Activity Based Costing

"What are the ABC's of ABC?"

Written by
Henry Yennie
, L3 P Associates, LLC
www.L3P Associates.com

In an industry filled with acronyms, now we add another: activity-based costing or ABC. This article will examine the basics of ABC, particularly in relation to traditional costing methods, and look at how to begin an implementation of ABC in your organization.

Cost Data is important, as margins become slimmer and risks are increased, we must arrive at a stable, reliable, cost-finding and reporting methodology that not only gives us accurate data, but also places that data in the context of day-to-day business processes and service capacity.

First-ABC is only data, but someone must use the data effectively and creatively or the effort is a waste of time. Although ABC is only data, it can be very powerful and spark project teams or decisions makers to take new steps or draw innovative conclusions. In the sense just described, ABC is part of change management. ABC is also an enabler for continuous improvement and decision support. It makes tools such as just-in-time (JIT), total quality management (TQM), and business process redesign (BPR) more effective.

ABC originated in the manufacturing industry, and it is only now gaining acceptance in the health field. What makes ABC so fundamentally different from other cost-finding and cost accounting methods is its ability to recognize the causal relationships between resources (such as staff and computers), activities (the processes of an organization such as delivery of an hour of counseling) and cost objects (those things for which we are seeking a unit cost such as that hour of counseling, or the cost of serving a consumer). The establishment of this causal relationship and the method's basic links to an organization's business processes make the accuracy and usefulness of cost information produced by ABC significantly better than traditional systems.

ABC is currently not a financial reporting system designed to serve regulatory agencies such as the Internal Revenue Service or Securities Exchange Commission, but it will be in the future. ABC provides managerial information in financial metric form. Financial denominations, such as U.S. dollars, serve as measures for the language of business. ABC communicates dollars to non-financial managers better than traditional cost accounting does, because **ABC physically mirrors the activities** of people, machines, and equipment.

ABC communicates to people the rate at which activities consume resources as well as why the resources are used. People need to use common sense in implementing ABC's clear, relevant data, and then their understanding of the data will be enhanced; thus, ABC creates benefits.

What do traditional cost systems manage? The best illustration of how ABC differs from traditional costing method is to begin with a challenge. In the following example, we will use a fictitious intake unit of a social service agency. Your job as a manager of this department is to reduce costs by 10% as several contract renewals obtained by your agency resulted in lower revenues. In a traditional environment, the department manager would normally receive an income statement that might be similar to that below:

Traditional Intake Unit Cost Structure	
Labor	$250,000
Fringe Benefits	70,000
Supplies	50,000
Depreciation	60,000
Other Costs	32,000
Total	**$462,000**

As a manager charged with the task of cost reductions, the information provided by traditional systems doesn't offer much guidance. The foremost problem faced by the manager is the lack of information on the effect of any cost reductions. For example, it would be easy to focus a 10% cost reduction on "Labor." In so doing the manager runs the risk of degrading capacity such that existing and future demand can't be met. This dilemma highlights the fundamental shortcomings of traditional cost systems – they manage dollars, not business processes. Specifically, traditional cost systems suffer:

- Arbitrary allocations that can distort product and service costs.
- The lack of a relationship between the cost of a service and the actual effort expended to produce it.
- A lack of understanding by operational management
- A lack of focus on why costs occur
- Untimely, inflexible and overly complex information

ABC is fundamentally different from these traditional methods and has the following advantages:

- ABC delineates activity and process costs
- ABC highlights and assists in focusing on important costs
- ABC gives more accurate and reliable cost information
- ABC gives managers the ability to manage activities and business processes, not just dollars.

Taking that same cost data and organizing it within an ABC framework produces a very different report for the unit manager:

Activity-Based Intake Unit Cost Structure	
Receive & Process	$223,600

Referrals	
Process Intake	$114,400
Schedule Assessments	$73,200
Produce Reports	$50,800
Total:	$462,000

Armed with this sort of data, a manager is better equipped to address the organizational need for cost reductions. In our example, the ABC analysis of the intake unit reveals that 40% of the cost of the unit is consumed by receiving and processing referrals. Therefore as a manager, my cost cutting target of 10% is clearly defined, and an achievable, understandable target can be set and measured. To help you get started with ABC, think about the six key steps in the ABC process.

Step One: Identify Activities: Activity identification in work groups is best accomplished by interviewing those involved in doing the work. There are several things to remember when identifying activities for a business process:

Focus only on significant activities. Most workgroups have only 5-12 significant activities. Over 12 activities is too much detail. Too much detail makes the project overly complicated and difficult to maintain.

Use a verb noun sequence to describe activities such as the following:

- Receive referral
- Process Intake
- Schedule Appointment

Avoid having management staff identify activities. It has been our experience that management's view of the work process is often very different from what actually takes place. You can get the real picture only by interviewing line staff.

Step Two: Determine How Resources are Related to Activities: Once activities have been identified, the next major task is to determine how resources flow to activities. Remember these basic concepts:

- Resources are used (consumed) as activities are performed
- The relationship between resource costs and activities is called a "resource driver"
- Analyze the general ledger to determine how costs are currently reported

Once these relationships have been defined, both costs and utilization data must be collected to apply to the model. Much of the financial data can come from the general ledger and income statements, while some utilization data will often have to be collected if it is not routinely gathered by the organization. Questions to ask in quantifying the relationship between resources and activities include:

- How much time is spent performing each activity?
- What equipment is used to perform activities?
- Do some activities have dedicated equipment?
- Do some activities require more space than others do?

