

IMPLEMENTING THE ACTIVITY BASE COSTING SYSTEM: A CASE STUDY ON DAKOTA OFFICE SUPPLY

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Overview

Activity Based Costing (ABC) is an accounting method that allows an organization to determine actual costs associated with each product and/or service produced by the organization without regard to the organizational structure or other extraneous function. For Dakota Office Products (DOP), its existing costing system was inadequate because it is incapable of accounting for even all of the known costs such as the desktop delivery service as well as hidden costs such as the 10% DOP paid to maintain its working capital line of credit for accounts receivable (Kaplan, 2003, p.4). Since ABC is a powerful tool for measuring performance, identifying, describing, and assigning costs to, and reporting on an organization's operations it could solve much of DOP's critical cost oversights (Caplan, Melumad & Ziv, 2005). Used holistically ABC can be utilized to also improve processes and identify opportunities to improve business effectiveness and efficiency by determining the true or real costs of a given product or service. ABC principles are used to focus management's attention on the total cost to produce a product or service, and as a basis for full cost recovery of a production or service process.

Situational Analysis

DOP is a regional office supply company with a strong reputation for customer service and quality supplies. Additionally, DOP is unafraid to adopt new service operations such as its "desk top" delivery option which delivered smaller orders directly to individual sites as well as its traditional commercially delivered mass orders to customer distribution sites (Kaplan, 2003, pp.1-2). Additionally DOP deployed an Electronic Data Interchange (EDI) solution in order to ease data and payment transfer from and to customers as well as building a customer website that acts an order and account interface for its customers. Together these initiatives all expanded DOP's customer service and quality metrics but also came with a cost which the company had difficulty identifying. While exact costs were difficult to ascertain for DOP it is clear that the company is incurring expenses in a manner that it previously had not since its EBIT (earnings before interest & taxes) for fiscal year 2000 revealed a -1.3% loss (Kaplan, 2003, p.4). Since the company did not actually break down costs in order to arrive at a more accurate pricing schedule but instead relied only on a universal 15% markup over basic material costs, DOP had absolutely no way of being

able to identify where the cost inefficiencies were in its operations.

Activity Based Costing

Traditional product costing such as DOP employs was designed for an industry comprised of companies having one-type (homogenous) of product, large direct (fixed) costs, very few data collection techniques and fewer data analysis tools, and low below line costs. By contrast, contemporary industry exhibits a highly diversified product/service mix as evidenced by DOP's employment of both commercial delivery methods and its new customized individually oriented delivery model accompanied by high overhead costs as compared to fixed labor costs, a mass amount of data with countless ways to analyze it, and considerable non-product, indirect, or hidden costs affecting overall pricing, costs and expenditures.

ABC is a system of accounting based on the allocation of resources and accounting for the value of those resources in relation to a specific task or activity. In this sense, labor and direct material costs lose the prominence that they are given in traditional costing systems and are accounted for as any other resource is accounted for. Activities such as sales, support, or other business processes are largely excluded. This is not the case in ABC because all the various functions, activities, and support processes of a company are broken down into pools of resources with a particular value attached to them. For example, developing a cost-driver rate for DOP would involve basing an estimate on an approximate 80% capacity rate to employees. For example, a cost-driver for DOP related to warehouse operations is 4,400,000 annually which

would be divided by the number of cost-drivers such as order set-up, order entry, order validation, receiving, handling, packaging, loading, and delivery and the result would be the cost per occurrence of the cost-driver rate: \$550k. This figure is then divided by the total number of instances these actions occurred which, as reported by DOP was 80k during 2000 and so the cost-driver the year would be \$6.87 per activity on average. This figure would be used to identify unprofitable accounts such as the customer A and B mentioned in the case where customer A and B both generated approximately \$100k in annual revenues and based on customer A's 21.2% markup this would mean that \$78,800 represented the COGS (cost of goods sold) while the cost-driver would indicate that \$10,992 went towards the associated activity costs which would mean that customer A's profitability is \$10,208. By contrast, customer B's profitability is lower. Based on the same assumptions customer B's COGS is \$77,600 while the cost-driver would be factored with an extra activity per carton and thus would be \$12,366 plus the \$3,000 to carry its accounts receivable balance resulting in a profitability of \$7,034. Because of the additional activities associated with customer B and the hidden cost of carrying its accounts receivable balance, customer B is less profitable with the same overall revenues as customer A. While it is difficult to identify limitations in this ABC methodology with respect to these particular customers it could be argued that the goodwill created by the additional services for customer B will result in longer service and greater orders in the future.

Recommended Application at DOP

ABC in Practice at Dakota

Before performing ABC, a baseline or a starting point is needed for business process improvement and a baseline can be expressed in some form of model. This baseline is critical for DOP because in order to establish this baseline metric the analytics just performed must be done for each individual account. If DOP performs this activity on each customer the strategic management benefits would be substantial because all the excess cost-drivers could be eliminated resulting in much wider operating margins and thus profitability without increasing costs or committing resources to gain this efficiency. Therefore, a baseline is a documentation of the organization's policies, practices, methods, measures, costs and their interrelationships at a particular location at a particular point in time (Maiga & Jacobs, 2003). Through base-lining, activity inputs and outputs across functional lines of business can be identified. ABC is the only improvement methodology that provides output or unit costs. Value added activities are those for which the customers are usually willing to pay in some fashion for the product or service. Non-value added are activities that create waste, result in a delay of some sort, and potentially adds costs to the products or services. Resources are assigned to activities so that the activities can be performed in the first place. Some of Pilgrims' resources are measured in man-hours, machine hours as well as machine maintenance and operational overhead. It is through ABC that an organization can begin to see actual dollar costs against individual activities, and find opportunities to streamline or reduce those costs, or even eliminate the entire activity thus removing the cost altogether. This is the process inherent in

ABC that reduces overall expenditures of the company.

Procedural Steps of ABC

Some typical steps in implementing an ABC program are often defined as five activities that must occur if a true cost accounting is to take place within the confines of an ABC operation. These five activities are typically listed as (Latshaw & Cortese-Danile, 2002): 1) Analysis of activities, 2) Cost gathering, 3) Associating costs with activities, 4) Baseline output metrics, and 5) Cost analysis. These steps should be performed by an integrated team of cost accountants, floor managers, and project managers that have been committed by top management to work on the ABC project within DOP. Yet, the cost savings could be enormous. For example, by identifying the previous cost-drivers it is apparent that a simple migration of all customers over to the internet based ordering and billing system approximately 9,500 man hours can be removed from the current order fulfillment process resulting in a cost savings of at least \$142,500 in labor alone not to mention efficiencies gained in the order fulfillment process where the cost-driver rate could be reduced by the removal of an activity which would amount to approximately \$515,250 or a total cost savings of \$657,750 annually. Considering DOP missed its earnings target by (470,000) this cost savings would actually return the company to profitability as the following chart reveals:

The straight blue line is revenue while the green line represents the direction profits are currently moving without ABC and the yellow line represents the direction it will move following the implementation of ABC. The pink line represents profits

should the company only cut costs without improving its cost-accounting methodology.

References

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