Cost allocation

Business, Management

Cost allocation for indirect costs Cost Pool – Set of costs that are added together before being allocated to cost objects on some common basis Cost Driver/ Allocation base Cost Object Cost Driver Rate = Total Costs in Pool/ Total Quantity of Driver Where total quantity of driver = practical capacity of driver Cost of excess capacity = Cost Driver Rate * Excess capacity Predetermined overhead rate - cost per unit of the allocation base used to charge overhead to products. Predetermined overhead rate= Estimated overhead/Estimated allocation base One-stage allocation system Single cost pool – Entire manufacturing overhead * Single allocation base / cost driver- Direct materials cost/ Direct labor hours/ Direct labor cost/ Machine hours/ etc. * Predetermined Overhead Rate or Burden rate = Total manufacturing overhead / X * Where X = Total Direct materials cost or Total Direct labor hours or Total Direct labor cost or Total machine hours used * Total product costs of A = Direct materials cost + Direct labor cost + allocated overhead cost where allocated overhead = Burden rate * # of machine hours used by A

Disadvantage: Assumes that all products consume direct labor (or other driver) and overhead in the same proportion. Two-stage allocation system and Product Costing Overhead costs are divided into different cost pools. Each cost pool has a cost driver (allocation base). * Split manufacturing overhead into more than one cost pool (e. g. create 2 cost pools whose costs add up to total manufacturing overhead cost) * Calculate burden rate Cost pools| Cost Drivers|

Overhead related to direct materials| Direct materials Cost| Overhead related to direct labor hours| Direct labor hours| Overhead related to direct labor

cost| Direct labor cost| Overhead related to machine-hours| Machine hours| Advantage: * Provides most accurate cost information * Cost system captures differences in the way overhead is consumed in different parts of the production process Disadvantage: * Cost of the system redesign may be high. The selection of an optimal cost system is based on trade-offs between increased accuracy and the cost of system redesign.

Predetermined Overhead Rate or Burden rate = Overhead cost related to direct materials/ Total Direct materials cost OR Overhead cost related to direct labor hours/ Total Direct labor hours OR Overhead cost related to direct labor cost/ Total Direct labor cost OR Overhead cost related to machine hours/ Total machine hours used Total product costs of A = Direct materials cost + Direct labor cost + allocated overhead cost where allocated overhead = Burden rate per machine hour * # of machine hours used by A + Burden rate per direct labor $ * direct labor cost of A

Departmental overhead rate - Rates based on a department's direct and indirect overhead costs and some measure of the department's activity, such as the department's machine hours. Departmental rates are more accurate than plant-wide rates when a company manufactures diverse products requiring a variety of processes. Allocate overhead on a plantwide basis using machine hours – Burden rate per machine hour = total overhead costs of all departments/ total machine hours used by all departments

Allocate overhead using department rate with machine hours as the allocation base - Burden rate per machine hour = Overhead costs of a department/ Machine hours used by that department Activity Based Costing 1. Identify activities, and identify overhead costs for each activity 2. Identify

the cost drivers for each activity 3. Compute cost driver rates (cost per driver unit)= activity overhead cost/ total driver volume 4. Allocate costs to cost objects Overhead costs allocated to A = cost driver 1 rate * cost driver 1 volume for A + cost driver 2 rate * cost driver 2 volume for A

ABC Costs and Benefits Costs are very high if: • You have a large number of activities, none of which dominate • You do not know/understand your activities • Your activities are changing quickly and dramatically • You do not have any sort of ERP system in place Benefit: * Detailed Cost break-down at activity level can manage costs at activity level, or charge customers for their activity use * More accurate information * Flexibility in Choice of Cost objects * Flexibility in Types of Companies/Organizations this works for such as Product companies, Services, Non-profits

Symptoms of faulty accounting system • The outcome of bids is difficult to explain • Customers do not complain about price increases • Competitors' prices appear unrealistically low • Profit margins are hard to explain • Products those are difficult to produce show high profits • Operational mgrs want to drop products that appear profitable • Some departments are using their own accounting system • The accounting department spends a lot of time on special projects • Product costs change because of changes in financial reporting Regulations

Common Cost Allocation Systems Plantwide/Company-wide Cost System (" Peanut-Butter") - Typically 1 cost pool – " burden rate" based on 1 cost driver (1 stage…) Department Allocation Method - Typically 1 cost pool per department – cost driver for each department (testing rooms in Seligram) 2-stage Cost System with Logical Cost Pools - Typically at least 1 cost pool per

department, but might split more carefully (For example, what if Seligram’s electronic and mechanical testing had all been in 1 room?) Direct cost can be directly traced to specific cost objects, in an economically feasible way. Example: direct materials, direct labor, etc. * One-stage costing system (“ Peanut butter”): pool all indirect costs together, use a single cost driver. inaccurate. * The Seligram case: in the original costing system, “ burden was grouped into a single cost pool”, they use a single cost driver “ testing and engineering labor dollars” * Two-stage costing system: first stage, costs are traced/allocated to cost pools (at least two).

Second stage, costs are allocated from cost pools to cost objects using cost drivers. * The more cost pools, the more accurate your cost numbers, but the more costly to track. * The Seligram case: the costing system proposed by the accounting managers is a two-stage system. * Stage 1: burden is traced to two pools: (1) burden related to admin and technical functions; (2) all other burden costs * Stage 2: pool 1 will be charged on a rate per direct labor dollar. Pool 2 would be charged based on machine hours. Sometimes firms are already using two-stage costing, but they need to add new cost pools. * Add a new category * Divide current pool into subcategories * The formula for cost driver rates: total costs in pool / total quantity of driver * Activity-Based Costing system: 1 cost pool for each major activity performed in the company. * Idea is that resource usage is homogeneous within each activity, so the allocation is more accurate. * Disadvantage of ABC system: costly. * When NOT to use ABC system: when activities change quickly, when there is no ERP system in place