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COSTING

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CHART REVISION + Q&A SERIES

CHP 5 ACTIVITY BASED COST

ULTIMATE CA

CA PRANAV POPAT

Theory Chart

Chp5 Activity Based Costing

CA. Pranav Popat

TRADITIONAL APPROACH OF CHARGING OVERHEADS

Absorption Costing

Method	In this method of costing, below are the steps: • Total Factory overheads are first allocated/ apportioned to departments/ cost centers • OH of Service Cost Centers/ Departments are reapportioned to Production Cost Centers • Finally, Department-wise absorption rates are derived to absorb overheads to the jobs, units etc. on the basis of direct labour hrs, machined hrs. etc.
Limitations	• Pooling of cost into functional department is not always logical. • Absorption rates here assume that products that take longer to make, generate more overheads and so on. • This approach do not distribute overheads with detailed accuracy.

ACTIVITY BASED COSTING

Methodology

In this method of costing, below are the steps:

- ABC is a technique which involves identification of cost with each cost driving activity and making it as the basis for apportionment of costs over different cost objects/ jobs/ products/ customers or services.
- This enables resources & overhead costs to be more accurately assigned to products & services that consume them.

Need of ABC

- Growing Overhead Costs in the current business scenario due to high usage of machines. This requires detailed attention to the overhead costs.
- High competition in the manufacturing industries necessitates more accuracy in costs.
- Growing Multi-product and Multi Business Organizations
- Decreasing Costs of costing calculations using IT (cheaper information processing)

Suitability of ABC

- **High amount of overhead:** When production overheads are high and form significant costs, ABC is more useful than traditional costing system.
- **Wide range of products:** ABC is most suitable, when, there is diversity in the product range or there are multiple products.
- **Presence of non-volume related activities:** When non-volume related activities e.g. material handling, inspection set-up, are present significantly and traditional system cannot be applied, ABC is a superior and better option.
- **Stiff competition:** When the organisation is facing stiff competition and there is an urgent requirement to compute cost accurately and to fix the selling price according to the market situation, ABC is very useful. ABC can also facilitate in reducing cost by identifying non-value-adding activities in the production process that might be a suitable focus for attention or elimination.

Terms

Activity	Event that incurs cost
Cost Object	Item for which separate cost measurement is required. Example: product, job, projects, customers, departments etc.
Cost Driver	Factor that causes change in cost of an activity. Example: no. of inspections, no. of orders, no. of hours spent on project, no. of customer, no. of meetings etc.
Cost Pool	Group of various cost items that have similar cause and effect relationship with a cost driver. Example: Payroll taxes, fringe benefits, canteen expenses etc. related to a cost driver No. of Employees

Advantages of ABC

- More accurate costing of products/services.
- Overhead allocation is done on logical basis.
- It enables better pricing policies by supplying accurate cost information.
- Utilizes unit cost rather than just total cost
- Help to identify non-value added activities which facilitates cost reduction.
- It is very helpful for organization with multiple products.
- It highlights problem areas which require attention of the management

Limitations of ABC

- Expensive as compared to traditional
- Not helpful for small organization, or firm having limited range of products
- Selection of cost driver may become challenging

Examples of Cost Drivers

Business Functions	Cost Driver
Research and Development	Number of research projects, Personnel hours on a project
Design of products, services and procedures	Number of products in design, Number of parts per product, Number of engineering hours
Customer Service	Number of service calls, Number of products serviced, Hours spent on servicing products
Marketing	Number of advertisements, Number of sales personnel, Sales revenue
Distribution	Number of units distributed, Number of customers

STAGES IN ACTIVITY BASED COSTING

Identify the different activities within the organization

- Practically in a factory, there are many activities (say 200) but to practically use ABC we need to group them into 30-40 major activities.
- However, in Absorption usually there are very few cost centers (say 5 to 10)
- Hence, the additional number of activities at cost centres means that ABC is more accurate than the traditional method regardless of anything else.
- Examples of few activities:
  - Assembling
  - Inspection
  - Supervising
  - Machine Set Up
  - Ordering

