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Removing the Blindfold with ABC/M

"Whoever is careless with the truth in small matters cannot be trusted with important matters."

—Albert Einstein, German-Swiss-American scientist[1]

INTRODUCTION

Imagine that you and three friends go to a restaurant. You order a cheeseburger and they each order an expensive prime rib. When the waiter brings the bill they say, "Let's split the check evenly." How would you feel?

That is how many products and service lines "feel" when the accountants take a large amount of indirect and support overhead expenses and allocate them as costs without any logic. There is minimal or no link that reflects a true relative use of the expenses by the individual products, service lines, or end-users. This is unfair. Activity-based cost management (ABC/M) "gets it right." It more fairly splits the waiter's check. Many ABC/M practitioners wish the word *allocation* never existed. It implies inequity to many people based on past abuses in their organization's accounting practices. The word *allocation* effectively means "misallocation" because that is usually the result. ABC/M practitioners will often say that they do not *allocate* expenses; instead they *trace and assign* them based on cause-and-effect relationships.

ABC/M can do much more than simply trace expenses and costs. It provides a tremendous amount of visibility for people to draw insights from and also use for predicting the possible outcomes of decisions. Many operations people cynically believe that accountants count what is easily counted, but not what counts. Outdated, traditional accounting blocks managers and employees from seeing the more relevant costs.

Important Messages for ABC/M Project Teams

It is a mistake for ABC/M project teams to refer to ABC/M as an improvement program or a change initiative. The ABC/M data are simply used as a means to an end. If ABC/M is described as an improvement program, it might be regarded by managers and employees as a fad, fashion, or "project of the month." ABC/M data make visible the economics of the organization and its consumption of resource expenses. Money is continuously being spent on organizational resources whether or not ABC/M measuring is present.

ABC/M is analogous to a physician's stethoscope, which allows a doctor to listen to one's heartbeat. Your heart is beating regardless of the presence of the stethoscope. Similarly, an organization is continuously burning up its resources through its activities into its outputs regardless of whether ABC/M is monitoring these events.

I am deliberately understating ABC/M for an important reason. In the early 1990s, when ABC/M was beginning to receive serious attention, the management consulting community began selling ABC/M engagements as consulting services. Unfortunately the consultants oversold ABC/M as a magic pill that could possibly solve all of an organization's problems (and perhaps solve world hunger, too). This raised management's expectations too high. If the consultants did not solve the problems that their clients engaged them for, some of those clients blamed ABC/M for not working. However, ABC/M worked just fine; some of the consultants just did not adequately understand how to interpret and use the data. Some did not know how to design and construct an effective ABC/M system. When one realizes that ABC/M is fundamentally good data to be used for understanding, discovery, and decision making, then it is better positioned for longer-term use and wider acceptance.

So I am deliberately managing expectations about ABC/M by reducing the perception that it provides all the answers. ABC/M restacks the costs; it does not root them out. ABC/M's data can be a great enabler for providing answers; the key word here is *enabler*. One controller I met referred to ABC/M as the ultimate question generator. He observed that, equipped with the ABC/M data, employees and managers frequently had reactions like, "What would explain or account for that?"

Organizational improvement is referred to by a variety of terms, among them total quality management (TQM) and business process reengineering (BPR). They all have one thing in common: a focus on continuing improvement of work and the pursuit of excellence in daily operations. Many of these programs emphasize the following:

- Management of processes rather than resources;
- Elimination of waste;
- Improvement to processes that results in better, faster, and cheaper services to customers; and
- Empowerment of employees to create change.

A common thread runs through all these improvement techniques: a focus on work activities and their relationship to services or products provided to customers.

The ABC/M data can turbocharge these types of popular performance improvement programs. It is inevitable that all organizations will eventually rely on some form of an ABC/M information system to assist in effectively managing their affairs. There is no reason to hype or overstate the power of ABC/M; it will continue to claim widespread global acceptance based on its merits and on the utility that the ABC/M information provides.

Organizational Shock from ABC/M

Ninety percent of ABC/M is organizational change management and behavior modifying, and 10 percent of it is the math. Unfortunately most organizations that implement ABC/M initially get those two reversed. They spend far too much time defining and constructing their ABC/M information system and very little time thinking about what their organization will do once they have their new ABC/M data. This is a huge problem.

This poor implementation habit has adversely affected the rate of adoption of ABC/M. When ABC/M systems fall short of manager and employee teams' expectations, it is usually because the initial ABC/M system design was substantially over-engineered. The typical initial ABC/M system is usually excessively detailed and is well past diminishing returns on extra accuracy for each incremental effort of work. One manager reacted to seeing the first ABC/M report by saying, "I feel like a dog watching television. I don't know what I'm looking at!" With a fraction of the effort and in a much shorter time frame, the implementation team could have started to produce results.

It is important to start getting results quickly from ABC/M because of the organizational shock that some managers and employees may experience when they receive the new ABC/M data. That is, it is important to start realizing what kind of new and possibly disturbing information might come from ABC/M.

