggest optimizations. Management must be open to feedback and employee recommendations.
- Kaizen costing offers many benefits. Such as increased productivity, improved quality, and reduced costs. It also promotes a culture of continuous improvement and encourages employee participation.
- Kaizen costing is essential for manufacturers. Who wants to stay competitive in today's fast-paced business world. Organizations can maintain profitability. And achieve long-term success by continuously improving processes and reducing costs.

Principles of Kaizen Costing

The principles of Kaizen have been discussed below.

Sort: According to this principle, companies must categorize every item. Based on the necessity and label all unnecessary items red and sell or dump them.

Straighten: Organizations must organize the crucial items left. After removing the unnecessary items to simplify operations. And improve accessibility, visibility, and availability of all items and tools.

Shine: Shine means cleaning instruments and tools to create a good work environment.

Standardize: This principle connects other principles. Businesses must set usability, cleanliness, and item placement standards in daily operations.

Sustain: Organizations must communicate changes to employees. Promoting discipline and self-control to comply with standards.

FEATURES OF KAIZEN COSTING:

Features of kaizen costing have been explained in detail for better understanding of the topic.

Continuous improvement

The method aims to reduce waste across product design, production, and after-sales services.

Employee involvement

The identification and reduction of non-value-added activities rely on employee involvement and contribution.

Competitiveness

When we enhance the quality of our product and offer it at a lower price. It will provide a competitive edge over others.

Work commitment

All workers at any level will be dedicated to their work. Because they are aware of the company's goals that aim for progress.

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.

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 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.

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:

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Communication:

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

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

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.

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. There are various kaizen costing advantages and disadvantages. Let's look at them in detail.

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.

Example of Kaizen Costing

The process of kaizen costing involves continuous improvement through incremental changes in the production process, making it a cost-reduction strategy. Here are five kaizen costing examples.

Reducing Material Waste

Kaizen costing is a way to save money during production. By identifying and eliminating unnecessary things. Such as materials that are not needed to make the product. This can help the company use less material and reduce the cost of the product.

Improving Efficiency

Kaizen costing can identify and cut things that slow down the manufacturing process. Such as bottlenecks and delays. These things can end up costing the

company more money. By eliminating them, the company can work more efficiently and save money in the long run.

Streamlining Inventory

Kaizen costing is a method that can help businesses save money by reducing the extra inventory that they have to store and manage. Fewer inventories can help a company save money on storage space. And inventory management, making the company more efficient and profitable.

Standardizing Processes

Kaizen costing can help a company by making its work more organized. By creating standard procedures for everything. This can lead to better quality products or services, fewer errors, and more efficiency. By doing this, the company can save money by reducing mistakes and making everything work more smoothly.

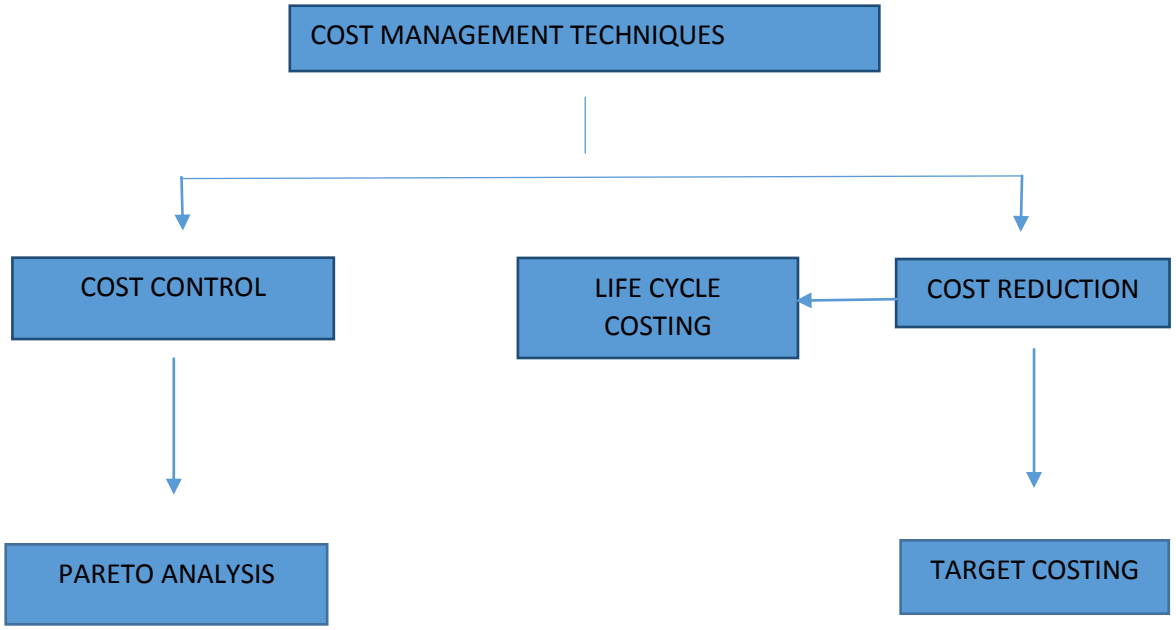
Employee Engagement

Kaizen costing process involves everyone in the company, including the employees. This is important because employees have specialized knowledge and expertise. That can help identify and implement cost-saving improvements. By doing this, the company can create a culture of continuous improvement. Where everyone is encouraged to contribute to the organization's success. This can help make the company more efficient. Save money, and ultimately become more successful.

UNIT –II

COST CONTROL AND COST REDUCTION

COST MANAGEMENT TECHNIQUE



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 these objective, firm needs 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.

COST CONTROL

Cost control refers to the process of monitoring and managing expenses within an organization to maintain financial stability and achieve profitability. This process involves identifying and analyzing various cost factors, such as operational expenses, production costs, and overheads, and implementing measures to reduce or optimize them.

It aims to strike a balance between minimizing costs without compromising the quality of products or services. By effectively controlling costs, businesses can enhance their competitiveness, improve operational efficiency, and generate higher profits, ultimately leading to long-term growth and success.

IMPORTANCE OF COST CONTROL:

Cost control is vital for organizations for multiple reasons. It helps maximize profitability by optimizing expenses, enabling businesses to generate higher profits and improve financial performance. What's more, it ensures financial stability, minimizing the risk of crises and cash flow problems.

It facilitates strategic decision-making by providing insights into cost drivers and spending patterns, enabling informed resource allocation and investment choices. In short, cost control is a strategic tool that balances financial stability, profitability, and growth, empowering organizations to thrive in a dynamic business environment.

FEATURES OF COST CONTROL:

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.

For example:

If current cost of producing a unit is Rs. 100 per unit, then under cost control attempt will be made to reduce the costs in such a manner that it does not go beyond Rs. 100. Organization will attempt to achieve this target. If it is found that actual cost comes at Rs. 120, it will find the deviation which is Rs. 20. Then attempt will be made to find the method to reduce the cost to Rs. 100 This is known as cost control.

BENEFITS OF COST CONTROL MANAGEMENT:

Cost control management offers numerous benefits to your organizations.

1. Cost savings

Effective cost control management helps identify areas of excessive spending, inefficiencies, and waste. By implementing cost-saving measures, businesses can reduce expenses, optimize resource allocation, and improve their financial position.

2. Improved profitability

By reducing costs and increasing efficiency, cost control management directly contributes to improved profitability. It enables businesses to generate higher revenues, enhance profit margins, and achieve sustainable financial growth.

3. Enhanced cash flow

Proper cost control management ensures that cash flow remains healthy and stable. By minimizing unnecessary expenses and managing payment cycles effectively, organizations can maintain a steady flow of funds, meet financial obligations, and invest in growth initiatives.

4. Competitive advantage

Cost control management allows organizations to offer competitive prices while maintaining the highest level of quality. This pricing strategy helps attract customers, retain market share, and gain an edge over competitors in the marketplace.

5. Resource optimization

It helps ensure that resources, including materials, labor, and equipment, are utilized efficiently, eliminating any instances of underutilization or excess capacity.

6. Strategic decision-making

Cost control management provides decision makers with valuable insights and data that helps immensely in the strategic decision-making processes. With accurate cost information, organizations can make informed choices regarding pricing strategies, product development, market expansion, and investment decisions.

7. Operational efficiency

Effective cost control management streamlines processes and improves overall operational efficiency. What's more, it helps identify bottlenecks, implement process improvements, and optimize workflow, resulting in higher productivity and smoother operations.

8. Risk management

Organizations can mitigate financial risks by actively monitoring and controlling costs. It helps identify potential cost overruns, budget deviations, or unforeseen expenses, allowing proactive measures to be taken to prevent or minimize such risks.

9. Improved financial stability

It's no secret that maintaining a strong financial position is vital for business sustainability. Cost control management helps in financial stability by reducing unnecessary expenses, avoiding inessential debt, and enabling organizations to weather economic uncertainties or market fluctuations.

10. Long-term growth

By optimizing costs and improving profitability, cost control management frees up financial resources that can be reinvested in growth initiatives. This capital can be utilized for research and development, marketing campaigns, talent

acquisition, technological advancements, or market expansion, fostering long-term growth and success.

COMPONENTS OF COST CONTROL

Here are some of the key components of cost control:

1. Budgeting and planning

An effective cost control process begins with creating an expertly done budgeting process that outlines the expenses that can occur and the projection of revenues for that time period. On the other hand, planning makes sure the financial resources are allocated strategically and align with the organization's business goals.

2. Cost analysis

Cost analysis involves examining the various cost components within an organization. It includes identifying direct and indirect costs, analyzing cost drivers, and understanding the factors that contribute to expenses. This analysis helps in identifying areas where costs can be minimized or optimized.

3. Expense tracking

Tracking and monitoring expenses play a vital role in controlling cost. Organizations must keenly track the expenses and compare it with the budget planned. What's more, by tracking expenses in real-time, organizations can identify any deviations, take corrective measures promptly, and ensure that costs remain within a decided limit.

COST CONTROL TECHNIQUES AND METHODS

Here are some the widely used techniques and methods:

1. Cost reduction

This involves identifying and implementing measures to minimize expenses without compromising product or service quality. For effective cost reduction organizations can renegotiate supplier contracts, optimize operational processes, and improve efficiency.

2. Cost accounting

It is the process of focusing on tracking and analyzing the costs associated with producing goods or services. Cost accounting can help organizations understand the cost structure, allocate expenses accurately, and make informed decisions regarding pricing, resource allocation, and project cost control strategies.

3. Budget

In organizations the budget is a financial plan that outlines projected revenues and expenses over a specific period. It serves as a benchmark for cost control efforts by setting limits and targets for various cost categories. Monitoring actual expenses against the budget allows organizations to identify deviations and take corrective actions. This in turn will help your company's baseline.

4. Standard cost accounting

Standard cost accounting sets predetermined standard costs for materials, labor, and overhead. In this process actual costs are compared with the standard costs, enabling organizations to identify and address cost variances. This technique helps in measuring cost performance and improving cost control measures.

5. Earned value management

Earned Value Management (EVM) is a project management technique that integrates cost, schedule, and performance data. It helps in tracking the value of work completed in relation to the planned budget and schedule. EVM helps organizations to monitor project costs effectively, assess performance, and take corrective actions.

6. Analysis of variance

Analysis of variance (ANOVA) is a statistical technique that is used to analyze and understand the differences between planned and actual costs. ANOVA helps in identifying the causes of cost variances, such as changes in material prices or production inefficiencies.

7. Budgetary control

Budgetary control involves monitoring and controlling expenses based on the approved budget. qIt includes periodic reviews, tracking actual expenses and actual expenditures, comparing them with budgeted amounts, and implementing corrective actions when necessary. Budgetary control helps organizations maintain financial discipline and ensures effective cost control.

8. Outsourcing

It is the process of delegating specific tasks or functions to external vendors or service providers. Outsourcing can help organizations reduce costs and decarese operational expenses.

9. Continual improvement process (CIP)

It is the systematic approach to drive ongoing enhancements in cost control. This involves identifying areas for improvement, setting goals, implementing changes, and measuring the impact of those changes.

By employing these cost control techniques and methods, organizations can proactively manage expenses, optimize resource allocation, and drive financial efficiency and stability.

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

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.

Examples

Some common cost reduction examples are:

- Reducing labour costs by automating routine tasks or by outsourcing non-core business functions.

- Bringing down office expenses, such as electricity bills, by opting for energy-saving technologies or scaling down on office space by offering remote working options.
- Negotiating better terms with suppliers to source material at lower costs or be offered higher trade discounts.

FEATURES OF COST REDUCTION

Cost control has following features:

i) Cost reduction is genuine cost reduction which can be implemented by lowering the cost of production.

ii) 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.

iii) Cost reduction doesn't decline the quality of production. It remains the same.

iv) Unit cost is reduced either by decreasing the expenditure at a given level of output.

v) 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

ADVANTAGES OF COST REDUCTION

i) Cost reduction increases the profitability of an organization.

ii) Cost reduction enhances the cash flow of the company.

iii) Cost reduction program helps in achieving the goals of the company.

iv) It is permanent in nature which affects the organizational performance in the long run.

v) Cost reduction does not impair the quality of the production while reducing the cost.

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.

COST REDUCTION: PROCESS

A cost reduction process varies significantly based on the achievable targets and corresponding strategies. However, it commonly entails the steps outlined below.

Determine the scope for cost reduction: A cost reduction process starts by analysing the existing cost structure of your firm. These costs are then compared against pre-established benchmarks or industry standards to identify areas for cost reduction. In the case of multiple opportunities, it is best to undertake a spending analysis and prioritize those yielding the greatest benefit.

Create a cost reduction programme: After ascertaining problem areas, firms must carry out a detailed analysis by employing various quantitative and qualitative techniques. The aim is to decide on the most suitable cost reduction techniques and their possible impact. Some preliminary testing of these techniques may also be carried out at this stage.

Plan for implementation: After designing a cost reduction programme, it's time to bring all business executives, key management personnel, contractors, and employees on board to create the plan of action. This is to ensure there is a clear demarcation and delineation of roles, and that everyone remains on top of the details to minimize any lapses.

Put the programme into action: Finally, deploy the cost reduction programme by establishing a governance structure and control deadlines. Continuously monitor the progress and optimize the strategies further based on the results.

COST REDUCTION TECHNIQUES

Firms can bring about cost reduction in myriad ways. Some of the popular cost reduction techniques include

Budgetary control: Companies can compare their actual costs incurred against the budgeted numbers and take remedial actions in case of discrepancies and unnecessary costs, achieving better cost efficiency.

