Chapter solutions assignment

Costs may vary not only with respect to volume of production, but also, for example, with batch-related activities (e. G. , changeovers, setups, and inspection of the first item of production UN) and the number of products (e. G. , scheduling materials receipts and improving products). Also, cost distortions tend to be greater with greater differences been relative proportions of indirect resources used by cost objects because traditional cost assignments based on volume-related measures do not accurately reflect these differences.

S-volume-based traditional product costing systems that use only drivers that direct labor hours, or machine hours-? are most likely to distort product costs under the following two conditions: (1) Indirect and support expenses are high, specially when they exceed the cost of the allocation base itself (such as direct labor cost); and (2) Product diversity is high: the plant produces both high- volume and low-volume products, standard and custom products, and complex and simple products.

The combination of these two conditions will magnify the distortions that arise because volume-based product costing systems do not accurately reflect differences in non-volume-related resource usage across products or Other cost Objects. Activity-based costing systems provide more accurate costs when these two notations hold by creating more accurate links been the causes of indirect and support costs and the bases for assignment of the costs to cost objects.

For example, costs may vary not only with respect to volume of production, but also activities such as changeovers, setups, and inspection of the first

item of production run, which are not done in proportion to the number of units produced. Moreover, some costs vary with the number of different products (e. G. , scheduling materials receipts and IR-involving products). - eyes, traditional costing systems are more likely to overcast high-volume reduces because all indirect and support costs are assigned to products in proportion to the number of production units (through volume-based cost drivers), and the low-volume products are likely to require higher indirect and support costs per unit.

The high-volume products essentially cross-subsidize the low-volume products in the sense that indirect and support costs are assigned uniformly in proportion to volume. 5-companies producing a varied and complex mix Of products require many more resources to support their highly varied mix, and therefore have higher costs.

Examples Of the greater resources required include a much larger reduction support staff to schedule machine and production runs; perform changeovers and setups between production runs; inspect items at the beginning of each production run; move materials; ship and expedite orders; develop new and improve existing products; negotiate with vendors; schedule materials receipts; order, receive, and inspect incoming materials and parts; and update and maintain the much larger computer-based information system. - AAA significant change in resource costs triggers an update of the capacity cost rates. A significant and permanent change in operations, such as the efficiency tit which an activity is performed, triggers an update of the unit time estimate. If new activities become part of operations, the time to perform the activity will be estimated and then multiplied by the appropriate

capacity cost rate to determine the cost of the activity. -the two sets of parameters that must be estimated in time-driven activity- based costing are 1) the capacity cost rate for each type of indirect resource; that is, the unit cost Of supplying capacity for each department or process, based on practical capacity, and 2) the consumption of capacity, which is an estimate of owe much Of a resource’s capacity (such as time or space) is used by the activities performed to produce the various products, services, or customers.

To compute a capacity cost rate, first identify all costs incurred to supply that resource (such as a machine, an indirect production employee, the computer system, factory space, a warehouse, or a truck). Then, identify the capacity supplied by that resource. The capacity would be the hours of work provided by the machine or production employee, or the space provided by the warehouse or truck. For most resources (people, equipment, and machines), capacity is assured by the time supplied. The resources capacity cost rate is calculated by dividing its cost by the capacity it supplies, usually expressed as a cost per hour or cost per minute.

For warehouses, production space, and trucks, the capacity cost rate would be measured by cost per square toot (or square meter) to usable space. V-or computer memory, the resource capacity cost rate would be the cost per megabyte or gigabyte. 5-managers use the information on activity costs to identify’ opportunities for operational improvements and reductions in operations costs, decisions about reduce mix and pricing, and targeted customer segments. An example of an operational change is requiring minimum order sizes to eliminate short, unprofitable production runs.

Another example is changing the facility layout to reduce moves of fork in progress. Product designs can be changed in order to manufacture products with fewer parts or common parts to reduce material handling support COStS_ Finally, as discussed in more detail in Chapter 6, if activity-based cost analysis shows that full-pallet shipments are less costly per unit than partial-pallet shipments, customers can be encouraged to receive full- allot shipments. Of course, customers who insist on very small order sizes or partial-pallet shipments can be charged a price high enough to cover the extra costs associated with such activities. -the capacity cost driver rate should reflect the underlying efficiency of the process-? for example, the cost of resources to handle each production order-? and this efficiency is measured better by using the capacity of the resources supplied (practical capacity) as the denominator when calculating capacity cost driver rates. The numerator in a capacity cost driver rate calculation represents he costs of supplying resource capacity to do work. The denominator should match the numerator by representing the quantity of work the resources can perform. Unassigned costs represent the cost of Linseed capacity and should be used as feedback to managers on their supply and demand decisions, 5- immediate financial improvement may not follow even after process improvements reduce the demand for indirect and support resources. This is because the support costs are often committed The organization must actively manage the unused capacity by increasing the volume of business or reducing he supply Of unused resources. 5-10 Service organizations are often ideally suited for activity-based costing because virtually all Of the costs for a service company are indirect and appear to be fixed.