When people see the ABC/M data for the first time, they will see things they have never seen before—and some of it will not be pretty. For example, there may be a product manager who for years believed that his or her products or service lines were the most profitable in the organization. But when ABC/M finishes more properly tracing the true consumption of expenses, that person's product or service line may appear much less profitable than it did under the traditional broad cost averaging scheme, and perhaps even unprofitable! That product manager will not be happy to see that information or whoever is reporting that information. Do not underestimate the level of resistance that can come from exposing managers and employees to the ABC/M data.

There is an important lesson here: Treat the ABC/M data responsibly. ABC/M is not an accounting police tool. It is an organization-wide managerial information system. Its data are not intended to embarrass anyone, and it should not be used to punish anyone. In many cases no one really knew what their true costs were. Many may have suspected that the existing expense and cost allocation was wrong, but they did not know what the correct calculations would

reveal. ABC/M finally gives managers and employee teams the hope that they can see the truth. But seeing the data and using the data are not the same thing. Much more thinking is required when it comes to using the ABC/M data for managing and decision making.

There is an old saying that all truth passes through three phases:

1. It is ridiculed.
2. It is violently opposed.
3. It is accepted as being obvious.

Whether dealing with the ABC/M methodology itself or the output data computed by the ABC/M system, keep the following in mind: There will be resistance to ABC/M, due to people being afraid not so much of change—although that is a factor—as of uncertainty. The irony is that ABC/M brings truth, but until the ABC/M data are revealed, people are not sure what it is going to show or how it might be used.

In short, even if an activity-based cost model is in place, do not expect ABC/M to follow automatically. Using the data is a hurdle.

Overhead Expenses Are Displacing Direct Costs

The direct laborers in organizations are the employees who perform the frontline, repeated work that is closest to the products and customers. However, numerous other employees behind the frontline also do recurring work on a daily or weekly basis. These employees' work is highly repeatable at some level, for example, a teller in a bank. Figure 1.1 is a chart that includes this type of expense plus the other two major expense components of any organization's cost structure, its purchased materials and its overhead.

Most organizations are experienced at monitoring and measuring the work of some of the laborers who do recurring work by using cost rates and standard costs. In the bottom layer of the chart is cost information that also reveals performance-related costs other than the period's spending, such as labor variance reporting. It is in this area of the chart, for example, that manufacturers use labor routings and process sheets to measure efficiency. These costs are well known by the name *standard costs*. Service organizations also measure this type of output-related information. For example, many banks know their standard cost for each deposit, each wire transfer, and so forth.

Problems occur in the overhead expense area appearing at the top portion of Figure 1.1. The chart reveals that over the last few decades, the support overhead expenses have been displacing the recurring costs. The organization already has substantial visibility of its recurring costs, but it does not have any insights into its overhead or what is causing the level of spending of its overhead. ABC/M can help provide for insights and learning.

In a bank, for example, managers and employee teams do not get the same robustness of financial information about the vice-presidents working on the sec-

A key to understanding ABC/M is to understand how cost behavior truly varies in relation to other factors.

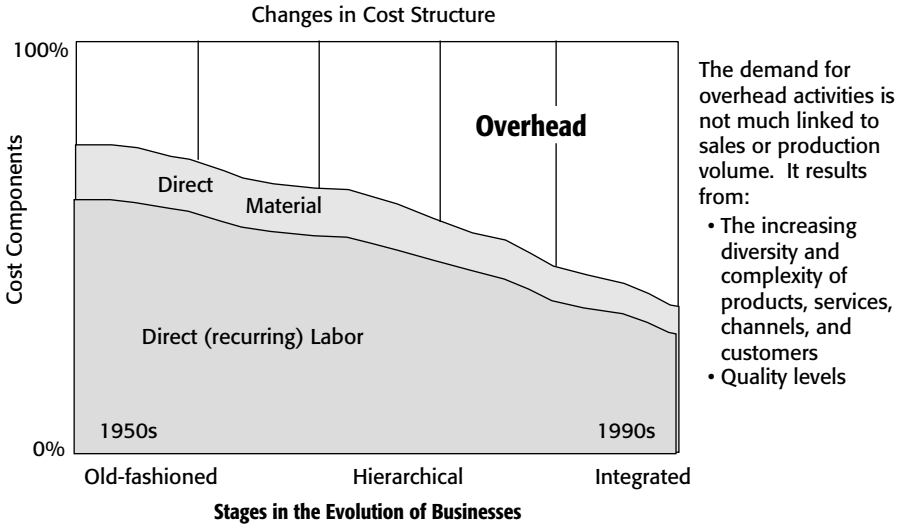

FIGURE 1.1 Overhead Costs Displacing Direct Costs

ond floor and higher up in the building as they do about tellers. The only financial information available to analyze the expenses of the vice presidents and other support overhead is the annual financial budget data. These levels of expenses are annually negotiated. The focus is on spending levels, not on the various cost rates. The expense spending is monitored after the budget is published. Spending is only monitored for each department or function for each period to see if the managers' spending performance is under or over their budget or plan.