Simplification: The role of efficiency and cost reduction comes into play when firms reduce the diversity of their product offerings and scale the remaining products. It helps streamline business operations, raise cost efficiency, and reduce costs.

Standard costing: In this cost reduction technique, enterprises carry out a variance analysis to bring out the differences between standard estimated costs and actual costs. Consequently, they can track the areas exhibiting high-cost variances and the possible reasons for them.

Value analysis: Also called value engineering, a value analysis entails a systematic review of product design and production processes with an emphasis on reducing total production costs without compromising product quality or functionality.

Design improvement: By improving product designs, companies can improve production processes, enhance product performance, and generate cost savings.

This list is by no means exhaustive. Techniques like contribution analysis, job evaluation, material control, market research, finance control, cost-benefit analysis, and labour and overhead control can also be utilised for cost reduction.

DIFFERENCE BETWEEN COST CONTROL AND COST REDUCTION:

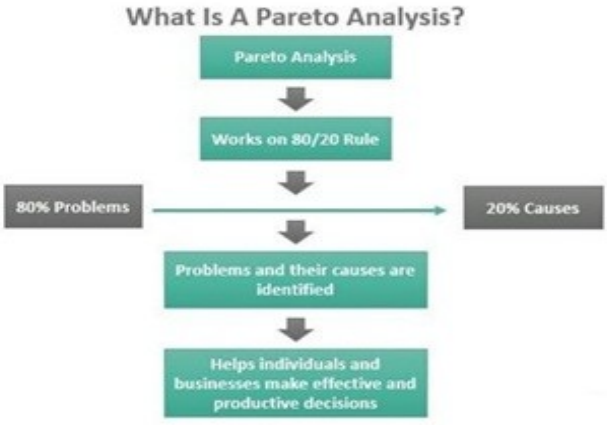
ASPECT	COST CONTROL	COST REDUCTION
Objective	Maintain costs within predefined limits	Minimize overall expenses to enhance profitability
Focus	Monitoring and regulating expenses	Proactive optimization of costs
Approach	Preventive function, corrective measures	Continuous improvement, strategic initiatives
Timeframe	Ongoing process within budgetary constraints	Long-term, sustainable cost savings
Scope	Manage costs across different areas of the organization	Identify opportunities for cost optimization
Emphasis	Stability and financial discipline	Profitability and gaining a competitive edge
Techniques	Budgeting, standards, variance analysis	Competitive analysis, product design optimization
Key Benefit	Maintains financial control and stability	Enhances profitability and competitiveness
Examples	Implementing budgetary controls, preventive measures	Redesigning products, streamlining processes

PARETO ANALYSIS

Pareto analysis is a technique used for business decision-making, but it also has applications in several different fields from welfare economics to quality control. It is based largely on the "80-20 rule." As a decision-making technique, Pareto analysis statistically separates a limited number of input factors—either desirable or undesirable—which have the greatest impact on an outcome.

Pareto analysis is premised on the idea that 80% of a project's benefit can be achieved by doing 20% of the work—or, conversely, 80% of problems can be traced to 20% of the causes. Pareto analysis is a powerful quality and

decision-making tool. In the most general sense, it is a technique for getting the necessary facts needed for setting priorities.



What Is the Importance of Pareto Analysis?

Pareto analysis enables an entity to be more efficient with its resources. By quickly identifying a major issue or capitalizing on a major business success, the company can spend less time and resources focusing on less impactful aspects of the company.

The Pareto principle is a helpful rule of thumb when trying to optimize the allocation of resources. The correct distribution of resources can make a significant difference in the efficiency and profitability of a business.

For example, think about if a new CEO is hired to boost client retention for a small business. If 80% of the reason their clients are leaving is caused by 20% of the possible problems, it would be a no-brainer to focus on the first 20%.

The 80/20 rule is a great decision-making tool to help optimize resource allocation for a business. It helps organize the thought process and make much more educated decisions.

The rule also plays into the law of diminishing marginal return/benefit. Keeping all else equal, when the consumption of inputs increases, the marginal benefit of each additional output will decrease.

STEPS TO CREATE A PARETO DIAGRAM (80/20 RULE DIAGRAM)

1. Identify a list of problems

Ideally, the list is gathered through feedback from employees, clients, or customers. Common examples include anonymous complaint/feedback forms, customer surveys, or employee organizational recommendations.

2. Identify the cause of each problem

Why did the problem occur? Make sure to think about the root cause, which might be hidden under the surface.

3. Score each problem

Assign a number to each problem based on the negative impact associated with it. The scoring system will depend on the type of problem trying to be solved. For example, for a cellular company, did a customer complaint make them leave the carrier, change their plan (negatively), or not change anything?

4. Group the problems together

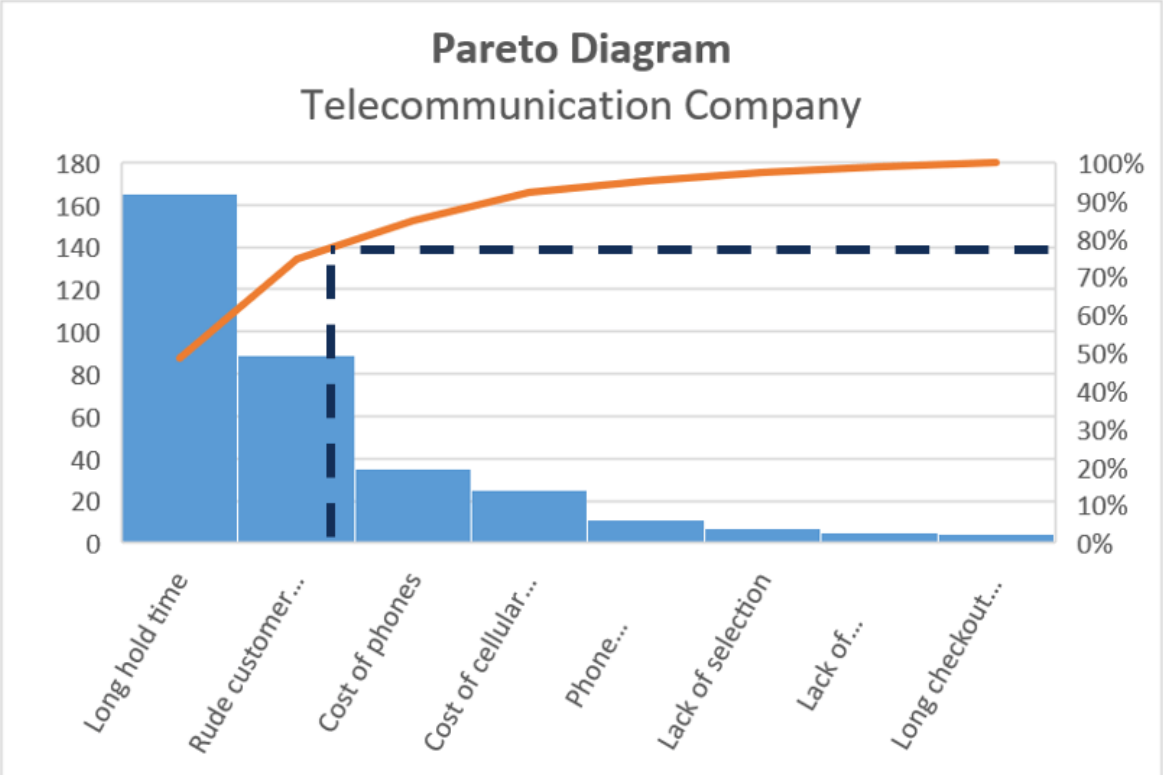
Group all of the similar problems together and calculate the collective scores. The problem with the highest score will most likely be the one you should try to resolve first and provide the highest return. Recommended to create a Pareto graph, as seen below, to help visualize the data.

Pareto Diagram Example

The following example comes from a cellular telephone service provider. The data is collected from customer review forms that were submitted following their choice to leave the cellular carrier. The company decides to perform a Pareto analysis on the data to try and figure out what they should focus on first to improve their offering.

Customer Reasoning to Leave	
Long hold time	165
Rude customer service	89
Cost of phones	35
Cost of cellular plans	25
Phone malfuntion	11
Long checkout times	4
Lack of accessories	5
Lack of selection	7
Total	**314**

As you can see, the majority of complaints (about 80%) stem from either long hold times or rude customer service. The 80% can be seen in the graph below highlighted by the dotted line.



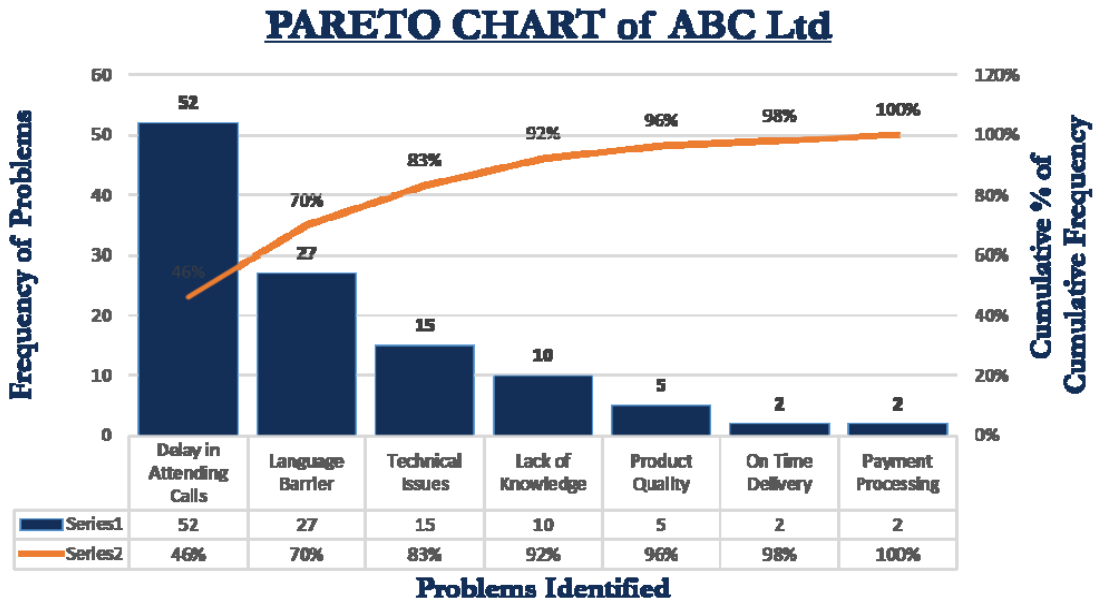
From a business strategy perspective, those two problems should be addressed first to achieve maximum impact. Judging by the comments, we can assume that hiring more staff and/or training them better would be the best course of action.

Pareto Charts Example

Pareto charts indicate the frequency of problems and the cumulative impact of the problems on the organization. To draw a Pareto chart, a mixed chart is used -A bar chart and a line graph.

The Y-axis of the Pareto Chart indicates the 'frequency of the identified problems, and the X-axis represents the problems or issues. For example, Customer servicing is an issue, and the frequency of the occurrence of the problem is 25. The bars are in descending order; that is, the problem with the highest frequency is first, and so on.

The line graph on the charts shows the percentage of cumulative frequency of the issues. For example, if two issues together have a cumulative frequency of 68%, then these are the major defects affecting or spoiling the operations of an organization. Hence, working out a solution for these issues will help mitigate the issues to a large extent.



APPLICATIONS:

Pareto Analysis is generally applicable to various situations of business or organization. Some of them are given below –

Pricing of Product:

In any business, Cost-Volume-Profit (CVP) relationship of product is very important. It is simply an analysis that shows relationship among factors like cost, volume of sales, and their impact on the amount of profit. But there are some cases where an organization has to deal with more than one product.

In such cases, it is very difficult to analyze and determine CVP relationship for all products. It is very difficult to determine which product is essential for company's growth and survival because only 20% of products may account for 80% of total sales revenue. It is difficult for management team to take decision regarding pricing also.

Therefore, in such cases, Pareto Analysis is used. Pareto Analysis helps management team to concentrate more on pricing decisions of products (approx. 20%) that are essential for growth and survival of the organization.

2. Customer Profitability Analysis:

In business, the customer role is also important. Therefore, each organization or business or company analyze customer relationship in specific period of time. Customer Profitability (CP) to an organization is analyzed rather than analyzing products.

CP basically means profit gained by organization or business from serving or giving product to customer or group of customers over given period of time. Profit is analyzed by difference in revenues earned and costs that are associated with customer relationships in specific time period. There are some customers that are more profitable and some are less profitable.

It is very difficult to determine which customer or customer groups are essential for company's growth and survival because only 20% of customers may account for 80% of profit. It is difficult for the management team to take decision regarding profit also. Therefore, in such cases, Pareto Analysis is used.

Pareto Analysis helps management team to analyze profits gained from different customers of customer groups and then make decision whether or not customer is profitable or not. They decide whether or not serving should be continued to same customer or customer group.

3. 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.

4. Application in Activity Based Costing

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

5. 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.

TARGET COSTING

Target costing is a system under which a company plans in advance for the price points, product costs, and margins that it wants to achieve for a new product. Target costing is not just a method of costing, but rather a management technique wherein prices are determined by market conditions, taking into account several factors, such as homogeneous products, level of competition, no/low switching costs for the end customer, etc. When these factors come into the picture, management wants to control the costs, as they have little or no control over the selling price.

According to Computer Aided Manufacturing International (CAM-I) "A market-based cost that is calculated using sales price necessary to capture a predetermined market share is known as Target Cost." In competitive industries, a unit selling price is set independent of initial cost of the product. If target cost is lower than the initial forecast of product cost, the manufacture/producer drives the unit cost to come down over a definite period, so that it should compete. It should be noted that target cost is found by deducting desired profit from predetermined sales price.

Hence, Target Costing = Selling Price – Desired Profit

Here, sales price is one which is appropriate for a targeted market share. Desired profit is the contribution that the product is expected to make towards the enterprise's business sustaining costs. The residual is target cost. Thus, target costing takes full advantage of the equation

Profit = Sales – Costs.

Example: ABC Inc. is a big FMCG player that operates in a very competitive market. It sells packaged food to end customers. ABC can only charge Rs20 per unit. If the company's intended profit margin is 10% on the selling price, calculate the target cost per unit.