Relate the overheads to the activities

- Linking amount of overheads to each activity
- Formation of Cost Pools or Cost Buckets
- We relate the overheads to any activity by checking causality.
- **Causality**: Cause of incurrence of Cost
- Example: Ordering Cost is caused due to placing of purchase orders hence here ordering cost is overhead cost and placing of orders is an activity to which it is related

Determine the activity cost drivers

- Now we need a number i.e. resource quantity of activity that drives the consumption of that activity.
- **For Example:** Placing of Orders can be measured by no. of orders placed

Calculate activity cost driver rates for each activity

- It is similar to calculating absorption rate
- We need to calculate cost driver rates for each activity using the below formula
- Formula:

$$\text{Activity Cost Driver Rate} = \frac{\text{Total Cost of Activity}}{\text{Activity Driver}}$$

- The activity cost driver rates will be multiplied by the different amounts of each activity that each product/other cost object consumes.
- Note: The activity driver rate can be used not only to identify cost of products, as in traditional absorption costing, but it can also be used for costing other cost objects such as customers/customer segments and distribution channels. The possibility of costing objects other than products is part of the benefit of ABC.

Some Examples of Activity and their Cost Driver

Activity	Cost Pool	Cost Driver
Ordering and Receiving	Ordering and Receiving Materials cost	Number of purchase orders
Setting up of Machine	Setting up related machines costs	Number of set-ups
Running of Machine	Machining costs	Machine hours
Assembling semi-finished goods	Assembling costs	Number of parts
Inspection	Inspecting and testing costs	Number of tests
Painting	Painting costs	Number of parts
Supervision	Supervising Costs	Direct labour hours

Stages in ABC

LEVEL OF ACTIVITIES UNDER ABC METHODOLOGY/ COST HIERARCHY

These categories are generally accepted today, but were first identified by Cooper (1990). The categories of activities help to determine the type of activity cost driver required.

Level of Activities	Meaning	Example
Unit Level Activities	These are those activities for which the consumption of resources can be identified with the number of units produced.	• The use of indirect materials/consumables tends to increase in proportion to the number of units produced. • The inspection or testing of every item produced, if this was deemed necessary or perhaps more likely every 100th item produced
Batch Level Activities	The activities which are performed each time a batch of goods is produced. The cost of batch related activities varies with number of batches made, but is common (or fixed) for all units within the batch.	• Material ordering – where an order is placed for every batch of production • Machine setup costs – where machines need resetting between each different batch of production • Inspection of products where the first item in every batch is inspected rather than every 100th item quoted above
Product level activities	These are the activities which are performed to support different products in product line	• Designing the product • Producing parts specifications • Keeping technical drawings of products up to date
Facilities level activities	These are the activities which cannot be directly attributed to individual products. These activities are necessary to sustain the manufacturing process and are common and joint to all products manufactured	• Maintenance of buildings • Plant Security

DIFFERENCE BETWEEN ABC AND ABSORPTION

Basis	ABC (Modern)	Absorption (Traditional)
Related to	Activities	Cost Centers/ Depts.
Accuracy	More realistic	Less Realistic
Cost Drivers	Multiple – Activity wise	Few – Machine hour or Labour hour (Mainly time based)
Recovery Rates	Multiple – Activity wise	Either single or two for each dept.
Cost assignment to	Any Cost Objects (includes cost units also) e.g. products, customers, depts, etc.	Limited Cost Objects e.g. products, jobs, hours
Useful in Cost Control	Unnecessary activities can be eliminated by analyzing each activity in detail.	There is no option of elimination as the costs are at department level.