ABC/M extends to the overhead the understanding and visibility of spending that is already applied to the recurring laborers. ABC/M can then become an organization-wide method of understanding work activity costs as well as the standard costs of outputs.

Impact of Diversity in Products, Service Lines, Channels, and Customers

When you ask people why they believe indirect and overhead expenses are displacing direct costs, most answer that it is because of technology, equipment, automation, or computers. In other words, organizations are automating what previously were manual jobs. However, this is only a secondary factor in the shift in organizational expense components.

The primary cause for the shift is the gradual proliferation in products and service lines. Over the last few decades organizations have been increasingly offering

a greater variety of products and services as well as using more types of distribution and sales channels. In addition, organizations have been servicing more and different types of customers. Introducing greater variation and diversity (i.e., heterogeneity) into an organization creates complexity, and increasing complexity results in more overhead expenses to manage it. So the fact that the overhead component of expense is displacing the recurring labor expense does not automatically mean that an organization is becoming inefficient or bureaucratic. It simply means that the company is offering more variety to different types of customers.

For those who may not be convinced by this explanation, go speak with an employee who has been in your organization a long time and is shortly due to retire. Ask him or her: "How thick was our product catalog when you joined the organization and how thick is it now? What types of customers did the founder serve at the inception of our organization and how many more types do we serve now?" The explanation for increasing overhead will become evident.

In short, the shift to overhead displacing direct labor reveals the cost of complexity. ABC/M does not fix or simplify complexity; the complexity is a result of other things. But what ABC/M does do is point out where the complexity is and where it comes from.

How long can organizations go on making decisions with the misinformation reported by their accounting systems? In the 1980s many organizations, reacting to the pressures from high-quality Japanese products, confessed that they had a "quality crisis." In the twenty-first century, organizations may realize that they have an "accounting crisis."

IF ABC IS THE ANSWER, WHAT IS THE QUESTION?

Growing Discontent with Traditional Calculation of Costs

Why do managers shake their heads in disbelief when they think about their company's cost accounting system? I once heard an operations manager complain, "You know what we think of our cost accounting system? It is a bunch of fictitious lies—but we all agree to them." It is a sad thing to see the users of the accounting data resign themselves to lack of hope. Unfortunately, many accountants are comfortable when the numbers all foot-and-tie in total and could care less if the parts making up the total are correct. The total is all that matters, and any arbitrary cost allocation can tie out to the total.

The sad truth is that when employees and managers are provided with reports that have accounting data in them, they use that information regardless of its validity or their skepticism of its integrity. Mind you, they are using the data to draw conclusions and make decisions. This is risky.

Imagine you were a roving reporter who asks managers and employee teams throughout your organization: "How happy are you with the existing financial and accounting data to support our decisions to improve our competitiveness? Thumbs up or down?" Many would give the data thumbs down. These people

have basic needs such as knowing where their organization makes or loses money. It is amazing, but for many organizations the most fundamental questions get the poorest answers—or no answers.

How can traditional accounting, which has been around for so many years, suddenly be considered so bad? The answer is that the existing data are not necessarily bad so much as somewhat distorted, incomplete, and unprocessed. Figure 1.2 shows the first hint of a problem. The left side shows the classic monthly responsibility-center statement report that managers receive. Note that the example used is the back office of an insurance company. This is to demonstrate that, despite misconceptions, indirect white-collar workers produce outputs no differently than do factory workers.

If you ask managers who routinely receive this report questions such as "How much of these expenses can you control or influence? How much insight do you get into the content of work of your employees?" they will likely answer both questions with, "Not much!" This is because the salary and fringe benefit costs usually make up the most sizable portion of controllable costs, and all that the manager sees are those expenses reported as lump-sum amounts.

When you translate those "chart-of-account" expenses into the work activities that consume the financial general ledger's expenses, a manager's insights from viewing the activity costs begin to increase. The right side of Figure 1.2 is the ABC/M view that is used for analysis and as the starting point for calculating the

Stating activities with an action verb-adjective-noun grammar convention creates an atmosphere for change by providing a new way of looking at something people are already familiar with, rather than something that is foreign.

From: General Ledger

Chart-of-Accounts View

Claims Processing Department

	Actual	Plan	Favorable/ (unfavorable)
Salaries	$621,400	$600,000	$(21,400)
Equipment	161,200	150,000	(11,200)
Travel expenses	58,000	60,000	2,000
Supplies	43,900	40,000	(3,900)
Use and occupancy	30,000	30,000	––
Total	$914,500	$880,000	$(34,500)

When managers get this kind of report, they are either happy or sad, but they are rarely any smarter!