Solution: Target Profit Margin = 10% of 20 = Rs2 per unit

Target Cost = Selling Price – Profit Margin (Rs20 – Rs2)

Target Cost = Rs18 per unit

FEATURES OF TARGET COSTING

The main features of target costing are as follows-

- The price of the product is determined by market conditions. The company is a price taker rather than a price maker.
- The minimum required profit margin is already included in the target selling price.
- It is part of management's strategy to focus on cost reduction and effective cost management.
- Product design, specifications, and customer expectations are already built-in while formulating the total selling price.
- The difference between the current cost and the target cost is the "cost reduction," which management wants to achieve.
- A team is formed to integrate activities such as designing, purchasing, manufacturing, marketing, etc., to find and achieve the target cost.

OBJECTIVES OF TARGET COSTING

The fundamental objective of target costing is to enable management to use proactive cost planning, cost management and cost reduction practices whereby, costs are planned and managed out of a product and business, early in the design and development cycle, rather to a during the later stages of product development and production. Broadly speaking, a target costing system has three objectives:

1. To lower the costs of new products so that the required profit level can be ensured.

2. The new products meet the levels of quality, delivery timing and price required by the market.

3. To motivate all company employees to achieve the target profit during new product development by making target costing a companywide profit management activity.

PROCESS OF TARGET COSTING

1. Conducting Market Research: The Company should determine the customer wants precisely through conducting marketing research. A new product can be designed or make changes in the existing product on the basis of the customers' expectations and perceptions.

2. Identify the Nature of Market: The market information can be collected in such a way that what type of products are available in the market, the level of competition prevailing, the number of competitors and the price at which the existing products are available. Besides, the company should find out the affordable price of the customers. If so, the target costing is followed.

3. Translation of Customers Requirements into Product Features: The preference of one customer differs from another. These preferences are

collectively called as customers requirements. Now, the bundle of preferences are bringing into a tangible thing i.e. product.

4. Development of a Product Design: By considering the engineering analysis of market forces, customer needs, relevant technology, competitors models, product configuration and performance features, design alternatives, process capabilities, maintenance and service requirements etc., a suitable product design is to be determined by the company. Such a product design assures a targeted profit and target cost for each component in total.

5. Determine the Price, Margin and Cost: Target selling price is determined on the basis of market survey, at which the product can be sold. The standard margin is also included in the target selling price. If so, it is possible to determine the target cost

Target Cost = Target Selling Price – Target Profit

6. Conducting Value Engineering Process: The Company can conduct value engineering process to reach target cost. It is a well-known fact that the difference between target selling price and the target profit is target cost. The target selling price cannot be changed at any cost; hence, it is a duty on the part of company is that takes necessary steps to reach the target cost.

7. Improve the Design to Reach Target Cost: The Company starts a minor trial production. Such a production ensures all product performances, target cost and target profit margin also. The trial production comes to an end whenever the product design matches the target cost.

8. Approval of Top Management: A detail report is presented before the top management for getting approval. The report contains the production process, elements of cost involved with the level of costs to be incurred and design of the

specified product. A formal approval is given for starting commercial production.

9. Maintenance of Accounts: A separate accounting records are to be maintained for each product design. It is possible to verify whether the total expenses exceed the target cost. If the expenses are not controllable at any time, the product design will be changed. Hence, the maintenance of separate set of books are highly required under target costing process.

10. Implement the Target Costing: The Company can get the information regarding the expenses incurred for each design separately. A continuous watching is essential to bring the total cost within the target cost.

ADVANTAGES OF TARGET COSTING

The main advantages of target costing are discussed below.

1. It ensures proper planning of production schedule and even marketing also.

2. The company can win in the competition from the marketing world.

3. The customers can get quality products by fulfilling their requirements at affordable cost.

4. There is a commitment on the part of employees from top to bottom for quality production.

5. There is a possibility of product innovation to achieve some competitive advantages.

6. It uses management control system to support and reinforce manufacturing strategies.

7. It integrates the activities of supplier with the customers' requirements to design the right product.

8. It helps to find the market opportunities. Such market opportunities are used to fix the possible target selling price at the maximum.

9. The cost of features of a product is based on the customers' willingness to pay for them.

10. It reduces the period of product development cycle.

11. It reduces the costs of products significantly.

12. The spirit of team work starts from the stage of conceiving the product idea and ends with distribution of products among the customers and passes through planning, developing, manufacturing and selling.

PRINCIPLES OF TARGET COSTING:

According to Hilton, target costing involves seven key principles listed as follows:

1. Price-Led Costing:

Target costing sets the target cost by first determining the price at which a product can be sold in the marketplace. Subtracting the target profit margin from this target price yields the target cost, that is, the cost at which the product must be manufactured. Notice that in a target costing approach, the price is set first, and then the target product cost is determined. This is opposite from the order in which the product cost and selling price are determined under traditional cost-plus pricing.

2. Focus on the Customer:

To be successful at target costing, management must listen to the company's customers. What products do they want? What features are important? How much are they willing to pay for a certain level of product quality? Management needs to aggressively seek customer feedback, and then products must be

designed to satisfy customer demand and be sold at a price they are willing to pay. In short, the target costing approach is market driven.

3. Focus on Product Design: Design engineering is a key element in target costing. Engineers must design a product from the ground up so that it can be produced at its target cost. This design activity includes specifying the raw materials and components to be used as well as the labour, machinery, and other elements of the production process. In short, a product must be designed for manufacturability.

4. Focus on Process Design: Every aspect of the production process must be examined to make sure that the product is produced as efficiently as possible. The use of touch labour, technology, global sourcing in procurement and every aspect of the production process must be designed with the product's target cost in mind.

5. Cross-Functional Teams: Manufacturing a product at or below its target cost requires the involvement of people from many different functions in an organisation: market research, sales, design engineering, procurement, production engineering, production scheduling, material handling and cost management. Individuals from all these diverse areas of expertise can make key contributions to the target costing process. Moreover, a cross-functional team is not a set of specialists who contribute their expertise and then leave; they are responsible for the entire product.

6. Life-Cycle Costs: In specifying a product's target cost, analysts must be careful to incorporate all of the product's life-cycle costs. These include the costs of product planning and concept design, preliminary design, detailed design and testing, production, distribution and customer service. Traditional cost-accounting systems have tended to focus only on the production phase and have not paid enough attention to the product's other life-cycle costs.

7. Value-Chain Orientation: Sometimes the projected cost of a new product is above the target cost. Then efforts are made to eliminate non-value-added costs to bring the projected cost down. In some cases, a close look at the company's entire value chain can help managers identify opportunities for cost reduction.

LIFE CYCLE COSTING

Life cycle costing, or whole-life costing, is the process of estimating how much money you will spend on an asset over the course of its useful life. Whole-life costing covers an asset's costs from the time you purchase it to the time you get rid of it.

Buying an asset is a cost commitment that extends beyond its price tag. For example, think of a car. The car's price tag is only part of the car's overall life cycle cost. You also need to consider expenses for car insurance, interest, gas, oil changes, and any other necessary maintenance to keep the car running. Not planning for these additional costs can set you back.

The cost to buy, use, and maintain a business asset adds up. Whether you're purchasing a car, a copier, a computer, or inventory, you should consider and budget for the asset's future costs.

PRODUCT LIFE CYCLE STRATEGIES

The product life cycle contains four distinct stages: introduction, growth, maturity and decline. Each stage is associated with changes in the product's marketing position. You can use various marketing strategies in each stage to try to prolong the life cycle of your products.

Product introduction strategies

Marketing strategies used in the introduction stages include:

- rapid skimming - launching the product at a high price and high promotional level
- slow skimming - launching the product at a high price and low promotional level
- rapid penetration - launching the product at a low price with significant promotion
- slow penetration - launching the product at a low price and minimal promotion

During the introduction stage, you should aim to:

- establish a clear brand identity
- connect with the right partners to promote your product
- set up consumer tests, or provide samples or trials to key target markets
- price the product or service as high as you believe you can sell it, and to reflect the quality level you are providing.

Product growth strategies

Marketing strategies used in the growth stage mainly aim to increase profits. Some of the common strategies to try are:

- improving product quality
- adding new product features or support services to grow your market share
- entering new markets segments
- keeping pricing as high as is reasonable to keep demand and profits high
- increasing distribution channels to cope with growing demand
- shifting marketing messages from product awareness to product preference
- skimming product prices if your profits are too low

- The growth stage is when you should see rapidly rising sales, profits and your market share. Your strategies should seek to maximise these opportunities.

Product maturity strategies

When your sales peak, your product will enter the maturity stage. This often means that your market will be saturated and you may find that you need to change your marketing tactics to prolong the life cycle of your product. Common strategies that can help during this stage fall under one of two categories:

market modification - this includes entering new market segments, redefining target markets, winning over competitor's customers, converting non-users

Product modification - for example, adjusting or improving your product's features, quality, pricing and differentiating it from other products in the marking

Product decline strategies

During the end stages of your product, you will see declining sales and profits. This can be caused by changes in consumer preferences, technological advances and alternatives on the market. At this stage, you will have to decide what strategies to take. If you want to save money, you can:

- reduce your promotional expenditure on the products
- reduce the number of distribution outlets that sell them
- implement price cuts to get the customers to buy the product
- find another use for the product
- maintain the product and wait for competitors to withdraw from the market first
- harvest the product or service before discontinuing it

Another option is for your business to discontinue the product from your offering. You may choose to:

- sell the brand to another business
- significantly reduce the price to get rid of all the inventory

Many businesses find that the best strategy is to modify their product in the maturity stage to avoid entering the decline stage. Find out more about product life cycle - decline stage or find best practices on product life cycle management.

BENEFITS OF PRODUCT LIFE CYCLES

You can benefit from a product life cycle in the following ways:

Strategic planning: It helps in strategic planning, as companies can expect growth and make long-term plans on investments, product development, resource allocation and marketing. Depending on which stage the product is in, you can plan efficiently, like increasing investment and marketing when a product is in the growth stage.

Sales forecasting: Product life cycle promotes easy sales forecasting. You can know the progression of a product and the sales it will achieve through the product life cycle from experience.

Learning from previous product life cycles: It improves processes, since companies can develop better strategies and avoid common pitfalls by learning from similar products' earlier cycles. You can determine the product stage and plan mitigation measures to ensure success.

Competitive advantage: The product life cycle helps companies analyse markets and set strategies ahead of competitors. They can gain insight into their competitors' product stage by examining their sales data and taking measures to stay competitive, such as increasing advertising or creating new products.

Target marketing and positioning: The product life cycle enables companies to establish a brand image and target the right audience. It can also provide insight into which markets to venture into and stay competitive.

Product end: Using the product life cycle lets managers determine when to discontinue and introduce new products, especially when they decline and fall below market average. The cost of investing in marketing may become too high compared to returns.

LEARNING CURVE

A learning curve is a mathematical concept that graphically depicts how a process is improved over time due to learning and increased proficiency. The learning curve theory is that tasks will require less time and resources the more they are performed because of proficiencies gained as the process is learned. The learning curve was first described by psychologist Hermann Ebbinghaus in 1885 and is used as a way to measure production efficiency and to forecast costs.

A learning curve is typically described with a percentage that identifies the rate of improvement. In the visual representation of a learning curve, a steeper slope indicates initial learning that translates into higher cost savings, and subsequent learnings result in increasingly slower, more difficult cost savings.

LEARNING CURVE RATIO

As the production quantity of a given item is doubled, the cost of the item decreases at a fixed rate. This phenomenon is the basic premise on which the theory of learning curve has been formulated. As the quantity produced doubles, the absolute amount of cost increase will be successively smaller but the rate of decrease will remain fixed.

In the initial stage of a new product or a new process, the learning effect pattern is so regular that the rate of decline established at the outset can be used to predict labour cost well in advance. The effect of experience on cost is summarized in the learning curve ratio or improvement ratio.

$$\text{LEARNING CURVE RATIO} = \frac{\text{Average Labour cost of first 2N units}}{\text{Average Labour cost of first N units}}$$

For example, if the average labour cost for the first 500 units is Rs.25 and the average labour cost for the first 1,000 units is Rs. 20, the learning curve ratio is (Rs.20/ Rs.25) or 80%. Since the average cost Rs. per unit of 1,000 units is Rs.20, the average cost per unit of first 2,000 units is likely to be 80% of Rs.20 or Rs.16.

Main applications of Learning Curve.

Knowledge of learning curve can be useful both in planning and control. Standard cost for new operations should be revised frequently to reflect the anticipated learning pattern. The main applications are summarized below:

- Helps to analyze CVP relationship during familiarization phase: Learning curve is useful to analyze cost-volume-profit relationship during familiarization phase of product or process and thus it is very useful for cost estimates. Learning curve can be used as a tool for forecasting.
- Helps in budgeting and profit planning: Budget manager should select those costs which reflect learning effect and then he should be able to incorporate this effect in process of developing budgets or in the exercises relating to project planning.
- Helps in pricing: The use of cost data adjusted for learning effect helps in development of advantageous pricing policy.

- Design makers: It helps design engineers in making decisions based upon expected (predictable from past experience) rates of improvement.
- Helps in negotiations: It is very useful to Government in negotiations about the contracts.
- Helps in setting standards: The learning curve is quite helpful in setting standards in learning phase.

Unit – III

Activity-Based Cost Management (ABCM)

Activity-Based Cost Management (ABCM) is a concept within managerial accounting that aims to provide a more accurate and detailed understanding of how costs are incurred within an organization. Traditional cost accounting methods often rely on simple allocation methods, such as direct labour hours or machine hours, to assign overhead costs to products or services. However, these methods may not reflect the actual consumption of resources by different activities, leading to distorted cost information.

The key concept of Activity-Based Cost Management involves breaking down an organization's operations into various activities and then allocating costs based on the consumption of resources by those activities.

Fundamental concepts associated with ABCM are follows:

1. **Activities:**
    - In ABCM, activities are the fundamental tasks or processes that an organization undertakes to produce goods or services. Activities can be categorized into different types, such as production activities, setup activities, distribution activities, and administrative activities.
2. **Cost Drivers:**
    - Cost drivers are the factors that cause costs to be incurred in performing activities. These can be various quantitative measures such as machine hours, number of setups, or orders processed, which directly relate to the consumption of resources.
3. **Resource Consumption:**
    - ABCM recognizes that different activities consume resources at different rates. By identifying the specific activities and the resources they consume, organizations can gain a more accurate

understanding of the true costs associated with their products or services.