The large component of apparently fixed costs in service companies arises because, unlike manufacturing companies, service companies have virtually no material costs-? the prime source of short-term variable costs. Service companies must supply virtually all of their resources in advance to provide the capacity to perform work for customers during each period. Fluctuations during he period of demand by individual products and customers for the activities performed by these resources do not influence short-term spending to supply the resources. -11 As mentioned in 5-10, virtually all the costs for a service company are indirect and appear to be fixed. Service companies have few or no direct materials and many oftener personnel provide indirect, not direct, support to products and customers. Consequently, service companies do not have direct, traceable costs to serve as convenient allocation bases. Unlike physical products, services cannot be inventoried for future Service impasses must supply virtually all their resources in advance to provide the capacity to perform work for customers during each period, and demand often fluctuates.

For some service industries, the increase in spending resulting from an incremental transaction or customer is essentially zero. Therefore, service companies making decisions about products and customers based on short-term variable costs might provide a full range Of all products and services to customers at prices near zero, leading to little recovery of the costs of all the committed resources supplied in order to deliver services to customers. It can be difficult to identify and measure the outputs for a service organization.

The variation in demand for organizational resources is much more customer-driven in service organizations than in manufacturing organizations, A service company can determine and control the efficiency of its internal activities, but customers determine the quantity of demands for these operating activities. For example, customers may vary greatly in the number of transactions and the balances in their checking accounts. Service companies must focus on customer costs and customer profitability: measuring revenues and costs at the customer bevel provides service companies with far more relevant and useful information than at the product level.

Finally, a customer may have multiple relationships with a service company. Therefore, the cost system should provide information that supports determining profitability of the entire relationship with the customer. Customer costs and customer profitability are discussed in more detail in Chapter 6. 5-12 Individuals may feel vulnerable facing uncertainty about what the activity- based cost analysis may show, or they may feel threatened by the suggestion that their work could be improved.

For example, the analysis might reveal that products or customers thought to be very profitable are actually unprofitable, or that some processes are inefficient. Individuals may be concerned that they will then be judged as poor managers, even though they were making decisions that others would agree were good decisions based on the cost system in place. 5-13 Time-driven activity-based costing has a number of advantages over traditional activity-based costing.

The advantages include (1) It is easy and fast to build an accurate model even for large enterprises; (2) It exploits the detailed orientations data that are available from ERP systems; (3) It drives costs to transactions and orders with time equations that use specific characteristics of particular orders, processes, suppliers, and customers; (4) It provides visibility to capacity utilization and the cost of unused capacity; (S) It enables managers to forecast future resource demands, allowing them to budget for resource capacity on the basis of predicted order quantities and complexity; and (6) It is easy to update the model as resource costs and process efficiencies change.

EXERCISES 5-14 Potter Corporation should switch to activity-based costing because its rent system appears to be distorting product costs, resulting in prices of specialty products that are too low (hence increasing their market share) and prices of simple products that are too high (thus, lowering their market share). This, in turn, leads to lower overall profitability as Potter pushes products that, in reality, produce low profit margins or even lose money. 5-15 (a) The time-driven BBC model will now incorporate a capacity cost rate for computer resources, computed as 518, 000 divided by the practical capacity computer hours per month. Usage of computer resources can be measured in imputer time per product or production run. (b) Before the machinery energy costs were discovered, the machinery rate was computed as $15, 400 divided by 308 practical capacity hours, which equals $50 per hour.

The energy costs of $4, 000 per month will be added to the $15, 400 monthly machinery costs, for a new machinery resource cost of 519, 400 per

month, leading to a higher rate per hour. The new rate is $19, 400/308 – $62. 99, which can be rounded to $63 per hour for convenience. (c) If the company introduces a new flavor, the new flavors consumption of direct and indirect resources will need to be estimated and then multiplied by he appropriate cost or cost rate, gore example, start with the quantity of direct materials and labor hours per gallon produced, and multiply these amounts by the related cost per unit of direct materials and wage rate, respectively. Next, estimate the quantity of indirect labor (for changeovers, scheduling and product maintenance) and machine time (for production runs and setups).