To: ABC Database

Activity-Based View

Claims Processing Dept

Key/scan claims	$ 31,500
Analyze claims	121,000
Suspend claims	32,500
Receive provider inquiries	101,500
Resolve member problems	83,400
Process batches	45,000
Determine eligibility	119,000
Make copies	145,500
Write correspondence	77,100
Attend training	158,000
Total	$914,500

FIGURE 1.2 Language of ABC/M

Source: Gary Cokins, *Activity-Based Cost Management: Making It Work*, © 1996, McGraw-Hill. Reproduced with the permission of The McGraw-Hill Companies.

costs for both processes and diverse outputs. In effect, the ABC/M view resolves the deficiencies of traditional financial accounting by focusing on work activities. ABC/M is work-centric, whereas the general ledger is transaction-centric.

A key difference between ABC/M and the general ledger and traditional techniques of cost allocation (i.e., absorption costing) is that ABC/M describes activities using an "action-verb-adjective-noun" grammar convention, such as "inspect defective products," "open new customer accounts," or "process customer claims." This gives ABC/M its flexibility. Such wording is powerful because managers and employee teams can better relate to these phrases, and the wording implies that the work activities can be favorably affected, changed, improved, or eliminated. The general ledger uses a chart of accounts, whereas ABC/M uses a chart of activities. In translating general ledger data to activities and processes, ABC/M preserves the total reported revenues and costs but allows the revenues, budgeted funding, and costs to be viewed differently.

Notice how inadequate the data in the "chart-of-accounts" view are for reporting business process costs that run cross-functionally, penetrating the vertical boundaries of the organization chart. The general ledger is organized around separate departments or cost centers. This presents a reporting problem. For example, with a manufacturer, what is the true total cost of processing engineering change notices (ECNs) that travel through so many hands? For a service organization, what is the true cost of opening a new customer account?

Many organizations have been flattened and delayered to the extent that employees from different departments or cost centers frequently perform similar activities and multi-task in two or more core business processes. Only by reassembling and aligning the work activity costs across the business processes, such as "process ECNs" or "open new customer accounts," can the end-to-end process costs be seen, measured, and eventually managed. As a result of the general ledger's structure of cost center mapping to the hierarchical organization chart, its information drives vertical behavior, not the much more desirable process behavior.

In effect, using traditional cost systems, managers are denied visibility of the costs that belong to the end-to-end business processes. This is particularly apparent in the stocking, distribution, marketing, and selling costs that the traditional accounting "expenses to the month's period." With traditional cost allocations, these sales, general, and administrative expenses (SG&A) are not proportionately traced to the costs of the unique products, containers, services, channels, or customers that cause those costs to occur.

In summary, the general ledger view describes "what was spent," whereas the activity-based view describes "what it was spent for." When employees have reliable and relevant information, managers can manage less and lead more.

Drivers Trigger the Workload

Much more information can be gleaned from the right-side view. Look at the second activity, "analyze claims" for $121,000, and ask, what would make that cost

significantly increase or decrease? The answer is the number of claims analyzed. That is that work's activity driver. Figure 1.3 shows that each activity on a stand-alone basis has its own activity driver. At this stage the costing is no longer recognizing the organizational chart and its artificial boundaries. The focus is now on the work that the organization performs and what affects the level of that workload.

There is additional information. Let's assume there were 1,000 claims analyzed during that period for the department shown in Figures 1.2 and 1.3. The unit cost per each analyzed claim is $100 per claim. If a specific group of senior citizens over the age of 60 were responsible for half those claims, we would know more about a specific customer or beneficiary of that work. The senior citizens would have caused $60,500 of that work (i.e., 500 claims times $121 per claim). If married couples with small children required another fraction, married couples with grown children a different fraction, and so forth, ABC/M would trace all of the $121,000. If each of the other work activities were similarly traced using the unique activity driver for each activity, ABC/M would pile up the entire $914,500 into each group of beneficiary. This reassignment of the resource expenses would be much more accurate than any broad-brush cost allocation applied in traditional costing procedures and their broad averages.

The Cost Assignment Network is one of the major reasons that ABC/M calculates more accurate costs of outputs. The assignment of the resource expenses also demonstrates that all costs actually originate with the customer or beneficiary of the work. This is at the opposite extreme of where people who perform

In addition to seeing the "content of work," the activity view gives insights into what drives each activity's cost magnitude to fluctuate.

From: General Ledger

Chart-of-Accounts View

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Activity-Based View

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Write correspondence	77,100
Attend training	158,000
Total	$914,500

Activity cost drivers

← # of — (for each activity)

Products/customers

Fixed versus variable classifications get redefined with ABC/M.

FIGURE 1.3 Each Activity Has Its Cost Driver

"cost allocations" think about costs. Cost allocations are structured as a one source-to-many destinations redistribution of cost. But the destinations are actually the origin for the costs. The destinations, usually outputs or people, place demands on work, and the costs then "measure the effect" by reflecting backward through the ABC/M cost assignment network.