4. **Cost Pools:**
    - Costs are grouped into cost pools based on the activities they support. This involves classifying costs according to the activities that drive those costs. For example, all costs associated with the setup activity might be grouped in a setup cost pool.
5. **Activity-Based Costing (ABC):**
    - ABC is a subset of ABCM and specifically refers to the process of allocating indirect costs to products or services based on the consumption of activities. It involves calculating activity rates, which represent the cost per unit of the cost driver for each activity.
6. **Product or Service Costing:**
    - Once activity rates are determined, costs can be assigned more accurately to products or services based on the actual consumption of activities. This results in a more precise understanding of the total cost of producing or delivering a specific product or service.
7. **Decision Support:**
    - ABCM provides managers with valuable information for decision-making. It helps in pricing decisions, product mix decisions, and resource allocation decisions by providing a clearer picture of the cost structure.
8. **Continuous Improvement:**
    - ABCM facilitates continuous improvement efforts by highlighting areas where processes can be streamlined, costs can be reduced, and efficiency can be improved.

While ABCM offers more accurate cost information, it can be complex and resource-intensive to implement. Organizations need to carefully assess the benefits against the costs of implementing and maintaining an activity-based

costing system. It is often most beneficial in industries with diverse products or services and complex cost structures.

Key steps in Activity-Based Cost Management

Activity-Based Cost Management (ABCM) is a managerial accounting approach that focuses on understanding and managing the costs of various activities within an organization. Traditional cost accounting methods often allocate costs based on arbitrary factors like direct labor hours or machine hours, which may not accurately reflect the actual consumption of resources by different activities.

ABCM, on the other hand, seeks to allocate costs based on the activities that drive those costs. The key steps in Activity-Based Cost Management include:

1. **Identifying Activities:**
    - Identify all the activities that take place within the organization. Activities can be classified into various categories such as production, setup, ordering, inspection, etc.
2. **Identifying Cost Drivers:**
    - Determine the factors that drive the costs associated with each activity. Cost drivers are the variables that have a direct impact on the cost of performing an activity.
3. **Assigning Costs to Activities:**
    - Allocate indirect costs to specific activities based on the identified cost drivers. This step involves linking costs to the activities that generate those costs.
4. **Calculating Activity Rates:**
    - Calculate the cost per unit of the cost driver for each activity. This involves dividing the total cost of the activity by the total quantity of the cost driver.

5. **Assigning Costs to Products or Services:**
    - Assign the costs of activities to the products or services that consume those activities. This provides a more accurate representation of the true cost of producing or delivering a product or service.
6. **Performance Measurement:**
    - Evaluate the performance of different activities and identify areas where improvements can be made. This can help in optimizing resource utilization and reducing costs.

The benefits of Activity-Based Cost Management include:

- **Improved Cost Accuracy:** ABCM provides a more accurate representation of costs by linking them directly to the activities that drive those costs.
- **Better Decision Making:** Managers can make more informed decisions about pricing, product mix, and resource allocation when they have a clearer understanding of the costs associated with different activities.
- **Process Improvement:** ABCM highlights areas where processes can be streamlined or improved, leading to increased efficiency and cost savings.
- **Resource Optimization:** By identifying and focusing on critical activities, organizations can optimize their use of resources and enhance overall performance.

However, it's important to note that implementing ABCM can be resource-intensive and may require a significant investment in time and technology. Additionally, organizations need to continually update and refine their activity-based costing systems to ensure accuracy and relevance.

Purpose of Activity-Based Cost Management

The purpose of Activity-Based Cost Management (ABCM) is to provide organizations with a more accurate and insightful understanding of their cost structures by linking costs to the specific activities that drive them. This approach serves several important purposes:

1. **Cost Accuracy:**
    - ABCM aims to improve the accuracy of cost assignments. Traditional costing methods often rely on broad allocations of overhead costs, which may not reflect the actual consumption of resources by different activities. ABCM provides a more granular and precise allocation of costs based on the specific activities that drive those costs.
2. **Product and Service Costing:**
    - ABCM helps in determining the true cost of producing or delivering a particular product or service. By assigning costs based on the activities that contribute to the production or delivery process, organizations can make more informed decisions about pricing, product mix, and profitability.
3. **Resource Optimization:**
    - By identifying and analyzing activities, organizations can optimize the use of resources. This involves understanding which activities are essential and contribute the most value to the organization and which may be non-value-added or can be streamlined for efficiency.
4. **Decision Support:**
    - ABCM provides managers with better information for decision-making. It helps in making informed decisions related to pricing strategies, product development, process improvement, and resource allocation. Managers can prioritize activities that have a significant impact on costs and performance.
5. **Process Improvement:**
    - ABCM highlights areas where processes can be improved or streamlined. By understanding the resource consumption of various

activities, organizations can identify inefficiencies and implement changes to enhance overall operational effectiveness.

6. **Performance Measurement:**
    - ABCM allows for more accurate performance measurement at both the activity level and the overall organizational level. Managers can assess the efficiency and effectiveness of different activities, enabling continuous improvement initiatives.
7. **Cost Control and Reduction:**
    - ABCM can help identify opportunities for cost control and reduction. By understanding the costs associated with specific activities, organizations can focus on reducing costs in areas where it makes the most significant impact on overall cost structure.
8. **Customer Profitability Analysis:**
    - ABCM enables organizations to assess the profitability of different customer segments by understanding the costs associated with serving each segment. This information can be valuable for strategic decisions related to customer targeting and service offerings.
9. **Strategic Planning:**
    - ABCM contributes to strategic planning by providing a comprehensive understanding of the cost implications of different activities. This information is crucial for aligning resources with strategic goals and making informed decisions about future investments and initiatives.

In summary, the purpose of Activity-Based Cost Management is to enhance the accuracy of cost information, improve decision-making, optimize resource utilization, and support overall organizational efficiency and effectiveness. It is particularly valuable in industries with diverse product or service offerings and complex cost structures.

STAGES

The implementation of Activity-Based Cost Management (ABCM) typically involves several stages to ensure a systematic and effective adoption of the

methodology. These stages may vary slightly depending on the specific context of an organization, but the following is a general outline of the key stages involved:

1. **Identification of Activities:**
    - The first stage involves identifying and defining the various activities within the organization. These activities can span different functions such as production, setup, ordering, distribution, and administrative tasks. A detailed understanding of all activities is crucial for the success of ABCM.
2. **Identification of Cost Drivers:**
    - For each identified activity, determine the factors or variables that drive the costs associated with that activity. These cost drivers are the basis for allocating costs to products or services based on the actual consumption of resources.
3. **Collection of Resource Consumption Data:**
    - Gather data on the consumption of resources by each activity. This may involve collecting data on machine hours, setup times, order volumes, or other relevant metrics, depending on the identified cost drivers.
4. **Cost Assignment to Activities:**
    - Allocate indirect costs to specific activities based on the resource consumption data and the identified cost drivers. This step involves linking costs directly to the activities that drive those costs, providing a more accurate representation of cost distribution.
5. **Calculation of Activity Rates:**
    - Calculate the cost per unit of the cost driver for each activity. Activity rates help in quantifying the relationship between the cost of an activity and the level of resources consumed. This calculation is essential for later assigning costs to products or services.
6. **Assignment of Costs to Products or Services:**
    - Allocate the costs of activities to the products or services that consume those activities. This step involves multiplying the activity rates by the actual usage of the cost drivers for each product or service.

7. **Validation and Refinement:**

    - Validate the accuracy of the ABCM results by comparing them with actual costs and performance data. Refine the activity cost assignments and rates based on feedback and further analysis. This stage ensures that the ABCM system is reliable and aligns with the organization's operations.

8. **Integration with Management Processes:**

    - Integrate the ABCM information into the organization's management processes. Ensure that managers and decision-makers have access to the activity-based cost data and understand how to use it for strategic and operational decision-making.

9. **Continuous Improvement:**

    - Implement a continuous improvement process for the ABCM system. Regularly review and update activity rates and cost assignments to reflect changes in the organization's processes, technology, or business environment.

10. **Training and Communication:**

    - Train relevant personnel on the principles of ABCM and how to use the information it provides. Effective communication is essential to ensure that all stakeholders understand the benefits and implications of the ABCM system.

It's important to note that the successful implementation of ABCM requires commitment from management, involvement of key stakeholders, and a thorough understanding of the organization's processes and cost structures. The stages outlined above provide a structured approach to adopting ABCM and reaping its benefits in terms of cost accuracy, improved decision-making and operational efficiency.

BENEFITS

Implementing Activity-Based Cost Management (ABCM) can offer a range of benefits to organizations across various industries. Here are some of the key advantages associated with ABCM:

1. **Improved Cost Accuracy:**
    - ABCM provides a more accurate and detailed understanding of how costs are incurred by linking them directly to specific activities. This contrasts with traditional costing methods that often rely on arbitrary allocation bases, leading to more precise cost assignments.
2. **Enhanced Product and Service Costing:**
    - ABCM enables organizations to determine the true cost of producing or delivering specific products or services. By assigning costs based on the actual consumption of activities, managers can make more informed decisions about pricing, product mix, and profitability.
3. **Better Decision-Making:**
    - With more accurate cost information, managers can make better-informed decisions related to resource allocation, product pricing, and process improvement. ABCM provides a solid foundation for strategic decision-making.
4. **Optimized Resource Utilization:**
    - By identifying and analyzing activities, organizations can optimize the use of resources. This involves understanding which activities are essential and contribute the most value, allowing for more efficient allocation of resources.
5. **Process Improvement:**
    - ABCM highlights areas where processes can be improved or streamlined. Organizations can identify inefficiencies and implement changes to enhance overall operational effectiveness, leading to improved efficiency and cost savings.

6. **Customer Profitability Analysis:**
    - ABCM allows organizations to assess the profitability of different customer segments by understanding the costs associated with serving each segment. This information is valuable for strategic decisions related to customer targeting and service offerings.
7. **Performance Measurement:**
    - ABCM provides a more accurate basis for performance measurement at both the activity level and the overall organizational level. This enables organizations to identify high-performing and underperforming areas and implement targeted improvements.
8. **Cost Control and Reduction:**
    - ABCM helps in identifying opportunities for cost control and reduction. By understanding the costs associated with specific activities, organizations can focus on reducing costs in areas where it makes the most significant impact on the overall cost structure.
9. **Strategic Planning:**
    - ABCM contributes to strategic planning by providing a comprehensive understanding of the cost implications of different activities. This information is crucial for aligning resources with strategic goals and making informed decisions about future investments and initiatives.
10. **Enhanced Accountability:**
    - ABCM promotes accountability by making it clear how resources are consumed across various activities. This transparency fosters a culture of responsibility and helps in aligning the efforts of individuals and teams with organizational goals.
11. **Competitive Advantage:**
    - Organizations that successfully implement ABCM may gain a competitive advantage by having a more accurate understanding of their cost structure and being able to adapt more quickly to changes in the business environment.

While ABCM offers significant benefits, it's essential to note that its successful implementation requires commitment from management, proper training of

personnel, and ongoing maintenance and refinement of the system to ensure its continued relevance.

RELEVANCE IN DECISION MAKING

Activity-Based Cost Management (ABCM) is relevant in various ways for organizations seeking to gain a deeper understanding of their cost structures, improve decision-making processes, and enhance overall operational efficiency. Here are some key reasons why ABCM remains relevant:

1. Accurate Costing for Complex Operations:
    - ABCM is particularly relevant in industries with complex operations, diverse product or service offerings, and varied cost structures. Traditional costing methods may oversimplify cost allocation, while ABCM provides a more accurate representation by linking costs directly to the activities that drive them.
2. Improved Decision-Making:
    - The accurate cost information provided by ABCM supports better decision-making. Managers can make more informed choices about pricing strategies, product mix, resource allocation, and process improvements, leading to more effective and strategic decision-making.
3. Resource Optimization:
    - ABCM helps organizations identify and prioritize activities that add the most value. This allows for better resource optimization, as it focuses on activities that are critical to delivering products or services efficiently.
4. Understanding Product and Service Profitability:
    - Organizations can use ABCM to understand the profitability of individual products or services. This insight is crucial for making informed decisions about which products or services to prioritize, invest in, or potentially phase out.
5. Process Improvement and Efficiency:
    - ABCM highlights areas where processes can be improved or streamlined. By identifying activities with high costs or low

efficiency, organizations can implement targeted improvements to enhance overall operational efficiency.

6. Customer Profitability Analysis:
    - ABCM enables organizations to analyze the profitability of different customer segments. This information can guide strategic decisions related to customer targeting, pricing, and service offerings.
7. Aligning Costs with Strategic Goals:
    - ABCM helps organizations align costs with strategic goals. By understanding the costs associated with various activities, management can ensure that resources are allocated in ways that support the overall strategic objectives of the organization.
8. Performance Measurement:
    - ABCM provides a more accurate basis for performance measurement. Organizations can assess the efficiency and effectiveness of different activities, allowing for targeted improvements and a more nuanced understanding of performance.
9. Cost Control and Reduction:
    - ABCM facilitates the identification of opportunities for cost control and reduction. By understanding the costs associated with specific activities, organizations can focus on reducing costs where it matters most, contributing to overall cost control efforts.
10. Enhanced Accountability and Transparency:
    - ABCM promotes accountability by clearly showing how resources are consumed across various activities. This transparency fosters a culture of responsibility and accountability among employees.
11. Adaptation to Changing Business Environments:
    - In dynamic business environments, organizations need to adapt quickly. ABCM provides a flexible cost management approach that can be adjusted to accommodate changes in processes, technology, or market conditions.
12. Technology and Data Advances:

- Advances in technology have made it easier to collect, analyze, and manage large volumes of data, making the implementation of ABCM more feasible and efficient for organizations.

In summary, the relevance of Activity-Based Cost Management lies in its ability to provide more accurate cost information, improve decision-making, optimize resource utilization, and enhance overall organizational effectiveness—particularly in industries with complex and dynamic business environments.

ACTIVITY BASED COST MANAGEMENT APPLICATION IN BUDGETING

Activity-Based Cost Management (ABCM) can play a valuable role in the budgeting process for organizations. By incorporating ABCM principles into budgeting, organizations can achieve a more accurate and insightful understanding of their costs, leading to better-informed budget decisions. Here's how ABCM can be applied in the budgeting context:

1. **Cost Identification and Classification:**
    - ABCM begins with the identification and classification of various activities within the organization. This includes production activities, setup activities, distribution activities, and administrative activities. During budgeting, understanding the full spectrum of activities helps in estimating costs more comprehensively.
2. **Cost Drivers and Resource Consumption:**
    - ABCM identifies cost drivers, which are the factors influencing the costs associated with each activity. During the budgeting process, recognizing these cost drivers allows for a more detailed estimation of resource consumption and associated costs.
3. **Activity-Based Budgeting:**
    - Instead of relying solely on historical data or simple allocation methods, organizations can adopt an activity-based budgeting approach. This involves allocating budgeted costs based on the expected level of activity for each cost driver. This approach aligns the budget with the actual activities driving resource consumption.