Then, when data on resources has been collected, the next step is to try to find cause and effect relationships between resources and activities or resources and cost objects. There are generally three methods of associating costs to activities:

Traced Costs - These are costs that can be traced directly to activities or cost objects based on specific, data (such as supplies).
Assigned Costs – These are costs that can be associated with activities or cost objects based on logical cause and effect relationship (suck as employee time spent on an activity or cost object).
Allocated Costs – These are costs that are associated with the activities or cost objects based on an estimate of how these costs are incurred. This method is used only as a last resort. One informal rule is that no more than 10% of all costs should be allocated. If the allocation exceeds this amount, then either the organization has excessive overhead, or there are missed opportunities for directly tracing or assigning costs.

Step Three: Calculate Activity Costs: The next step in the process is the calculation of activity costs. In our simple example, the intake unit, we used the following activities:
1. Receive referrals
2. Process Intake
3. Schedule Assessment
4. Produce reports

Based on interviews with staff and logical associations, we were able to assign the following drivers to the activities:

Resources	Resource Drivers
Labor	Employee Time %
Fringes	Employee Time %
Supplies	Actual Usage
Depreciation	Equipment Usage

The labor and fringe costs were logically assigned based on the amount of time staff spent on each activity. The supply costs were assigned based on directly tracing supply costs to each activity and depreciation and other costs were assigned based on logical assumptions. Given these cost assignments, we were able to produce the estimated cost per activity outlined on the following page.

Step Four: Identify Cost Objects: Next, we identify two major cost objects of interest:
1. Processing Internal Referrals (Basic demographic Information is currently on file)
2. Processing External Referrals (No data currently exists)

Interviews with the staff and our general observation of the intake unit indicated that there might be a significant difference in time and thus cost between processing a referral from an internal source versus an external referral source.

Step Five: Determine How Activities are Related to Cost Objects: Using the cost information and staff interviews we determined the following about these cost objects:

Percent of Time (Resource) Per Activity		
Item	Internal	External
% of Processing Time spent by staff	35%	65%
% of Time collecting Intake Data	10%	90%
Referral/Intake Volume	500	100

As we can see, staff spend a significantly higher percentage of their time collecting intake data from external referrals (brand new clients w/ no pre-existing data on file), which consisted of about 16% of the total referrals.

Step Six: Calculate Cost Objects Costs: The first step in calculating the costs of the internal and external referrals was the adjustment of the resource drivers as follows (Due to the size of the table, we are presenting only the Labor and Fringe drivers):

Summary of Cost and Percentage for Labor and Fringe for Resource Drivers/Activity

Resource/ Activity Drivers	Labor		Fringes		Percentages	
	External	Internal	External	External	External	Internal
Receive & Process Referrals	89,375	48,125	25,025	13,475		
Process Intake	60,750	6,750	17,010	1,890		
Schedule Assessment	18,200	1,800	5,096	504		
Produce Reports	22,750	2,250	6,370	630		
Total Costs	154,175	95,825	43,169	26,831		
Receive & Process Referrals					65%	35%
Process Intake					90%	10%
Schedule Assessment					9%	91%
Produce Reports					9%	91%

Combining all of the cost object costs into a summary table yields the following:

Summary of Total Cost of Processing Inpatient and Outpatient

Activity	Totals	External	Internal
Receive & Process Referrals	223,600	118,684	104,916
Process Intake	114,400	80,280	34,120
Schedule Assessment	73,200	66,612	6,588
Produce Reports	50,800	46,228	4,572
Total Costs	$462,000	$251,876	$210,124

As we suspected, the cost for processing an external claim is as much as ten times that of an internal claim. The analysis and remediation of this diparity fall into the realm of ABM, in which we attempt to answer the question, "What causes the external cost to occur at such a high level?" Further analysis may yield cost drivers that include information system problems, poor provider compliance, overly complex intake process for external referrals, etc.

In any case, our intake manager has powerful information for achieving the 10% cost reduction goal. In addition, the model developed can be replicated on a quarterly basis to measure results and continue to provide management with important and actionable information.

Conclusions

In short, ABC provides management with cost, utilization, and capacity information that is directly related to the business process of the organization. Unlike traditional financial statements and cost finding methodologies, it presents information in manner most managers can understand.

There is, however, one shortcoming inherent to the model described above, and it serves as a caution to organizations considering an ABC project. The model described did not give sufficient emphases to the "process" features and capabilities found in most ABC models primarily because it was constructed using a spreadsheet tool. This limited the analysis to what is referred to as a "Cost Decomposition" approach. It is strongly recommended that organizations use software specifically designed to for ABC modeling.

Cost and Percentage Per Activity

Activities	Labor	Fringe Benefits	Supplies	Depreciation	Other Costs
Receive & Process Referrals	137,500	38,500	20,000	18,000	9,600
Process Intake	67,500	18,900	5,000	15,000	8,000
Schedule Assessments	20,000	5,600	20,000	18,000	9,600
Produce Reports	25,000	7,000	5,000	9,000	4,800
Total Costs	$250,000	$70,000	$50,000	$60,000	$32,000
Receive & Process Referrals	55.0%	55.0%	40%	30%	30%
Process Intake	27.0%	27.0%	10.0%	25%	25%
Schedule Assessments	8.0%	8.0%	40%	30%	30%
Produce Reports	10.0%	10.0%	10%	15%	15%
Total Costs	100.0%	100.0%	100.0%	100.0%	100.0%

L^3 P Associates, LLC is a consulting firm with headquarters in Concord New Hampshire. L3 P Associates focuses on all aspects of behavioral health care and social service reform. They can be reached through their website at www.L3PAssociates.com or by calling at 603-224-4687.