What Are Costs?

Although the two cost views, cost assignment and process, seem logical, people who design or use ABC/M systems often have difficulties deploying the power of these two views, because in practice they often confuse the two views. Part of the problem in defining and designing costing systems is understanding just what exactly *costs* are. What are costs anyway? Costs themselves are abstract and intangible. One cannot see costs or hold a couple of them in one's hands. Yet we all know they are there. Like an echo, we know they exist whether we measure them or not.

We know that costs increase or decrease as there are changes in the workload that affect the activity costs via their cost drivers. Work activities are triggered by events, and the costs react as the effect. In one sense, because costs are not tangible, ABC/M operates as "an imaging system" similar to radar, sonar, ultrasound, or an electrocardiogram. Just like a digital camera, ABC/M records an image.

Costs measure effects more than they illuminate root causes. However, ABC/M systems do provide an enterprise-wide image of all the collective effects plus the causal relationships that result in an organization's costs. So costs provide insights into root causes, but mainly through their inferences. This may sound ironic, but "cost management" can be considered an oxymoron (such as "jumbo shrimp" and "hospital food"). You do not really manage costs and financial results; that is like pushing a rope. You understand the *causes* (and drivers) of costs. Then you manage the causes. Cost management is accomplished by driver management.

So, in effect, an organization does not manage its costs: It manages *what* causes those costs to occur (i.e., its cost drivers) and the *effectiveness and efficiency* of the organizations' people and equipment to respond to those causal triggers.

When one designs a cost measurement system, that costing information is actually measuring something that, as mentioned, is intangible and invisible. In its own way, ABC/M "tangibilizes" data to represent things that most people believe are intangible.

To sum up, in one sense, the report on the left side of Figures 1.2 and 1.3 represents an "accounting police" command-and-control tool. Have you overspent your budgeted target? If you have, who says that budgeted target amount was fair when it was initially imposed? When managers receive the left-side responsibility center report, they are either happy or sad, *but rarely any smarter*. Today's competitive world will be dominated by "learning organizations," not ones that are straightjacketed by spending restrictions. The right side of Figures 1.2 and 1.3

restates those same expenses in a much more useful format and structure for decision support.

When expenses are expressed as activity costs they are in a format that makes it easy to trace them into outputs. This way employees can never say, "we could care less about what anything costs." People care more when they know what things cost and believe that the accuracy of those costs is reliable. Cost accounting is outside many individuals' comfort zones. ABC/M makes cost understandable and logical.

As ABC/M converts expenses into the calculated costs of work activities and their outputs, it starts making expenses appear more concrete. To aid in organizational learning, we as a society need to increase the representation of reality—and ABC/M is the foundation for that financial realm. The problem today is that when you have the wrong information coupled with the wrong measurements, it is not difficult to make wrong decisions.

ABC/M as a Translator, Not a Replacement for the General Ledger

Figure 1.4 uses the analogy of an optical lens to show how ABC/M serves as a *translator* of general ledger data to provide more focused information for improved decision support. The lens not only translates the ledger costs into a more useful and flexible format, it provides more sensory information. The data from the ABC/M lens can serve as an early warning detector that some resource level of spending may be out of alignment with the goals or strategy of the organization. For quality managers, ABC/M makes visible all the work related to the cost

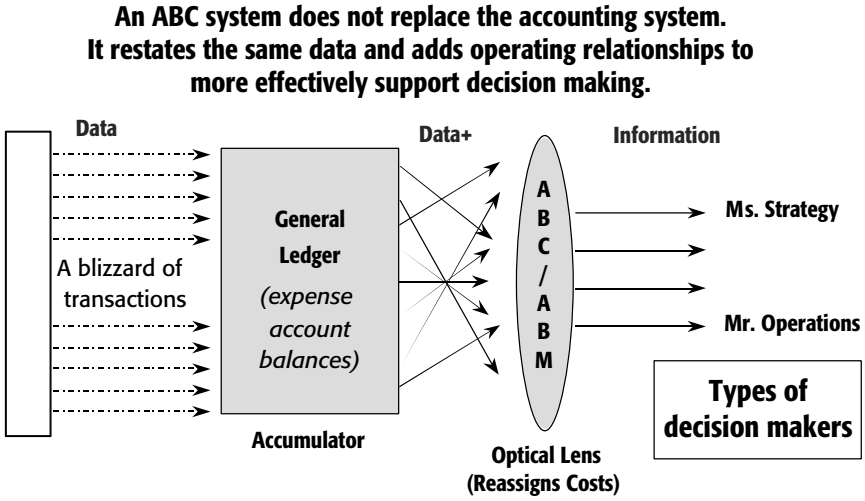


FIGURE 1.4 ABC/M Does Not Replace the Accounting System
Source: Gary Cokins, *Activity-Based Cost Management: Making It Work*, © 1996, McGraw-Hill. Reproduced with the permission of The McGraw-Hill Companies.

of quality (COQ). It reveals for them where quality-related costs are located and which outputs and products the COQ costs have gone into.