4. **Linking Costs to Products or Services:**
    - ABCM helps link costs directly to products or services based on the activities involved in their production or delivery. In the budgeting process, this linkage allows for a more accurate estimation of the costs associated with producing each product or delivering each service.
5. **Identification of Cost Savings Opportunities:**
    - Through the detailed analysis of activities and costs, ABCM can highlight areas where cost savings may be possible. This information can be valuable during the budgeting process, as it allows organizations to set realistic targets for cost reduction initiatives.
6. **Scenario Planning:**
    - ABCM provides a foundation for scenario planning during the budgeting process. By understanding how changes in activities or cost drivers impact overall costs, organizations can model different scenarios and assess the potential financial implications of various business decisions.
7. **Strategic Resource Allocation:**
    - Activity-Based Budgeting allows organizations to strategically allocate resources based on the critical activities that contribute the most value. This aligns budget allocations with the organization's strategic priorities and helps avoid over- or under-investment in certain areas.
8. **Continuous Improvement Integration:**
    - ABCM emphasizes continuous improvement, and this mindset can be integrated into the budgeting process. As organizations identify opportunities for process improvement through ABCM, they can allocate budget resources to support these improvement initiatives.
9. **Performance Measurement and Evaluation:**
    - During the budgeting process, ABCM principles can be used to establish performance metrics tied to specific activities. This allows for ongoing evaluation of actual performance against budgeted expectations, facilitating adjustments and improvements as needed.

10. **Cost Accountability and Transparency:**

- ABCM promotes cost accountability by clearly attributing costs to specific activities. This transparency helps in budget monitoring and provides insights into areas where costs may be exceeding budgeted amounts.

In summary, the application of Activity-Based Cost Management in budgeting enhances the accuracy and relevance of cost estimates, supports informed decision-making, and aligns budget allocations with the organization's strategic priorities. This approach contributes to more effective resource management and overall financial performance.

Difference between Traditional Cost System and ABC system

Basis	Traditional	ABC
1. Cost pools	One or limited number	Many
2. Applied Rate	Volume based	Activity Based
3. Applied for	Labour Intensive	Capital Intensive
4.Benefits	Simple, Inexpensive	Accurate product costing, identification of necessary activities etc
5.Cost assignments	Primary and secondary distribution of Overhead and then allocation of Overhead as per the suitable rate	Allocation of cost pool based on cost drivers then allocation of costs to product or service based on the drivers used by the particular product or service
6.Focus	Departments or responsibility centers	Processes and activities

Illustration 1

Amrit Company produces 3 products A, B and C. The company follows Activity Based Costing system. Information related to various costs of these products for the last year:

Particulars	**A**	**B**	**C**
Production and Sales(Units)	15000	12000	18000
Selling Price p.u. (Rs.)	7.5	12	13
Raw Material Usage(kg) p.u.	2	3	4
Direct labour hours p.u.	0.1	0.15	0.2
Machine Hours p.u.	0.5	0.7	0.9
No. of Production runs p.a.	16	12	8
No. of purchase orders p.a.	24	28	42
No. of deliveries to retailers p.a.	48	60	32

The price of Raw materials remained constant throughout the year at Rs.1.2 per kg and the labour cost was Rs.14.8 per hour. The annual Overhead costs are as follows:

Overheads	**Rs**
Machine setup costs	26550
Machine running costs	66400
Procurement Costs	48000
Delivery costs	54320

Solution: Traditional Method

a) Calculation of Total Overhead

Overheads	**Rs**
Machine setup costs	26550
Machine running costs	66400
Procurement Costs	48000
Delivery costs	54320
Total	195270

b) Calculation of Overhead Absorption rate

Particulars	**A**	**B**	**C**	**Total**
Production Volumes	15000	12000	18000	
Labour hours p.u.	0.1	0.15	0.2	
Total Labour hours	1500	1800	3600	6900

Overhead absorption rate=195270/6900 =Rs.28.30 per hour.

c) Calculation of Cost p.u.

Particulars	**A**	**B**	**C**
Raw material cost (Usage* Rs.1.20)	2.4	3.6	4.8
Direct Labour Cost (Labour hours* Rs.14.80)	1.48	2.22	2.96
Overhead (Labour hours * Rs.28.30)	2.83	4.25	5.66
CPU	6.71	10.07	13.42

ABC Method

a) Calculation of Overhead Absorption rate

Cost Pool	Rs.	Cost Driver		Rate of OH per activity (Rs.)
Machine setup costs	26550	No. of Production runs p.a.	(16+12+8)=36runs	26550/36 = 737.50per run
Machine running costs	66400	No. of Machine Hours p.a.	(7500+8400+16200)# =32100 hours	66400/32100= 2.0685per hour
Procurement Costs	48000	No. of purchase orders p.a.	(24+28+42) = 94 orders	48000/94 = 510.6383 per order
Delivery costs	54320	No. of deliveries to retailers p.a.	(48+30+62) = 140 deliveries	54320/140 = 388 per delivery

Total Machine hours p.a.=Machine hours p.u. *Total units produced

A =0.5*15000 =7500

B =0.7*12000 =8400

C =0.9*18000 =16200

b) Calculation of Cost p.u.

Particulars	A	B	C
MaterialCost	2.4	3.6	4.8
LabourCost	1.48	2.22	1.96
Overhead:			
Machine set up Costs	(737.50*16)/150 = 00 0.7867	(737.50*12)/120 = 00 0.7375	(737.5*8)/1800 = 0 0.3278
Machine running Costs	(2.0685*7500)/150 00 =1.034	(2.0685*8400)/120 00 =1.4479	(2.0685*16200)/180 00 =1.8616
Procurement Costs	(510.6383*24)/150 00 =0.817	(510.6383*28)/120 00 =1.1915	(510.6383*42)/1800 0 =1.1915
Deliverycosts	(388*48)/15000 = 1.2416	(388*30)/12000 = 0.97	(388*62)/18000 = 1.3364
TotalCPU	7.7593	10.1669	11.4773

Overheads p.u. forproductsA, B and C

= (Overhead absorption rate* No. of cost drivers used by the individual products p.a.)/ No. of units produced

Illustration 2.

The budgeted overheads and cost driver volumes of XYZ are as follows.

Cost Pool	Budgeted Overheads(Rs)	Cost Driver	Budgeted Volume
Material procurement	5,80,000	No. of orders	1,100
Material handling	2,50,000	No. of movements	680
Set-up	4,15,000	No. of setups	520
Maintenance	9,70,000	Maintenance hours	8,400
Qualitycontrol	1,76,000	No. of inspection	900
Machinery	7,20,000	No. of machine hours	24,000

The company has produced a batch of 2,600 components of AX-15, its material cost was Rs 1, 30,000 and labor cost Rs 2,45,000. The usage activities of the said batch are as follows.

Material orders – 26, maintenance hours – 690, material movements – 18, inspection – 28, set ups – 25, machine hours – 1,800

Calculate – cost driver rates that are used for tracing appropriate amount of overheads to the said batch and ascertain the cost of batch of components using activity Based Costing.

Solution:

Computation of Cost Driver Rates

	Particulars		**Amount**(Rs)
1.	Material procurement	580000/1100	527
2.	Material handing	250000/680	368
3.	Set-up	415000/520	798
4.	Maintenance	970000/8400	115
5.	Quality control	176000/900	196
6.	Machinery	720000/24000	30

ComputationofBatchCostof2600unitsofAX-15

Particulars		Rs
Material cost		1,30,000
Labour Cost		2,45,000
Prime Cost		3,75,000
Add: Overheads		
Materialorders26x527	13,702	
Materialhandling18x368	6,624	
Set-up25x798	19,950	
Maintenance690x115	79,350	
Quality Control 28x196	5,488	
Machinery1800x30	54,000	1,79,114
Total Cost		**5,54,114**

Illustration 3

A company produces four products, viz. P, Q, R and S. The data relating to production activity are as under

Product	Quantity of production	Material cost/unit Rs	Direct labour hours / unit	Machine hours/unit	Direct Labour cost/unit Rs
P	1,000	10	1	0.50	6
Q	10,000	10	1	0.50	6
R	1,200	32	4	2.00	24
S	14,000	34	3	3.00	18

Production overheads are as under:

(i) Overheads applicable to machine oriented activity : Rs 1, 49,700
(ii) Overheads relating to ordering materials : Rs 7,680
(iii) Set up costs : Rs 17,400
(iv) Administration overheads for spare parts : Rs 34,380
(v) Material handling costs : Rs 30,294

The following further information has been compiled:

Product	No. of setup	No. of materials orders	No. of times materials handled	No. of spare parts
P	3	3	6	6
Q	18	12	30	15
R	5	3	9	3
S	24	12	36	12

Required:

(i) Select a suitable cost driver for each item of overhead expense and calculate the cost per unit of cost driver.

(ii) Using the concept of activity based costing, compute the factory cost per unit of each product.

Solution:

Computation of Cost Driver Rates

1) Overheads relating to Machinery oriented activity

Cost Driver = Machine Hour Rate

(1000 x 0.5) + (1000 x 0.5) + (1200 x 2) + (14000 x 3)

1, 49,700 / 49,900 = Rs 3 per hour

2) Overheads relating to ordering materials

Cost driver = No. of Material orders

7680 / 30 = Rs 256 per order

3) Set up costs

Cost driver=No. of set ups

17400 / 50 = Rs 348 per set up

4) Administrative Overheads for spare parts

Cost driver=No. of spare parts

34380/36 = Rs 955 per spare part.

5) Material Handling costs

Cost driver= No. of times materials handled

30294/81 = Rs 374 per material handling

Computation of factory cost for each product

	P		Q		R		S	
Materials		10.00		10.00		32.00		34.00
Labour		6.00		6.00		24.00		18.00
Overheads								
Machine oriented activity	1.500		1.50		6.00		9.00	
Ordering of Materials	0.768		0.31		0.64		0.22	
Set up costs	1.044		0.63		1.45		0.60	
Administrative Spare Parts	5.730		1.43		2.39		0.82	
Material handling	2.244	11.29	1.12	4.99	2.81	13.29	0.96	11.60
Factory Cost (Rs)		**27.29**		**20.99**		**69.29**		**63.60**

Illustration 4:

Precision Auto comp Ltd. Manufactures and sells two automobile components A and B. Both are identical with slight variation in design. Although the market for both the products is the same, the market share of the company for product A is very high and that of product B very low. The company's accountant has prepared the following profitability statement for the two products Cost of production: (same for both the products)

Direct Material	Rs 125
Direct Labour	Rs 24
Direct Expenses (sub-contract charges)	Rs 36
Overheads (400% of direct labour)	Rs 96
Total Cost	Rs 281

		Product A	Product B	Total
Quantity sold	No.	1,24,000	23,150	1,47,150
Unit sale price	Rs	300	290	
Total sales realisation	Rs			4,39,13,500
Cost of sales as above	Rs			4,13,49,150
Margin	Rs			25,64,350

The company's marketing manager, after attending a workshop on activity-based costing challenges the accountant's figures. The nearest competitor's prices for the two products are Rs 330 and Rs 275 per unit respectively and, if the company can match the competitor's prices, it can sell 75,000 nos. each of the two products. The Production Manager confirms that he can produce this product mix with the existing facilities. The management engages you as consultant, and the following facts have been identified by you:

(a) product A undergoes 5 operations and product B undergoes two operations by sub-contractors, although the total subcontract charges are the same for both the products, and

(b) 75% of the overheads are accounted for by three major heads relating to sub-contracting operations, viz., ordering, inspection and movement of components, to and from the sub-contractor's works. Prepare a revised profitability statement to find out if the marketing manager's proposal is viable.

Solution:

Total overheads = 1,47,150 x 96 = Rs 1,41,26,400

Operations overhead = 1,41,26,400 x 75/100 = Rs 1,05,94,800

Balance 25% assumed to be fixed i.e. Rs 35,31,600

Allocation of Variable Overheads under ABC

A = 1,05,94,800 x 5/7 = Rs 75,67,714 B = 1,05,94,800 x 2/7 = Rs 30,27,086

Statement showing computation profit under Activity Based Costing as per Manager's suggestion:

		A		**B**		**Total**
No. of units		**Units**	**75000**	**Units**	**75000**	
Materials	Rs	125	93,75,000	125	93,75,000	1,87,50,000
Labour	Rs	24	18,00,000	24	18,00,000	36,00,000
Direct expenses	Rs	36	27,00,000	36	27,00,000	54,00,000
Prime Cost	Rs	**185**	**1,38,75,000**	**185**	**1,38,75,000**	**2,77,50,000**
Variable Overheads	Rs	101	75,67,714	40	30,27,086	1,05,94,800
Fixed Overheads	Rs	24	17,65,800	24	17,65,800	35,31,600
Total Cost	Rs	**310**	**2,32,08,514**	**249**	**1,86,67,886**	**4,18,76,400**
Profit	Rs	20	15,41,486	26	19,57,114	34,98,600
Sales	Rs	**330**	**2,47,50,000**	**275**	**2,06,25,000**	**4,53,75,000**

As the profit is more at the Marketing Manager's proposal by ` 9,34,250 and hence this proposal may be accepted.

Illustration 5

Relevant data relating to a company are:

		Products			
		P	Q	R	Total
Production and sales (units)		60,000	40,000	16,000	
Raw material usage in units		10	10	22	
Raw material costs	Rs	50	40	22	24,76,000
Direct labour hours		2.5	4	2	3,42,000
Machine hours		2.5	2	4	2,94,000
Direct labour costs	Rs	16	24	12	
No. of production runs		6	14	40	60
No. of deliveries		18	6	40	64
No. of receipts		60	140	880	1,080
No. of production orders		30	20	50	100

Overheads: `

Setup	60,000
Machines	15,20,000
Receiving	8,70,000
Packing	5,00,000
Engineering	7,46,000

The company operates a JIT inventory policy and receives each component once per production run. Required:

(i) Compute the product cost based on direct labour-hour recovery rate of overheads.

(ii) Compute the product cost using activity based costing.

