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| Chapter 17 Outline  1. **Overhead Cost Allocation Methods –** Manager decisions involvingproduct pricing, product mix, and cost control depend on accurate product cost information. Product costs consist of direct labor, direct materials, and overhead (indirect costs). Overhead costs cannot be traced to units of product in the same way that direct labor and direct materials can. Overhead costs are allocated using one of three methods: plantwide overhead rate method, departmental overhead rate method, or activity-based costing method. 2. Plantwide Overhead Rate Method and Departmental Overhead Rate Methods:    1. Use volume-based measures like direct labor hours or machine hours to allocate overhead costs*.* 3. Plantwide method uses a single rate and departmental rate uses at least two rates. 4. Activity-based costing focuses on activities and their costs and typically uses more overhead rates than plantwide and departmental methods. 5. **Plantwide Overhead Rate Method** 6. Plantwide Overhead Rate Method—uses one overhead rate to allocate overhead costs. 7. Target of cost assignment, cost object, is the unit of product. 8. Rate is determined using a volume-related measure such as direct labor hours or machine hours. 9. Applying Plantwide Overhead Rate Method:   a. Total budgeted overhead costs are divided by the allocation base such as total budgeted direct labor hours to get the plantwide overhead rated.  b. Rate used to allocate overhead costs to products based on the actual amount of allocation base used.  c. Use per unit overhead cost to compute product cost per unit.  **III. Departmental Overhead Rate Method**   1. Departmental Overhead Rate Method – uses multiple overhead rates which can result in better overhead cost allocations and improve management decisions. 2. Uses a different overhead rate for each department and follows a three-step process:    1. Assign budgeted overhead cost to department cost pools.    2. Select an allocation base and compute an overhead allocation rate for each department.    3. Allocate overhead costs to cost objects.    4. Use per unit overhead cost from this method to compute product cost per unit.    5. Both the plantwide and departmental overhead rate methods have three strengths:   a. Use readily available information like direct labor hours or machine hours.  b. Are easy to implement.  c. Comply with GAAP and can be used for external reporting.  6. Both the plantwide and departmental overhead rate methods have a weakness: overhead cost is often too complex to be explained by factors such as direct labor hours or machine hours.  7. Plantwide Overhead Rate Method: usefulness depends on two assumptions:  a. Overhead costs change with the allocation base.  b. All products use overhead cost in the same proportions.  c. For companies with many different products or products that use overhead cost in different ways, the assumptions of the single plantwide rate are not reasonable.  d. When overhead cost bears little relation to the allocation base, this method can distort product cost and lead to poor managerial decisions.  8. Departmental Overhead Rate Method: two assumptions:  a. Different products are similar in volume, complexity, and batch size  b. Departmental overhead costs are proportional to the departmental allocation base.  c. When products differ in batch size and complexity, they usually consume different amounts of overhead cost which can distort product costs.  d. Because this method allocates overhead cost based on measures closely related to production volume, it fails to accurate assign many overhead costs that are not driven by production volume. |
| 1. **Activity-Based Costing** |
| Activity-Based Costing (ABC) assigns overhead cost by focusing on activities.  1. Unlike plantwide method, ABC uses more than a single rate and unlike departmental method, ABC focuses on activities rather than departments.  a. Basic principle is that **activities**, which are tasks, operations, or procedures, cause overhead cost to be incurred.  b. Examples: production setups, machine usage, fabrication, design, assembly, and inspections.  c. ABC follows three steps:  d. 1. Identify activities and assign budgeted costs to activity cost pools.  e. 2. Compute overhead activity rate for each activity cost pool.  f. 3. Allocate overhead costs to cost objects (products).  A**.** Step 1: Identifies individual activities, grouped into cost pools.  1. Activity cost pool is a group of costs that are related to the same activity.  2. Activity cost driver is a factor that causes cost of an activity to go up or down.  3. Examples: factory maintenance, cleaning, and utilities.  B. Step 2: Computes an activity rate for each cost pool.  1. Overhead activity rate computed as: budgeted activity cost divided by budgeted activity usage.  C. Step 3: Allocates overhead cost to products.  1. Multiply products actual usage by the activity rate by multiplying actual activity usage by the activity rate.  D. Total product cost per unit can then be computed. |
| E. Comparing Overhead Cost Allocation Methods:  1. ABC emphasizes activities and their costs, which can better reflect how overhead cost is used in making products.  2. Plantwide and departmental methods do not capture products’ different use of activities and can distort overhead cost allocations.  3. With plantwide and departmental methods, low-volume complex products are often undercosted, and high-volume simpler products are often overcosted.  4. More accurate allocation leads to better product pricing and product mix decisions.  **V. Activity Levels and Cost Management**   1. Activity Levels—activities can be separated into four levels:   1. *Unit level activities*—performed on each unit. Costs tend to change with the number of units produced.  2. *Batch level activities*—performed only on each batch or group of units. Costs do not vary with the number of units, but with the number of batches. 3. *Product level activities*—performed on each product line and are not affected by either the number of units or batches. Costs do not vary with the number of units or batches. 4. *Facility level activities*—performed to sustain facility capacity as a whole and are not caused by any specific product. Costs do not vary with number of units, batches, or product lines produced.   1. Activity-based management (ABM) outgrowth of ABC that uses the link between activities and costs for better management. Can help distinguish value-added activities which add value to a product from non-value-added activities, which do not. 2. Advantages of Activity-Based Costing    * 1. More Effective Overhead Cost Control—can be used to identify activities that can benefit from process improvement by focusing on activities.      2. Better Production and Pricing Decisions—can provide more accurate overhead cost allocation which allows managers to focus production activities on more profitable products to more accurately set selling prices. 3. Disadvantages of Activity-Based Costing    * 1. Costly to Implement and Maintain ABC. Requires thorough analysis of cost activities and cost drivers which can be expensive.      2. Product Cost Distortion. Even with ABC, product costs can be distorted because 1. when costs cannot be readily classified into cost pools and 2. When cost drivers do not have a strong cause-effect relation with the costs.   3. Not Compliant with GAAP. Cannot be used for external financial reporting purposes under GAAP.  **VI. ABC for Service Providers**   1. ABC applies to service providers who classify cists by activity levels. 2. Typical Activity levels include unit level, batch level, service level and facility level. 3. Steps include:    1. Identify activities and their budgeted overhead cost.    2. Compute overhead activity rate for each activity.    3. Allocate overhead cost to cost objects. |
| VII. Decision Analysis: Customer Profitability.  1. ABC can be used to allocate selling, general and administrative costs to products and determine profitability of individual customers. 2. Customer profitability report can be prepared to show the income per customer. |