Figure 1.4 illustrates that ABC/M is not a replacement for the traditional general ledger accounting. Rather, it is a translator or overlay that lies between the cost account accumulators in the general ledger and the end-users, such as managers and analysts, who apply cost data in decision making. ABC/M translates expenses into a language that people can understand. It translates expense into elements of costs, namely the work activities, which can be more flexibly linked or assigned to business processes or cost objects based on demand-driven consumption patterns, not simplistic cost allocations. The reason ABC/M is becoming popular is that the general ledger is now recognized as being structurally deficient for delivering good business information for decision support. The general ledger is a sound mechanism for collecting and accumulating transaction-intensive costs but not for converting those costs into useful managerial information.

In the simplest terms, the general ledger acts like a checkbook; one can read the dollar amounts spent but not really know the what-fors and whys of any individual "check." And unfortunately the general ledger's largest "check" amounts are employee payroll-related, which gives managers virtually no visibility of the content of the employee work activities being performed. Furthermore, the payroll-related costs do not reveal the interrelationships between that work and other work or products and customer services. There are no insights into what events cause or drive work activity costs to vary. Because an organization's work activities are probably the most controllable costs that a manager or team can influence, these activities are critical to know and to understand.

In contrast to traditional accounting, ABC/M focuses on the work activities associated with operating a business or managing a not-for-profit organization. As previously mentioned, ABC/M is work-centric, whereas the general ledger is transaction-centric. Both have their place, but the general ledger's data are too raw to be considered business intelligence for decision support. ABC/M solves the general ledger's problem of unprocessed expenditure data. However, just translating the ledger account expenses into their work activities is an incomplete description of ABC/M. The total ABC/M picture comes from linking the activities into networks to calculate the cost of outputs for performing analysis, determining trade-offs, and making decisions.

Managing with a process view created a growing need for better managerial and costing data. Managing processes and managing activities (i.e., costs) go together. By defining a *business process* as comprising two or more logically related work activities intended to serve end-customers, the need for integrating processes, outputs, and measured costs becomes even more apparent as an important requirement for managers and teams. And the ABC/M Cross (discussed further in the following sections) provides a logical way to visualize and report on these linkages.

In summary, ABC/M resolves the general ledger's structural problem. With ABC/M, the general ledger account balances are first converted into activity costs.

Then ABC/M assigns the activity costs to cost objects or reassembles the activity costs across business processes. These new and transformed ABC/M cost data can be used to identify operating relationships that can be used effectively in making product, channel, market, and customer-oriented decisions. This ABC/M information can also be useful in managing processes and any quality-related issues within the processes. In all cases, ABC/M transforms the general ledger data into a different type of cost information that is more useful for decision making.

How Does Activity-Based Costing Compute Better Accuracies?

ABC/M was developed as a practical solution for problems associated with traditional cost management systems that we now realize are distorting and incomplete. Indirect expense and overhead cost allocation practices of traditional systems can bring more damage than good to organizations. In traditional costing the indirect expenses are usually too aggregated to serve any purpose, and these large groupings destroy any likelihood for calculating an accurate cost of any type of output.

The next problem with overhead cost allocations is that excessively broad-brush average cost rates are applied to calculate costs. Worse yet, the cost allocations usually rely on a sales-related, volume-based factor or basis, such as direct labor hours or department expenses. It may be an inputs-used or outputs-produced basis measure, but the basis usually will not accurately measure the segments of the total. This flawed basis for allocating costs rarely reflects the specific cause-and-effect relationship between the indirect overhead expense and the work output, part, product, service, channel, or customer (i.e., the cost object) that is actually consuming the cost. Many managers are tired of "allocation foodfights."

The result of inaccurate cost allocations, because allocating is a zero-sum error game, is that some cost objects are over-costed while the remainder are under-costed. In other words, as a consequence of unquestioned formula cost allocations, traditional financial accounting can grotesquely distort the true cost of products and service lines, which in turn can wildly distort their individual profit margins. Some refer to traditional cost allocation methods as "spreaders."

The ABC/M logical assignment of expenses and costs obliterates the use of simple averages as the basis for tracing costs. Figure 1.5 illustrates the impact of applying ABC/M rather than the traditional allocation. The diagram reveals ABC/M's "S-curve." The horizontal line represents the flawed costs that are calculated by a traditional standard costing system. These costs represent the belief system of the organizations. Many employees accept them as accurate strictly because the accountants report them. Other employees are suspicious.