Solution:

(i) Traditional Method of absorption of overhead i.e. on the basis of Direct Labour Hours

$$\text{Total overheads} = \frac{36,96,000}{\text{Hours } (60000 \times 2.5) + (40000 \times 4) + (16000 \times 3)}$$

$$= 36,96,000 = \text{Rs } 10.81 \text{ per labour hour}$$

Calculation of Factory cost of the products

	P	**Q**	**R**
	Rs	Rs	Rs
Raw Material	50000	4000	2200
Direct Labour	16000	2400	1200
Overheads (2.5 x 10.81)	27025	4324	2162
Factory cost	**93000**	**10724**	**5562**

(ii) Under Activity Based Costing System

Computation of Cost Drivers Rates.

1) Set up cost: Cost driver- No. of Production run 60000/60 = Rs 1000/per run

2) Machines: Cost driver- Machine hour rate

15,20,000 / 2,94,000 = Rs 5.17 per Machine hour rate

3) Receiving cost: Cost driver- No. of Receipts

8,70,000 / 1080 = Rs 805.56

4) Packing: Cost driver -No. of deliveries

5,00,000 / 64 = Rs 7812.5 per delivery

5) Engineering: Cost driver - No. of Production order

7,46,000/100 = Rs 7,460 per order

Calculation of Factory Cost per unit of Production

	P		**Q**		**R**	
	Rs	Rs	Rs	Rs	Rs	Rs
Materials		50.00		40.00		22.00
Direct Labour		16.00		24.00		12.00
Overheads						
Setup cost	0.10		0.35		2.50	
Machines	12.93		10.34		20.68	
Receiving cost	0.81		2.82		44.31	
Packing	2.34		1.17		19.53	
Engineering	3.73	19.91	3.73	18.41	23.31	110.33
Factory Cost		**85.91**		**82.41**		**144.33**

Illustration 6

Trimake Limited makes three main products, using broadly the same production methods and equipment for each. A conventional product costing system is used at present, although an Activity Based Costing (ABC) system is being considered. Details of the three products, for typical period are:

	Labour Hours per unit	Machine Hours per unit	Material Per unit	Volumes Units
Product X	½	1 ½	Rs 20	750
Product Y	1 ½	1	12	1,250
Product Z	1	3	25	7,000

Direct labour costs Rs 6 per hour and production overheads are absorbed on a machine hour basis. The rate for the period is Rs 28 per machine hour.

You are required:

(a) to calculate the cost per unit for each product using conventional methods.

Further analysis shows that the total of production overheads can be divided as follows

	%
Costs relating to set-ups	35
Costs relating to machinery	20
Costs relating to materials handling	15
Costs relating to inspection	30
Total production overhead	100%

The following activity volumes are associated with the product line for the period as a whole. Total activities for the period

	Number of Set-ups	Number of movements of materials	Number of Inspections
Product X	75	12	150
Product Y	115	21	180
Product Z	480	87	670
	670	120	1,000

You are required:

(b) To calculate the cost per unit for each product using ABC principles; c) to comment on the reasons for any differences in the costs in your answers to (a) and (b)

Solution:

(a) Computation of cost per unit using Conventional Methods: Total overheads `

X = 750 x 1.5 x 28 = 31,500

Y = 1250 x 1 x 28 = 35,000

Z = 7000 x 3 x 28 = 5, 88,000

6,54,500

Computation of Cost

	X	**Y**	**Z**
	Rs	Rs	Rs
Materials	20	12	25
Labour	3	9	6
Overheads	42	28	84
Factory Cost	**65**	**49**	**115**

		Setup Cost	Machine Cost	Material Handling Cost	Inspection Expenses	Total
Costs	Rs	2,29,075	1,30,900	98,175	1,96,350	6,54,500
Cost Driver		No. of setups	Machine hours	No. of Moment of Materials	No. of Inspections	
Cost driver rates	Rs	341.90 (229075/670)	5.6 (130900/23375)	818.125 (98,175/120)	196.35 (196350/1000)	

(a) **Under ABC Costing**

Cost per unit under ABC costing

	X		Y		Z	
	Rs	Rs	Rs	Rs	Rs	Rs
Materials		20.00		12.00		25.00
Labour		3.00		9.00		6.00
Overheads						
Setup Cost	34.19		31.45		23.44	
Machine cost	8.40		5.60		16.80	
Machine Handling Cost	13.09		13.74		10.17	
Inspection Cost	39.27	94.95	28.27	79.06	18.79	69.20
Total Cost		117.95		100.06		100.20

Note: Computation of Machine Hours = (750 × 1.5)+(1250 × 1)+(7000 × 3) = 23,375.

UNIT-4

TRANSFER PRICING

Introduction and Meaning:

In the modern days, production is on the mass scale due to technological advancement and up gradation. Organizations grow in course of time and for such growing organizations, decentralization becomes absolutely necessary. It becomes inevitable for such organizations 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 organization. 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 organization. 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.

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.

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.

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.

(a) Actual cost

(b) Cost plus

(c) Standard cost

(d) Marginal cost

2. Market price as transfer price.

3. Negotiated 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 variation 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 sale 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.

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.

PROBLEMS

1. Your company fixes the inter-divisional transfer prices for its products on the basis of cost, plus a return on investment in the division. The Budget for Division A for 1981-82 appears as under:

	Rs
Fixed Assets	5,00,000
Current assets	3,00,000
Debtors	2,00,000
Annual Fixed Cost of the Division	8,00,000
Variable Cost per unit of Product	10
Budgeted Volume	4,00,000 units per year
Desired ROI	28%

Determine the transfer Price for Division A.

Solution:

Variable Cost		10.00
Fixed Cost per unit	8, 00,000 ÷ 4, 00,000	2.00
Required Return	10,00,000 × 28%	
	4,00,000	0.70
Total cost or Transfer price		12.70

2. Transferor Ltd. has two processes Preparing and Finishing. The normal output per week is 7,500 units (Completed) at a capacity of 75%

Transferee Ltd. had production problems in preparing and requires 2,000 units per week of prepared material for their finishing processes.

The existing cost structure of one prepared unit of Transferor Ltd. at existing capacity

Material	Rs 2.00 (variable 100%)
Labour	Rs 2.00 (Variable 50%)
Overhead	Rs 4.00 (variable 25%)

The sale price of a completed unit of Transferor Ltd is Rs16 with a profit of Rs4 per unit.

Construct the effect on the profits Transferor Ltd., for six months (25 weeks) of supplying units to Transferee Ltd. with the following alternative transfer prices per unit:

(i) Marginal Cost

(ii) Marginal Cost + 25%

(iii) Marginal Cost + 15% Return on capital (assume capital employed Rs 20 lakhs)

(iv) Existing Cost

(v) Existing Cost + a portion of profit on the basis of (preparing cost / Total Cost) x Unit Profit

(vi) At an agreed market price of Rs 8.50 assume no increase in fixed cost.

Solution:

Transferred units 25 x 2000 = Rs 50000

Existing profit 7500 x 25 x 4 = Rs 750000

Effect on profit if transfer price is

(i) Marginal cost

	Rs
Material	2.00
Labour	1.00
OHs	1.00
	4.00

At this transfer price there is no effect on profit of transferor ltd.

(ii) Profit = 50000

(iii) Price per unit = 4 + {(2000000 x 15% x 0.5)/50000} = 7

Under this method profit of transferor ltd is increases by 150000 i.e., 50000 x (7-4)

(iv) Profit increases by 50000 x (8-4) = 200000

(v) Transfer price: Rs

{8 + (8/12)4} = 10.67

Marginal Cost = 4.00
Profit = 6.67

Profit increases by 50000 x 6.67 = Rs 333500/-

(vi) Transfer price = 8.50

Profit increase by 4.5 x 50000 = Rs 2,25,000

3. A Company with two manufacturing divisions is organized on profit centre basis. Division 'A' is the only source for the supply of a component that is used in Division B in the manufacture of a product KLIM. One such part is used in each unit of the product KLIM. As the demand for the product is not steady. Division B can obtain orders for increased quantities only by spending more on sales promotion and by reducing the selling prices. The Manager of Division B has accordingly prepared the following forecast of sales quantities and selling prices.

Sales units per day	Average Selling price per unit of KLIM
	Rs
1,000	5.25
2,000	3.98
3,000	3.30
4,000	2.78
5,000	2.40
6,000	2.01

The manufacturing cost of KLIM in Division B is Rs 3,750 for first Rs1,000 units and Rs 750 per 1,000 units in excess of 1,000 units.

Division A incurs a total cost of Rs 1,500 per day for an output to 1,000 components and the total costs will increase by Rs 900 per day for every additional 1,000 components manufactured. The Manager of Division A states that the operating results of his Division will be optimised if the transfer price of

the component is set at Rs 1.20 per unit and he has accordingly set the aforesaid transfer price for his supplies of the component to Division A.

You are required:

(a) Prepare a schedule showing the profitability at each level of output for Division A and Division B.

(b) Find the profitability of the company as a whole at the output level which

(i) Division A's net profit is maximum.

(ii) Division B's net profit is maximum.

(c) If the Company is not organised on profit centre basis, what level of output will be chosen to yield the maximum profit.

Solution:

(i) Statement showing profit of division A:

Sale per day (units)	Sale Value	Cost	Profit/Loss
	Rs	Rs	Rs
1000	1200	1500	(300)
2000	2400	2400	-
3000	3600	3300	300
4000	4800	4200	600
5000	6000	5100	900
6000	7200	6000	1200

Profit of division B:

No of units	Sales	Transfer price	Other manufacturing cost	Total cost	Profit/Loss
	Rs	Rs	Rs	Rs	Rs
1000	5250	1200	3750	4950	300
2000	7960	2400	4500	6900	1060
3000	9900	3600	5250	8850	1050
4000	11120	4800	6000	10800	320
5000	12000	6000	6750	12750	(750)
6000	12060	7200	7500	14700	(2640)

(ii) Profitability of the company at the output level where division A's net profit is maximum:

	Rs
Profit of division A at 6000units	1200
Profit of division B at 6000units	(2640)
Profit / (loss)	(1440)

Division B's net profit is maximum:

Profit of division A at 2000 units	-
Profit of division B at 2000units	1060
	1060

(c) When the company is not organized on profit centre basis

Profit at different levels of output

Units	Division A	Division B	Total
	Rs	Rs	Rs
1000	(300)	300	-
2000	-	1060	1060
3000	300	1050	1350
4000	600	320	920
5000	900	(750)	150
6000	1200	(2640)	(1440)

Best output level is 3000 units

4 .Division A is a profit centre which produces three products X, Y and Z. Each product has an external market.

	X	Y	Z
External market price per unit	Rs 48	Rs 46	Rs 40
Variable cost of production in division A	Rs 33	Rs 24	Rs 28
Labour hours required per unit in division A	3	4	2

Product Y can be transferred to Division B, but the maximum quantity that might be required for transfer is 300 units of Y.

	X	Y	Z
The maximum external sales are:	800 units	500 units	300 units

Instead of receiving transfers of Product Y from Division A, Division B could buy similar product in the open market at a slightly cheaper price of Rs 45 per unit.

What should the transfer price be for each unit for 300 units of Y, if the total labour hours available in Division A are?

(a) 3800 hours

(b) 5600 hours.

Solution:

Computation of contribution per labour hour from external sales:

	X	Y	Z
Market price (Rs)	48	46	40
Variable cost (Rs)	33	24	28
Contribution (Rs)	15	22	12
Labour hours required	3	4	2
Contribution per labour hour (Rs)	5	5.50	6
Priority	III	II	I

Computation of transfer price when

(a) The capacity is 3800 hours:

Hours required for Z = 300 x 2 = 600

Y = 500 x 4 = 2000

=2600

X = 800 x 3 =2400

=5000

The existing capacity is not sufficient to produce the units to meet the external sales. In order to transfer 300 units of Y, 1200 hours are required in which division A will give up the production of X to this extent.

	Rs
Variable cost of Y	24
(+) contribution lost by giving up production of X to the extent of 1200 hours = 1200 x 5 = 6000	
∴ Opportunity cost per unit = (6000/300)	20
Required transfer price	44

(b) If the capacity is 5600 hours:

Variable cost	24
Contribution cost of giving up X to the extent of 600hours = 600 x 5 = 3000	
Opportunity Cost Per unit = (3000/300)	10
Required transfer price	34

5. PH Ltd. manufactures and sells two products, namely BXE and DXE. The company's investment in fixed assets is Rs 2 lakh. The working capital investment is equivalent to three months' cost of sales of both the products. The fixed capital has been financed by term loan lending institutions at an interest of 11% p.a. Half of the working capital is financed through bank borrowing carrying interest at the rate of 19.4%, the other half of the working capital being generated through internal resources.

The operating data anticipated for 2020-2021 is as under:

	Product BXE	Product DXE
Production per annum (in units)	5,000	10,000
Direct Material/unit:		
Material A (Price Rs 4 per kg)	1 Kg	0.75 Kg
Material B (Price Rs 2 per kg)	1 Kg	1 Kg
Direct labour hours	5	3

Direct wage rate Rs 2 per hour. Factory overheads are recovered at 50% of direct wages. Administrative overheads are recovered at 40% of factory cost. Selling and distribution expenses are Rs 2 and Rs 3 per unit respectively of BXE and DXE. The company expects to earn an after tax profit of 12% on capital employed. The income tax rate is 50%.

Required:

(i) Prepare a cost sheet showing the element wise cost, total cost profit and selling price per unit of both the products.

(ii) Prepare a statement showing the net profit of the company after taxes for the 2016-17.

