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# Understanding Costs in a Scientific Paradigm: ABM in Manufacturing (Specialty Chemical)

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*By David Woodworth*

With over 1,800 products in seven product groups, this US-based specialty chemical manufacturer needed to better understand cost and process flow information. The company's current costs seemed inaccurate as the company's competitors were able to be more competitively priced in certain market niches. Thus, a better understanding of costs was necessary to adapt to external market pressures.

## **Implementing ABC/ABM**

The manufacturer, with over 250 employees in three plants, chose to pursue an ABM project in order to facilitate costing of products and provide greater direction on the origin of costs. The goal of the project was to identify company activities as they related to business processes so that they could embark on strategic and operational initiatives to remain competitive in certain market niches.

In order to "successfully" implement the ABM initiative, the company dedicated internal personnel from cross-functional departments to lead and champion the project. Those employees came from the marketing, sales, customer service, manufacturing, accounting, and research and development areas rather than manufacturing only. The CFO, devoted half of his time to moving the project forward with the assistance of the

Arthur Andersen Business Consulting team.

This entire process received executive support from a cross-functional group of senior managers serving on a steering committee. Even though the company has been successful with their ABM initiative, it has been a struggle to keep the cross-functional support. "It is a continuing education that does not start and stop with the initial project," said the CFO.

## **The ABC/ABM Initiative**

The ABC/ABM initiative has been an iterative process over the last three years. The objectives of the initial project were to:

- provide detailed product cost and process flow information;
- provide key strategic decision making information;
- identify cost drivers or causes of cost; and
- transfer ABC knowledge to management and employees.

The initial project began by reviewing the organization and its history of analyzing costs. Cost centers as well as cost objects such as projects and product families, were then identified. Using that information, the team defined activities, processes and cost drivers; identified employee time to activities; and assigned non-labor costs to activities. An ABM model that

evaluated essential activities and assigned activity costs to cost objects was then developed for 12 primary departments and 23 sub-departments. The scientific paradigm was that you needed details, details, and more details to support your position. Team members identified 700 activities and 90 processes that involved sales and marketing, research and development, production, and delivery of the chemical products. Management and employees also gained insight in understanding what generates cost by identifying 54 cost drivers. An example of several cost drivers includes:

<b>COST DRIVERS</b>
# of Line Items on Purchase Orders
# of Pounds Sold or Produced
# of Customers
# of Invoices

The majority of data collection was facilitated by departmental interviews and surveys, which were conducted companywide. These interviews which are more detailed and strive for a higher level of understanding, drive understanding of departmental activities to the task level and provide more accurate estimates of how people spend their time and how other resources are consumed by activities.

### **The Results**

Using an ABC/ABM approach, the company developed a much better assignment of overhead costs. The cost management project, which forced a thorough investigation of product and process costs, identified an average difference of 126% from the cost measured under traditional means and paved the way for streamlined processes.

Many of the inaccuracies of the traditional system arose with the assignment of identical overhead allocations to all products and processes rather than to the activities that generated the cost. According to the CFO, "Activity-based costing allowed us to move from a 'peanut butter' approach for assigning overhead costs to a more strategic assignment of overhead allocations. Now, rather than spreading the costs throughout, we are able to effectively assign allocations to products and processes."

The ABC/ABM information has opened the eyes of management, allowing them to see a more accurate product costs and gain a better understanding of where costs are originated and how improvements can be made to the process to reduce time, lower cost or improve service to their customers. "It has been a struggle over the last three years, but we have learned a great deal from our mistakes and successes, and it was worth the effort for us to go through this endeavor," said the company's CFO.

Even though detailed activity analysis was performed (e.g. value-added versus non value-added analysis), the ABM information was not directly utilized to support specific process improvements. This was due in part to the lack of education on how to sift through the mounds of ABM information to apply improvements, and in part to the lack of a champion to start identifying and implementing improvements.

### **An Evolving Model**

In the three years since the ABC model has been incorporated, use of the model information has increased. With the initial ABM model, the project objectives were somewhat general:

provide detailed product costs, process flow information, product and customer profitability, and strategic decision making information. The current initiative, which focuses on the ABC viewpoint, incorporates the cost information to develop a model to assist in identifying resource allocations, fixed and variable resources, and contribution margin analysis. The company was able to ascertain what costs are fixed versus variable (both labor and non-labor) and to use the information to determine contribution margins. Using EasyABC Plus, management was able to process the complex fixed versus variable costs study.

The key difference between the current model and the previous one is the effort to create a simple model that is dynamic, flexible, and easy to use. For example, the current model streamlines the number of activities from 1,200 to 150 and cost drivers from 60 to 20. In addition, sales and marketing personnel are working hand in hand with accounting in conducting interviews, providing quality assurance on the model accuracy, developing cost drivers and quantities, and developing deliverables.

With the ABC model continually refining, the company is poised to face the changes in today's competitive environment. This understanding of costs throughout the organization is key in reducing costs and accurately identifying where to invest the company's resources.

### **Lessons Learned**

Through this entire process, the biggest challenge was to convince management that ABC is a tool and that it is not a panacea for the company to solve all of its costing problems. The other

challenge was receiving buy-in from management and setting realistic and clear expectations.

Some of the key benefits and lessons learned during the last three years include:

- Creation of a tool and a mindset to understand costs.
- An effective model must evolve and be refined to remain useful.
- To truly understand costs, the model should include a cross-functional perspective and identify departmental requirements rather than a view of manufacturing alone.
- Infrastructure--internal support, cross-functional team, continuous education-- is necessary to keep the model alive.
- It is important to keep management and key user buy-in and to listen to their needs and expectations.
- ABC is not a panacea but rather a tool to enhance decision making.
- Keep it simple! More may not make you better off!!

### *Author Profile*

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