REQUIREMENTS IN ABC IMPLEMENTATION

Staff Training	The co-operation of the workforce is critical to the successful implementation of ABC. Staff training should be done to create an awareness on the purpose of ABC.
Process Specification	Informal, but structured interviews with key members of personnel will identify the different stages of the production process, the commitment of resources to each, processing times and bottlenecks.
Activity Definition	The activities must be defined clearly in the early stage in order to manage the problems, if any, effectively. There might be overloading of information from the new data, but the same is needed in codification.
Driver Selection	Cost driver for each activity shall be selected.
Assigning Cost	A single representative activity driver can be used to assign costs from the activity pools to the cost objects.

PRACTICAL APPLICATIONS OF ABC

As a decision making tool

- ABC along with some other cost management technique can be utilized to improve performance and profitability of an organization.
- Wholesale distributors can gain significant advantage in the decision making process through implementation of ABC concepts by correlating costs to various activities. Introduction of new product or vendor can be better decided through ABC.
- ABC can assist in decisions related to facility and resource expansion. Often the basis for relocation or opening of a new distribution center is based on cost associations. Reduction in freight or other logistic costs can offset the expense of the new facility, staff or equipment. The ABC model can identify the specific cost elements being targeted, providing a much clearer picture which aids in management actions.
- ABC augments decision support for human resources. Since the activity (and therefore costs) can be associated to an individual, new levels of financial performance can be determined. This might be evident in the case of branch management or sales.
- Companies who wish to determine price based on cost plus markup basis find ABC method of costing very relevant and are able to determine competitive prices for their products.

Facilitate Activity Based Budgeting

- **Meaning of Activity Based Budgeting (ABB):**
  - Activity based budgeting analyse the resource input or cost for each activity.
  - It provides a framework for estimating the amount of resources required in accordance with the budgeted level of activity.
  - It is a planning and control system which seeks to support the objectives of continuous improvement.
  - It means planning and controlling the expected activities of the organization to derive a cost-effective budget that meet forecast workload and agreed strategic goals.
  - ABB is the reversing of the ABC process to produce financial plans and budgets.
- **Key elements of ABB:** Type of work to be done, Quantity of work to be done, Cost of work to be done
- **Benefits of ABB**
  - Activity Based Budgeting (ABB) can enhance accuracy of financial forecasts and increasing management understanding.
  - When automated, ABB can rapidly and accurately produce financial plans and models based on varying levels of volume assumptions.
  - ABB eliminates much of the needless rework created by traditional budgeting techniques.

As Activity Based Management

- The use of ABC as a costing tool to manage costs at activity level is known as Activity Based Management (ABM).
- ABM is a discipline that focuses on the efficient and effective management of activities as the route to continuously improving the value received by customers.
- Various **Steps involved** in ABM are as follows:
  - Cost Driver Analysis: The factors that cause activities to be performed need to be identified in order to manage activity costs. Cost driver analysis identifies the causal factors.
  - Activity Analysis:
    - Value-Added Activities (VA): The value-added activities are those activities which are indispensable in order to complete the process.
    - Non-Value-Added Activities (NVA): The NVA activity represents work that is not valued by the external or internal customer. It can adversely affect costs and prices.
  - Performance Analysis: Performance analysis involves the identification of appropriate measures to report the performance of activity centres or other organisational units, consistent with each unit's goals and objectives.
- Activity Based Mgt. can be **used in Business** in the following ways
  - Cost Reduction: ABM helps the organisation to identify costs against activities and to find opportunities to streamline or reduce the costs or eliminate the entire activity, especially if there is no value added.
  - Business Process Re-engineering: Business process re-engineering involves examining business processes and making substantial changes to how organisation currently operates.
  - Benchmarking: Benchmarking is a process of comparing ABC-derived activity costs of one segment of company with those of other segments. It requires uniformity in measurement of their costs.
  - Performance Measurement: Many organisations are now focusing on activity performance as a means of facing competitors and managing costs by monitoring the efficiency and effectiveness of activities. See example below:

Area	Measure
Quality of purchased component	Zero Defects
Quality of output	% yield
Customer awareness	number of complaints