Solution:

(a) Cost sheet

	BXE		**DXE**		**TOTAL**
	UNIT	**TOTAL**	**UNIT**	**TOTAL**	
	Rs	Rs	Rs	Rs	Rs
Direct material	6	30000	5	50000	80000
Direct wages	10	50000	6	60000	110000
Prime cost	16	80000	11	110000	190000
Factory OHs	5	25000	3	30000	55000
Factory cost	21	105000	14	140000	245000
Office OHs	8.40	42000	5.60	56000	98000

Cost of production	29.40	147000	19.60	196000	343000
Selling & Dis OHs	2.00	10000	3.00	30000	40000
Cost of sales	31.40	157000	22.60	226000	383000
Interest		14807		16481	31288
Profit		33420		37560	70980
Sales/S.P	41.05	205227	28.00	280041	485268

Working notes:

(A) Rs

Return after tax	[{383000 x 0.25} + 200000] 12%	35,490
∴ Sales	383000 + 31288 + [35490 × (1/50%)]	4,85,268

(B)

	BXE	DXE	Rs Total
Interest Calculation	{(157000 × 0.25 × 0.50 × 19.4%) + (100000 × 11% × 50%)} =14,807	[{226000 × 0.25 × 0.50 × 19.4%) + (100000 × 11% × 50%)} =16,481	31,288

(C)

	BXE	DXE	Rs Total
Profit Calculation	{(157000 × 0.25) + 100000} × 12% × (1/50%)	{[226000x0.25] + 100000} x 12% x (1/50%)	
Total	= 33,420	=37,560	70,980

(b) Statement showing net profit:

	Rs
Sales	4, 85,268
(-) cost of sales	(3, 83,000)
Gross profit	1, 02,268
(-) interest {22000 + (95750/2) 19.4%}	(31,288)
Profit before tax	70,980
(-) tax @ 50%	(35,490)
Profit after tax	35,490

6. P.H. Ltd. has two manufacturing departments organized into separate profit centers known as the Basic unit and Processing unit. The Basic unit has a production capacity of 4,000 tons per month of Chemvax but at present its sales are limited Rs 2,000 tones to outside market and 1,200 tones to the Processing unit.

The transfer price for the year 1986 was agreed at Rs 400 per tonne. This price has been fixed in line with the external wholesale trade price on 1st January 1986. However due to heavy competition the Basic unit has been forced to reduce the wholesale trade price to Rs 360 per tonne with effect from 1st June, 1986. This price however was not made applicable to the sales made to the Processing unit of the company. The Processing unit applied for revision of the

price as applicable to the outside market buyers as from 1st June 1986 but the same was turned down by the basic unit.

The Processing unit refines Chem vax and packs the output Known as Colour-X in drums of 50kgs each. The selling price of colour-X is Rs 40 per drum. The Processing unit has a potential of selling a further quantity of 16,000 drums of colour-X provided the overall price is reduced to Rs 32 per drum. In that event it can buy the additional 800 tonnes of Chemvex from the basic unit whose capacity can be fully utilised. The outside market will not however absorb more than the present quantity of 2,000 tonnes.

The cost data relevant to the operations are:

	Basic Unit	Processing Unit
	Rs	Rs
Raw Materials/tonne	70	Transfer price
Variable Cost/tonne	140	170
Fixed Costs/month	3,00,000	1,20,000

You are required:

(i) Prepare statement showing the estimated profitability for June 1986 for each unit and the company as a whole on the following bases:

(a) At 80% and 100% capacity utilization of the Basic unit at the market price and transfer price to the

Processing unit of Rs 400 per tonne.

(b) At 80% capacity utilisation of the basic unit at the market price of Rs 360 per tonne and the transfer price to the Processing unit of Rs 400 per tonne.

(c) At 100% capacity utilization of the Basic unit at the market price and transfer price to the Processing unit of Rs 360 per ton.

(ii) Comment on the effect of the company's transfer pricing policy on the profitability of the Processing Unit.

Solution:

(a) Statement showing computation of profit at 80% capacity when transfer price is ` 400/- ton:

		Basic unit	**Processing unit**	**Total**
i) No. of units		3200	(1200x1000)/50	24000
ii) Contribution per unit	Rs	{400-(140 + 70)} = 190	{40 – (570/20)}	11.50
iii) Total contribution	Rs	608000	276000	884000
iv) Fixed cost	Rs	300000	120000	420000
v) Profit	Rs	308000	156000	464000

At 100% capacity:

		Basic unit	**Processing unit**	**Total**
i) No. of units		4000	40000	
ii) Contribution per unit	Rs	190	3.50	
iii) Total contribution	Rs	760000	140000	900000
iv) Fixed cost	Rs	300000	120000	420000
v) Profit	Rs	460000	20000	480000

(b) Computation of profit:

		Basic unit		Processing unit	Total
		Outside sale	**Internal transfer**		
i) No of units		2000	1200	24000	
ii) Contribution per unit	Rs	150	190	11.50	
iii) Total contribution	Rs	300000	228000	276000	
	Rs		528000	276000	804000
iv) Fixed cost	Rs		300000	120000	420000
v) Profit	Rs		228000	156000	384000

(c) Computation of profit:

		Basic unit	**Processing unit**	**Total**
No of units		4000	40000	
Contribution per unit	Rs	150	5.50	
Total contribution	Rs	600000	220000	820000
Fixed cost	Rs	300000	120000	420000
Profit	Rs	300000	100000	400000

Overall profit is more at 100% capacity of basic unit with a transfer price of Rs 400/- per ton being the market price. If individual interests are not considered this may be adopted. However, from the view point of the processing unit, it will not be interested to buy more than 1200tonnes from the basic unit, because

its profit gets reduced when it takes additional units. Therefore, the present policy of the management is not at all attractive to the processing unit.

7. SV Ltd. Manufactures a product which is obtained basically from a series of mixing operations. The finished product is packaged in the company made glass bottles and packed in attractive cartons.

The company is organized into two independent divisions viz. one for the manufacture of the end product and the other for the manufacture of glass bottles. The Product manufacturing division can buy all the bottle requirements from the bottle manufacturing division.

The General Manager of the bottle manufacturing division has obtained the following quotations from the outside manufacturers for the empty bottles.

Volume	**Purchase Value**
Empty bottles Total	(Rs)
8,00,000	14,00,000
12,00,000	20,00,000

A cost analysis of the bottle manufacturing division for the manufacture of empty bottles reveals the following production costs:

Volume	**Purchase value**
Empty bottles	Total Cost (Rs)
8,00,000	Rs 10,40,000
12,00,000	14,40,000

The production cost and sales value of the end product marketed by the product manufacturing division are as under.

Volume	Total cost of end product*	Sales Value
(Bottle of end product)		(Packed in bottles)
8,00,000	Rs 64,80,000	Rs 91,20,000
12,00,000	Rs 96,80,000	Rs 1,27,80,000

There has been considerable discussion at the corporate level as to the use of proper price for transfer of empty bottles from the bottle manufacturing division to product manufacturing division. This interest is heightened because a significant portion of the Divisional General Manager's salary is in incentive bonus based on profit centre results.

As the corporate management accountant responsible for defining the proper transfer prices for the supply of empty bottles by the bottle manufacturing division to the product manufacturing division, you are required to show for the two levels of volume of 8, 00,000 and 12, 00,000 bottles, the profitability by using (i) market price and (ii) shared profit relative to the cost involved basis for the determination of transfer prices. The profitability position should be furnished separately for the two divisions and the company as a whole under each method. Discuss also the effect of these methods on the profitability of the two divisions.

* (Excluding cost of empty bottles)

Solution:

Statement showing Computation of transfer price on the basis of profit shared on cost basis:

	Output (800000)	**Output (1200000)**
	Amount (Rs)	Amount (Rs)
Sales	9120000	12780000
Costs:		
Product manufacturing division	6480000	9680000
Bottle manufacturing division	1040000	1440000
	7520000	11120000
Profit	1600000	1660000
Share of bottle manufacturing division	221276	214964
Product manufacturing division	1378724	1445036
Transfer price	1261276	1654964
Transfer price per bottle	1.5777	1.379

Profitability on the basis of market price:

	Output (800000)	**Output (1200000)**
	Amount (Rs)	Amount (Rs)
Bottle manufacturing division		
Sale value	1400000	2000000
(-)cost	1040000	1440000
Profit	360000	560000
Product manufacturing division		
Sale value	9120000	12780000
(-) Cost of product	6480000	9680000
Cost of bottle	1400000	2000000
	7880000	11680000
Profit	1240000	1100000
Total profit	1600000	1660000
Transfer price	1.75	1.67

8. A manufacture has three products A, B, C Current sales; cost and selling price details and processing time requirements are as follows:

	Product A	Product B	Product C
Annual sales (units)	6000	6000	750
Selling Price (Rs)	20	31	39
Unit Cost (Rs)	18	24	30
Processing time required per unit (hour)	1	1	2

The firm is working at full capacity (13,500 processing hours per year.) Fixed manufacturing overheads are absorbed into unit costs by a charge of 200% of variable costs. This procedure fully absorbs the fixed manufacturing overhead.

Assuming that:

(i) Processing time can be switched from one product line to another.

(ii) The demand at current selling price is:

Product A	Product B	Product C
11,000	8,000	2,000

(iii) The selling prices are not being altered.

You are required to calculate the best production programme for the next operating period and to indicate the increase in net profit that this should yield. In addition identify the shadow price of processing hour.

Solution:

Computation of contribution per labour hour & priority:

		A	B	C
i) Selling price	Rs	20	31	39
ii) Variable cost(1/3rd of total cost)	Rs	6	8	10
iii) Contribution per unit	Rs	14	23	29
iv) Contribution per hour	Rs	14	23	14.5
v) Priority		III	I	II

Computation of current profit:

		A	B	C	TOTAL
i) No of units		6000	6000	750	
ii) Contribution per unit	Rs	14	23	29	
iii) Total contribution	Rs	84000	138000	21750	243750
iv) Fixed cost	Rs	72000	96000	15000	183000
v) Profit	Rs				60750

Statement showing optimum mix & profit at that mix:

		A	B	C	TOTAL
i) No of units		1500	8000	2000	
ii) Contribution per unit	Rs	14	23	29	
iii) Total contribution	Rs	21000	184000	58000	263000
iv) Fixed cost	Rs				183000
v) Profit	Rs				80000

Working notes:

Hours available	13500
(-) used for B = 8000 x 1	8000
	5500
(-) used for C = 2000 x 2	4000
Used for A	1500

Increase in profit = 80000 – 60750 = 19250

Shadow price of processing hour:

The shadow price is the opportunity cost of one unit of resource for the decision maker. In the present case every extra processing hour will increase contribution by Rs 14

Therefore the shadow price of processing hour is Rs 14.

9. Look Ahead Ltd. wants to fix proper selling prices for their products 'A' and 'B' which they are newly introducing in the market. Both these products will be manufactured in Department D, which is considered as a Profit Centre.

The estimated data are as under: -

	A	B
Annual Production (unit)	1,00,000	2,00,000
	Rs	Rs
Direct Materials per unit	15.00	14.00
Direct Labour per unit	9.00	6.00

(Direct Labour Hour Rate = Rs 3)

The proportion of overheads other than interest, chargeable to the two products are as under: Factory overheads (50% fixed) 100% of Direct Wages. Administration overheads (100% fixed) 10% of factory costs. Selling and

Distribution overheads (50% variable) Rs 3 and Rs 4 respectively per unit of products A and B. The fixed capital investment in the Department is Rs 50 lakhs. The working capital requirement is equivalent to 6 months stock of cost of sales of both the product. For this project a term loan amounting to Rs 40 lakhs has been obtained from Financial Institutions on a interest rate of 14% per annum. 50% of the working capital needs are met by bank borrowing carrying interest at 18% per annum. The Department is expected to give a return of 20% on capital employed.

You are required to:

(a) Fix the selling price of products A and B such that the contribution per direct labour hour is the same for both the products.

(b) Prepare a statement showing in details the overall profit that would be made by the Department.

Solution:

Statement of Cost

	A	**B**
Direct Material	Amount (Rs)	Amount (Rs)
Direct Labour	15	14
Prime Cost	9	6
Factory OH(100% of Direct Labour)	14	20
Factory Cost	9	6
Administration OHs (10% of Factory Cost)	33	26
Cost of production	3.30	2.6
Selling and Distribution	36.30	28.6
Cost of Sales	3	4
	39.30	32.60

Variable Cost:

	A	**B**
	Amount (Rs)	Amount (Rs)
Prime Cost	24	20
Factory OHs (Variable) (9x50%)	4.5	3
(6x50%)	1.5	2
Selling (variable)		
Total	30	25

Computation of Total capital Employed:

Fixed Capital **Working Capital:**		**Amount (Rs)** **50,00,000**
A = 1,00,000 x 39.3	39,30,000	
B = 2,00,000 x 32.6	65,20,000	
	1,04,50,000 x 6/12	52,25,000
Total Capital employed		20,45,000
Total Cost		1,04,50,000
Add: EBIT		20,45,000
Sales Value		1,24,95,000
Less: Variable Cost	1,00,000 x 30 + 2,00,000 x 25	80,00,000
Contribution		44,95,000
Contribution per hour	44,95,000/7,00,000	6.4214
Contribution for unit of 'A"	3 x 6.4214	19.2643
Contribution for unit of 'B"	2 x 6.4214	12.8429

Computation of Selling Price:

	A	**B**
	Amount (Rs)	Amount(Rs)
Variable cost	30	25
Add: Required Contribution	19.2643	12.8429
Selling Price	49.2643	37.8429

(b)

		Amount (Rs)
I	Sales	1,24,95,000
II	Cost	1,04,50,000
III	EBIT (Profit)	20,45,000
IV	Interest on term loan (40,00,000 x 14%)	(5,60,000)
V	Interest on bank borrowing 52,25,000 x ½ x 18/100	(4,70,250)
VI	Profit	10,14,750

10. (Pricing Strategies)

S.V.Ltd budgets to make 1,00,000 units of product P. The variable cost per unit is Rs 10. Fixed costs are Rs 6,00,000. The finance Director suggested that the cost-plus approach should be used with a profit mark-up of 25%. However, the Marketing Director disagreed and has supplied the following information:

Price per unit (Rs)	Demand (Unit)
18	84,000
20	76,000
22	70,000
24	64,000
26	54,000

As Management Accountant of the Company analyse the above proposals and comment.

Solution:

Calculation of selling price as per Finance Director's approach

	Amount (Rs)
Variable Cost	10
Fixed Cost (6,00,000/1,00,000)	6
Total Cost	16
Add: Profit mark up 25%	4
Selling Price	20

Evaluation of marketing Director's Proposal:

Selling Price	Contribution per unit	No of units	Total contribution	Fixed Cost	Profit
Rs	Rs	Rs	Rs	Rs	Rs
18	8	84000	6,72,000	6,00,000	72,000
20	10	76000	7,60,000	6,00,000	1,60,000
22	12	70000	8,40,000	6,00,000	2,40,000
24	14	64000	8,96,000	6,00,000	2,96,000
26	16	54000	8,64,000	6,00,000	2,64,000

At the selling price of Rs 24 per unit, the profit is maximum and hence that price must be fixed for the product.

