ACTIVITY BASED COSTING & CPA

Chapter 01

Problems with traditional absorption costing

▶ Traditional absorption costing is based on the principal that production overheads are driven by the level of production.

▶ This is reflected in the choice of activity level in the overhead absorption rate (OAR) calculation - typically units, labour hours or machine hours.

▶ These all increase as the level of production increases. This was true in the past, because businesses only produced one simple product or a few simple and similar products.

▶ However, the following points are significant:

Problems with traditional absorption costing conti..

▶ Overheads used to be small in relation to other costs in traditional manufacturing

In addition, production overheads, such as machine depreciation, will have been a small proportion of overall costs. This is because production was more labour intensive and, as a result, direct costs would have been much higher than indirect costs. A rough estimate of the production overhead per unit was therefore fine.

▶ Overheads are now a larger proportion of total costs in modern manufacturing

Manufacturing has become more machine intensive and, as a result, the proportion of production overheads, compared to direct costs, has increased. Therefore, it is important that an accurate estimate is made of the production overhead per unit.

▶ The nature of manufacturing has changed.

Many companies must now operate in a highly competitive environment and, as a result, the diversity and complexity of products has increased.

Calculating the full production cost per unit using ABC

Step 1: Group production overheads into activities, according to how they are driven.

▶ A cost pool is an activity which consumes resources and for which overhead costs are identified and allocated.

▶ For each cost pool, there should be a cost driver. The terms 'activity' and 'cost pool' are often used interchangeably.

▶ For example, one activity could be "quality control" and "no. of inspection" could be cost driver.

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Step 2: Identify cost drivers for each activity, i.e. what causes these activity costs to be incurred.

▶ A cost driver is a factor that influences (or drives) the level of cost.

▶ For example, we could argue that the cost of quality control is driven by the number of inspections made, rather than the total number of units produced

Step 3: Calculate an OAR for each activity.

▶ The overhead absorption rate (OAR) is calculated in the same way as the absorption costing OAR. However, a separate OAR will be calculated for each activity, by taking the activity cost and dividing by the cost driver information.

▶ For example, we could determine a cost per inspection for quality control costs.

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Step 4: Absorb the activity costs into the product.

▶ The activity costs should be absorbed back into the individual products.

▶ For example, if we know how many inspections were made on product X then we can absorb a corresponding quantity of quality control costs.

Step 5: Calculate the full production cost per unit and/ or the profit or loss.

▶ Total activity costs can them be added to labour and material costs as normal.

Cost pools and drivers

Cost pool / Activity	Possible cost driver
Ordering cost	No. of orders
Material handling cost	No. of production runs
Machine set up cost	No. of machine set-ups
Machine operating cost	No. of machine hours
Production sheduling cost	No. of production runs
Despatching cost	No. of despatchers

Advantages of ABC

▶ ABC provides a more accurate cost per unit. As a result, pricing, sales strategy, performance management and decision making should be improved.

▶ It provides much better insight into what drives overhead costs.

▶ ABC recognises that overhead costs are not all related to production and sales volume.

▶ In many businesses, overhead costs are a significant proportion of total costs, and management needs to understand the drivers of overhead costs in order to manage the business properly. Overhead costs can be controlled by managing cost drivers.

▶ It can be applied to derive realistic costs in a complex business environment.

▶ ABC can be applied to all overhead costs, not just production overheads.

▶ ABC can be used just as easily in service costing as in product costing.

Disadvantages of ABC

▶ ABC will be of limited benefit if the overhead costs are primarily volume related or if the overhead is a small proportion of the overall cost.

▶ It is impossible to allocate all overhead costs to specific activities.

▶ The choice of both activities and cost drivers might be inappropriate.

▶ ABC can be more complex to explain to the stakeholders of the costing exercise.

▶ The benefits obtained from ABC might not justify the costs.

▶ Other systems may need to be changed - for example, how variances are calculated.

CUSTOMER PROFITABILITY ANALYSIS

Customer profitability analysis

▶ Customer profitability analysis uses an activity based approach to relate revenues and costs to groups of customers in order to assess their relative profitability.