In practice, one discovers that the under-costed products are substantially under-costed because these products may be low-volume with small lot sizes, require more technical attention, consume more handling, or need extra inspection. ABC/M removes the distortions from simplistic cost allocations. An allocation-free

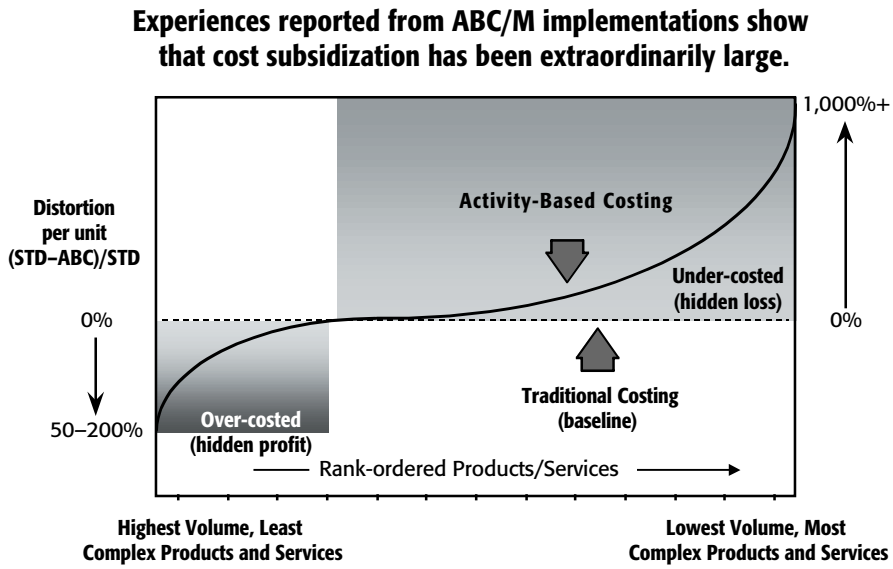


FIGURE 1.5 Product and Service Cost Distortion

cost system is like a smoke-free environment: no pollution. In short, don't allocate, prorate. In the end, ABC/M is like bringing in the "myth grenades" that blow up the old flawed beliefs and replace them with real facts.

Defending the Status Quo

Some accountants defend their simplistic allocations as adequate for product and service-line costing. They may have been so in the past. The use of volume-based allocations will provide reasonably accurate calculated costs when the following conditions exist:

Few and very similar products and service lines.
Low overhead expenses.
Homogeneous conversion processes.
Homogeneous channels, customer demands, and customers.
Low selling, distribution, and administrative expenses.
Very high margins.

How many organizations possess those characteristics? Hardly any today. Perhaps simple cost allocations worked when Henry Ford was producing thousands of Model-T automobiles, all black—and with minimal indirect and overhead costs. But not anymore.

In effect, we have allowed the accounting profession to construct a costing scheme that distorts reality and violates variable costing, as a manager understands it. The ultimate problem is that companies are actually losing money on certain

products, orders, services, and customers when their accounting systems state that they are profitable. And since the price quotation practices usually rely on the same flawed cost data, quoting unprofitable orders to potentially unprofitable customers is perpetuated with the illusion that the quoted orders are profitable.

ABC/M corrects for these flaws by identifying the work activities that are responsible for costs. It provides a cost flow assignment network, which allows the work activity costs and their output costs to be continuously reassigned, or passed on only if the products, services, or customers, or in some cases other work activities, actually use the activity. This condition of consumption and use is what sets ABC/M apart from traditional cost allocation schemes. Figure 1.6 is a popular diagram called the ABC/M Cross.

The ABC/M Cross reveals that work activities, which are located in the center intersection of the cross, are integral to reporting both the costs of processes and the costs of cost objects. *Cost objects* are the persons or things that benefit from incurring activity costs; examples are products, internal or external customers, stakeholders, and outputs of internal processes. Cost objects can be thought of as *to what and for whom work is done*. Figure 1.7 lists the questions that the vertical cost assignment view answers.

The vertical cost assignment view explains what specific things cost, whereas the horizontal process view, which some refer to as ABM, explains what causes costs to exist and to fluctuate.