(Transfer Price)

11. XYZ Ltd which has a system of assessment of Divisional Performance on the basis of residual income has two Divisions, Alfa and Beta. Alfa has annual capacity to manufacture 15,00,000 numbers of a special component that it sells to outside customers, but has idle capacity. The budgeted residual income of Beta is Rs 1,20,00,000 while that of Alfa is Rs 1,00,00,000. Other relevant details extracted from the budget of Alfa for the current year were as follows.

Particulars

Sale (outside customers)	12,00,000 units @ Rs 180 per unit
Variable cost per unit	Rs 160
Divisional fixed cost	Rs 80,00,000
Capital employed	Rs 7,50,00,000
Cost of Capital	12%

Beta has just received a special order for which it requires components similar to the ones made by Alfa. Fully aware of the idle capacity of Alfa, beta has asked Alfa to quote for manufacture and supply of 3,00,000 numbers of the components with a slight modification during final processing. Alfa and Beta agree that this will involve an extra variable cost of Rs 5 per unit.

Calculate the transfer price which Alfa should quote to Beta to achieve its budgeted residual income.

Solution:

Contribution required at Budgeted Residual Income

	Rs
Fixed cost	80,00,000
Return on 7,50,00,000 x 12 %	90,00,000
Residual Income	1,00,00,000
Total Contribution required.	2,70,00,000

Contribution derived from existing units = 12,00,000 x 20 = Rs 2,40,00,000

Contribution required on 3,00,000 units = 2,70,00,000 – 2,40,00,000 = Rs 30,00,000

Contribution per unit = 30,00,000 / 3,00,000 = Rs 10

Increase in Variable cost = Rs 5

∴ Transfer price = V.C + Desired Residual Income + Increase in VC

= 160 + 10 + 5

= Rs 175

(Division wise Profitability & Transfer Price)

12. Vinak Ltd. has two manufacturing divisions, AD and CD. Each division operates as an independent profit centre. AD which produces two components BRITE and LITE has a capacity of 1,00,000 hours per annum. The annual fixed overheads of this department amounts to Rs 20 lakhs. The product wise variable cost data are as under:

	BRITE Rs /unit	**LITE Rs /unit**
Direct Materials	10	5
Direct Labour and Variable overheads	140	35
Total	150	40

The direct labour and variable overhead is Rs 35 per hour.

AD has a permanent customer for the purchase of 15,000 units of BRITE per annum at a selling price of Rs 300 per unit. The balance capacity is devoted to the production of LITE for which there is an unlimited sales potential at Rs 60 per unit.

CD assembles a product known as TITE using an imported component. The annual fixed overheads of this division amount to Rs 4 lakhs and the variable cost data per unit are as under:

	TITE Rs /Unit
Imported component	300
Direct Materials	40
Direct Labour and variable overheads (10 hours @ Rs 25)	250
Total	590

The selling price of TITE is Rs 700 per unit.

With a view of minimising the dependence on imported components, the possibility of using the company's own component BRITE, which is similar to

the imported component, was explored. The import substitution is possible with slight modification in the manufacture of TITE which in that case will take two extra labour hours per unit. This means an increase of Rs 50 in variable costs per unit of TITE. CD envisages a production of 5,000 units per annum of TITE. You are required to present the division wise profitability and the profitability of the company as a whole on the basis of the following conditions:

(i) CD Imports its requirements of 5,000 components for the manufacture of TITE.

(ii) CD Stops import and substitutes BRITE by drawing 5,000 units of BRITE from AD at the market price of Rs 300 per unit.

(iii) Same situation as in (ii) above except that CD gets a relief of Rs 50/- per unit (net transfer price to CD is Rs 250 per unit) of BRITE to compensate the increased labour and variable overhead cost of CD.

(iv) CD revises its production programme to manufacture 12,000 units of TITE by drawing 10,000 units of BRITE from AD at Rs 250 per unit and imports the balance of 2,000 units of components at Rs 300/- per unit. Due to installation of additional production capacity, the annual fixed overhead of CD would increase by Rs 7,70,000. In order to induce CD to the expansion programme do you think a negotiated transfer price of Rs 240 for BRITE would be agreed by AD? Give reasons and also comment on the best alternative (i to iv) for the company as a whole.

Solution:

	BRITE Rs	**LITE** Rs	**TITE** Rs
Selling Price	300	60	700
Variable Costs	150	40	590
Contribution	150	20	110

Time required to produce 1 unit of BRITE = 140/35 = 4 hrs.

Time required to produce 1 unit of LITE = 35/35 = 1 hr.

Profitability:

(i)

	Amount (Rs)
Division AD	
15,000 units of BRITE x Rs150	22,50,000
40,000 units of LITE x Rs20	8,00,000
Total contribution	30,50,000
Fixed expenses	20,00,000
Profit (A)	10,50,000
Division CD	
5,000 units of TITE X Rs110 contribution	5,50,000
Fixed expenses	4,00,000
Profit (B)	1,50,000
Overall Profit (A + B)	12,00,000

(ii)

	Amount (Rs)
Division AD	
15,000 units of BRITE outside customer @ Rs150	22,50,000
5,000 units of BRITE Division CD @ Rs150	7,50,000
20,000 units of LITE (Limited to	4,00,000

capacity) @ Rs20	
Total contribution	34,00,000
Fixed expenses	20,00,000
Profit (A)	14,00,000
Division CD	
Extra cost of labour Rs50. Hence VC = 640 Hence, contribution = 700 – 640 = Rs60	
5,000 units @ Rs60 contribution	3,00,000
Fixed expenses	4,00,000
Profit (B)	(1,00,000)
Overall Profit (A + B)	13,00,000

(iii)

	Amount (Rs)	Amount (Rs)
Division AD		
15,000 units of BRITE outside customer @ Rs150		22,50,000
5,000 units of BRITE Division CD @ Rs100		5,00,000
20,000 units of LITE (Limited to capacity) @ Rs20		4,00,000
Total contribution		31,50,000
Fixed expenses		20,00,000
Profit (A)		11,50,000
Division CD		
BRITE from AD	250	
Labour and overhead	340	
Variable costs	590	
Contribution (Rs700 – Rs590)	110 per unit	
5,000 unit @ Rs110		5,50,000
Fixed expenses		4,00,000
Profit (B)		1,50,000
Overall profit (A + B)		13,00,000

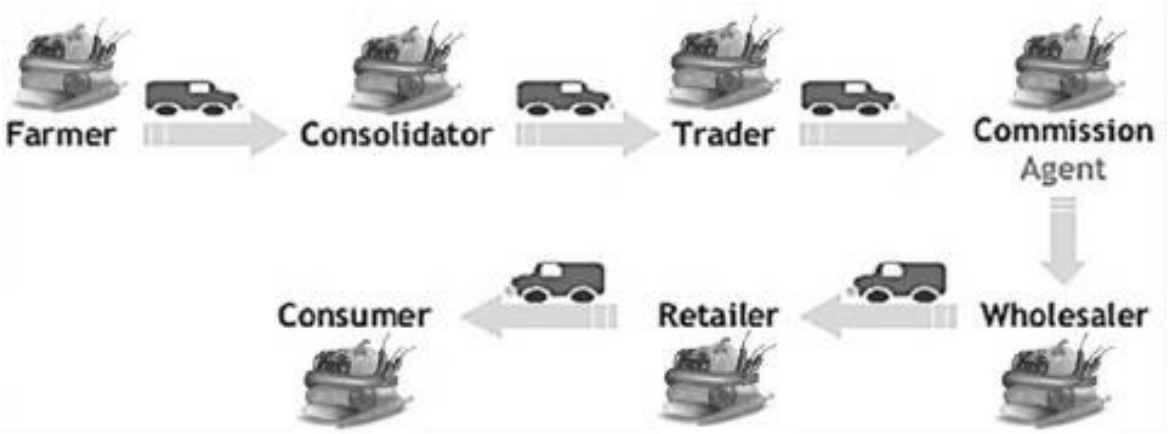
(iv)

	Amount (Rs)
Division AD	
15,000 units of BRITE outside party @ Rs150	22,50,000
10,000 units of BRITE to CD @ Rs250 i.e. contribution @ Rs100	10,00,000
Total contribution	32,50,000
Fixed expenses	20,00,000
Profit (A)	12,50,000
Division CD	
Contribution on input from AD [10,000 × Rs (700-250-340)]	11,00,000
Contribution on imported material [2,000 ×Rs (700-340-250)]	2,20,000
Total contribution	13,20,000
Fixed expenses (4,00,000 + 7,70,000)	11,70,000
Profit (B)	1,50,000
Overall Profit (A + B)	14,00,000

Alternative (ii) and (iii) is the same from company's point of view, profit is merely transferred from one division to other. In general import substitution has helped the company as a whole finding from (i) and (iii). Net transfer price of Rs250 per unit is fair to AD and it also does not harm CD because its profitability has not reduced. In fact to encourage CD to be an active member of import substitution the transfer price could be lower than Rs250 per unit so long it is not detrimental to the interest of AD i.e. as long as total profit remains above Rs10,50,000 in (i).If CD increases its production and wants to utilise the capacity of AD with good product mix, the company will benefit. More production of BRITE at the cost of LITE will benefit AD and that has happened in alternative (iv). The total company profit is the highest but the condition of CD has not improved because of increase in fixed cost.

UNIT-5

COST MANAGEMENT IN AGRICULTURE AND IT SECTOR



Features

- Challenges associated with structure of the industry which is fragmented and unorganized
- Lack of understanding of costs
- Understanding the potential of working collaboratively
- Use of target costing techniques for price determination
- Imbalance of power across the supply chain

Fragmented Structure of the Industry

The structure of the agriculture sector is seen to be unorganized and fragmented in nature and thus lack of effective regulation in the given sector is also seen as one of the reasons why farmers seem to be exploited and have been operating at very low margins.

Lack of understanding of costs and prices by the farmers

One of the key reasons seen for the lack of appropriate cost management in the given sector is with regards to the lack of prioritization of the cost management among farmers because of lack of knowledge with regards to the same. Understanding the potential to work collaboratively

The farmers need to be open to innovation in cost management and contracting techniques. Though there is scope for cost reduction in order to bring about improvement in the profit margins for the farmers, it is seen that generally the profits tend to get transferred to the customers and the only point of negotiation is in the contract pricing with the retailers which the farmers fail to reach.

Target cost Management

The target costing technique involves determining the cost by subtracting the required margin from the anticipated price for the agricultural produce. However, the anticipated price for the agricultural products fluctuates making the process of cost management using the target cost management system ineffective in the case of the agricultural sector Imbalance of power distribution With the fragmentation and the unorganized nature of the farmers operating in the agricultural sector, the power of bargaining seems to lie in the hands of the wholesalers purchasing the produce from the farmers resulting in overall low margins for farmers in comparisons to the margins earned by the wholesalers and the retailers operating in the said sector.

Cost Management

Cost Management focuses upon all the activities internal and external to the value chain process in order to help in cost reduction and cost control. In relation to the agricultural sector, the Activity Based Costing technique is being increasingly accepted for the purpose of cost management.

Large scale enterprises engaged in the agriculture sector that are engaged in the investment of high scale capital expenditure require efficient utilization of technology as well as the efficient use of production technology that are available at their disposal.

Thus, the Activity Based Costing as the name suggests provides a better manner in which the indirect costs associated with the processes carried out in the agricultural sector can be carried out in an efficient manner.

It is a step up from the target cost management technique where the fluctuation in the anticipated price which forms part of the formula might not result in appropriate determination of the target costs.

Therefore, ABC costing can help in allocation of the costs in relation to the various activities associated with the production based upon the cost drivers identified in relation to each production activity.

- Benefits of using ABC for cost management in the agricultural sector
- Adjustable costing technique
- Faster and more accurate
- Enables carrying out a more detailed cost analysis

Minimum Support Price (MSP)

In India, Minimum Support Price (MSP) was introduced by the Government of India to protect farmers against sharp dip of agricultural prices, which was usually observed during the harvest seasons. The harvest seasons are associated with huge supply, which overshadows the demand, and hence, in most cases the commodity prices hit the bottom. This forces the farmers, in necessity of money for repayment of debts, in selling their produce at losses or very little profits. Thus, the government fixes the MSP, as a part of government food grain

procurement. Selling at MSP ensures profit margins for farmers and avoids distress selling situations.

INFORMATION TECHNOLOGY (IT) SECTOR

There are a number of challenges associated with the management of the costs associated with the Information Technology expenditures incurred by the Multi-National corporations. Thus, the complexity of the operating structure and the difficulty seen in the implementation of the cost allocation models, it is seen that in order to manage the IT costs, most organizations tend to develop centralized IT departments acting as cost centers for the purpose of managing the IT budgets as well as allocation of costs associated with along with the charging back of expenses that are incurred by the business units.

IT Organization's Engagement Model

The question that needs to be addressed under the same is that whether the IT organization should be organized as a cost center to the organization or whether it should be seen as a strategic partner to the business. With more and more organizations whether large or small in nature, opting for third party allocation or opting for cloud computing services it can be seen that the internal IT departments are fighting hard for remaining relevant for the organization. In order to stay relevant, what the It department needs is a better visibility towards the IT needs of the organization. In order to do the same, organizations operating in the given sector can adopt what is referred as to the 4D framework.
4D IT Cost Optimization Framework Defining Organization Vision

Any amount of spending carried out in relation to the Information Technology requirements of the organization needs to be aligned to the organizational vision and long term objectives. Business owners should have a sense of ownership and thereby control the IT costs in an effective manner.

The perspectives of the key stakeholders i.e. CEO, CFO and directors must be taken into consideration when deciding upon the IT consumption within the organization.

The additional visibility through the model needs to determine the appropriate method of cost allocation in relation to the IT cost burden. Thus, the allocation model that is chosen needs to be both flexible and at the same time avoid being too complex in nature. The organization can either opt for a simple method of dividing the entire IT cost by the number of hours consumed by each department or a more complex but accurate method of ABC costing could be used for allocation of the costs based upon the associated cost drivers associated with each set of activities. Documentation of the current state

The next step involves documentation of the current state of the IT department implemented within the organization in order to identify gaps and potential weaknesses identified in relation to the current state for the purpose of identification of the appropriate pain points as well as identification of areas for potential automation Delineation of target business architecture

Once the current state of the IT architecture has been documented, the next step is developing target business architecture for the purpose of addressing the gaps and limitations identified and laying down the foundation with regards to the formation of the crux of the IT cost management framework. Decision: Build v/s Buy

The last step understands whether the framework built is bought or custom built internally. The answer to the question involves a great amount of brainstorming and research taking into consideration the view point of all the strategic stakeholders involved.