▶ Customer profitability analysis (CPA) is 'the analysis of the revenue streams and service costs associated with specific customers or customer groups'.

▶ Marketing departments should be aiming to attract and retain profitable customers but in order to do this they need to know which customers are profitable and how much can be spent on retaining them. The costing system should provide the necessary answers.

▶ Customer profitability analysis (CPA) provides important information which allows an organization to determine both which classes of customers it should concentrate on and the prices it should charge for customer services. Its use ensures that those customers contributing sizeably to the profitability of the organization receive a comparable amount of attention from the organization.

Customer revenue and cost

▶ Customer revenues are cash flows from customers. They are influenced by different factors, mainly allowances and discounts.

▶ Different customers use different amounts of activities, it is possible to build up costs for individual customers or groups of customers on an activity basis so that their relative profitability can be assessed. Therefore ABC system can be used to calculate the cost of the customer.

Activity	Driver
Order taking	No. of order taken
Sales visit	No. of sales visit
Emergency orders	No. of rushed orders
Delivery	KMs travelled
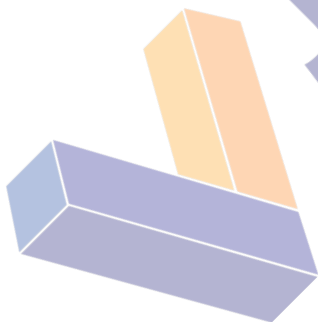
Activity Based Management

Activity based management

- **Activity based management (ABM) is an approach to management that aims to** improve profitability by reviewing the activities of the business. **Actions based on** activity driver analysis that increase efficiency, lower costs and improve asset utilisation.
  - Operational ABM – Activity driver analysis in day to day activities as to improve the efficiency and asset utilization, eliminate non-value added activities.
  - Strategical ABM – Which product to be developed and which customer to be maintained.
- ABM analyses costs on the basis of cross-departmental activities and thus provides management information on why costs are incurred and on the output of the activity in terms of cost drivers.

Activity based management

Traditional Analysis of cost	ABM Analysis of cost
Salaries	Preparation of quotation
Stationery	Receipt of customer orders
Travel	Assessment of customer credit worthiness
Telephone	Expedition of orders
Equipment depreciation	Resolution of customer problems

Activity based management

Value-added and non-value-added activities

▶ An activity may increase the worth of a product or service to the customer; in this case the customer is willing to pay for that activity and it is considered **value-added. Ex. Insurance brokers arrange a risk analysis for a client, production time.**

▶ **Some activities, though, simply increase the time spent on a product or** service but do not increase its worth to the customer; these activities are **non value-added. Ex. Insurance brokers arrange a dinner for a client, product transferring time, Time waiting for the production (idle time), product inspection time.**

ABM (Cost driver analysis)

Classification level	Cause of cost	Types of cost	Cost driver
Unit level	Production/acquisition of a single unit of product or delivery of a single unit of service	Direct materials Direct labour	Units produced
Batch level	A group of things being made, handled or processed	Purchase orders Set-ups Inspection	Batches produced
Product level	Development, production or acquisition of different items	Equipment maintenance Product development	Product lines produced
Facility sustaining level	Some costs cannot be related to a particular product line; instead, they are related to maintaining the buildings and facilities. These costs cannot be related to cost objects with any degree of accuracy and are often excluded from ABC calculations for this reason.	Building depreciation Organisational advertising	None - supports the overall production or service process

ABM (Performance Evaluation)

▶ ABM involves employees in improvements. This means it encourages and rewards employees for developing new skills, accepting greater responsibilities and making suggestions for improvements in plant layout, product design and staff utilization.

▶ Activity volumes provides an indication of capacity utilization. Reducing the volume of activity should be investigated.

▶ Difference of times spent on the different customer orders will lead to identify the non-value added activities.

▶ By viewing each of the activities in the value chain as a supplier-customer (RM to FG) relationship, the opinions of the customers can be used to provide useful feedback on the **quality of the service provided by the** supplying activity.

▶ **Cost driver rates (such as cost per set-up) can be communicated in a format** that is easily understood by all staff and can be used to motivate managers to reduce the cost of performing activities (given that cost driver rate activity level = cost of activity).

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