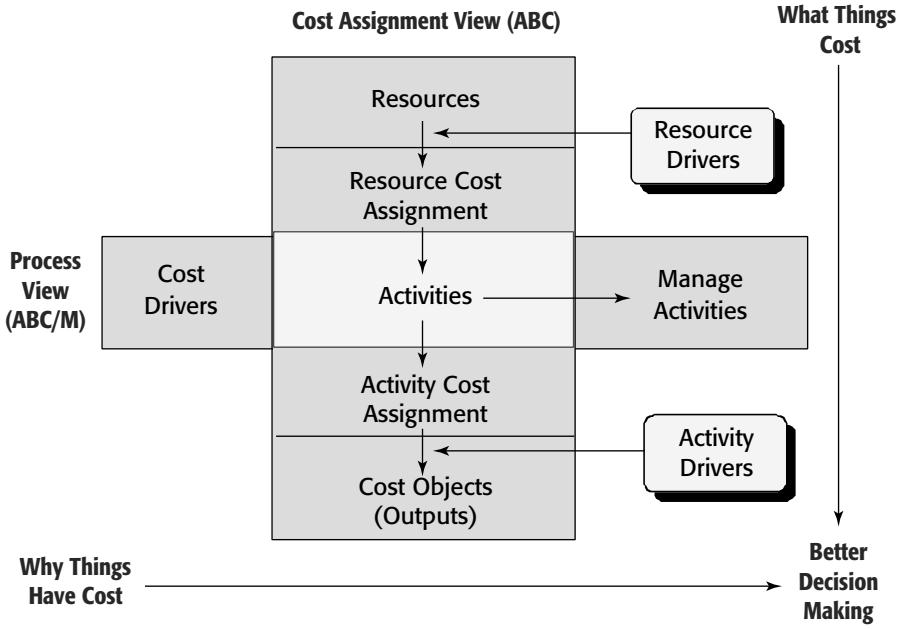


FIGURE 1.6 Activity-Based Cost Management Framework
Source: The Consortium of Advanced Manfacturing–International (CAM-I), 1990. Used with permission.

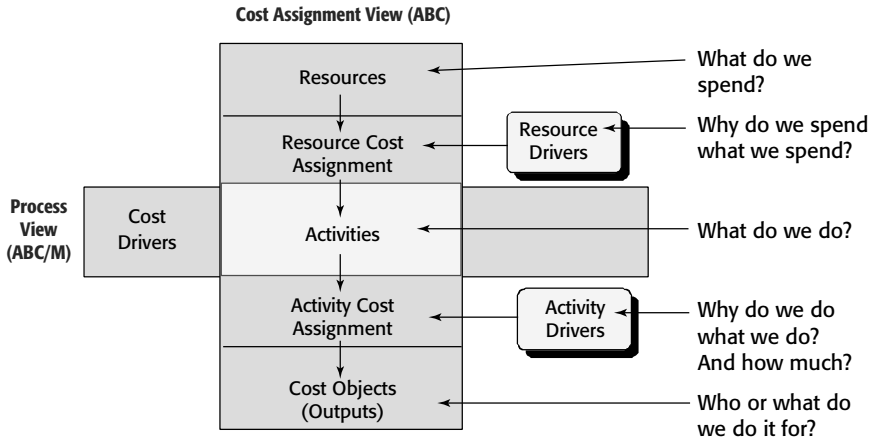


FIGURE 1.7 Questions Answered by the ABC/M Framework
Source: The Consortium of Advanced Manfacturing–International (CAM-I), 1990. Used with permission.

Vertical Axis

The vertical axis reflects costs as they are sensitive to demands from all forms of product, channel, and customer diversity and variety. The work activities consume the resources, and the products and customer services consume the work activities. The ABC/M cost assignment view is a cost-consumption chain. When each cost is traced based on its unique quantity or proportion of its driver, *all* the resource expenses are eventually reaggregated into the final cost objects. This method provides much more accurate measures of product, channel, and customer costs than the traditional "peanut-butter spreading" cost allocation method.

ABC/M has been called "pull and remember" based on its activity drivers. This is in contrast to the nickname "push and forget" for traditional cost allocation. Commercial ABC/M software has a powerful audit trail of its computed costs that runs all the way back to the resource expenditures. In ABC/M, the activity drivers behave like a "pump and valve" in this cost reassignment network. Activity drivers are critical to ABC/M because not only do they segment and flow the costs to reflect the diversity of the products and customers, they govern the accuracies as well.

Horizontal Axis

The horizontal view of the ABC/M Cross represents the business process view. A business process can be defined as two or more activities or a network of activities with a common purpose. Activity costs belong to the business processes. Across each process, the activity costs are sequential and additive. In this orientation, activity costs satisfy the requirements for popular flow-charting and process modeling techniques and software. Business process-based thinking, which can be visualized as tipping the organization chart 90 degrees, is now

dominating managerial thinking. ABC/M provides the cost elements for process costing that are not available from the general ledger.

Cost Drivers and Activity Drivers

There is probably no term, other than *activity,* that has become more identified with ABC/M than the term *driver* and its several variations. The problem is that it has been applied in several ways with varying meanings. To be very clear, a *cost driver* is something that can be described in words but not necessarily in numbers. For example, a storm would be a cost driver that results in much clean-up work and the resulting costs. In contrast, the *activity drivers* in ABC/M's cost assignments must be quantitative, using measures that apportion costs. In the ABC/M vertical cost assignment view there are three types of drivers, and all are required to be quantitative:

- Resource drivers trace expenditures (cash outlays) to work activities.
- Activity drivers trace activity costs to cost objects.
- Cost object drivers trace cost object costs to other cost objects.

In the ABC/M Cross's vertical cost assignment view, activity drivers will have their own higher order cost drivers. Events or other influences, which are formally called cost drivers, cause work activities. A *cost driver*, such as a sales or work order, is the trigger that causes the work activity to utilize resources to produce output or results. Activity costs are additive along the process and therefore can be accumulated along the business process.

Cost drivers and activity drivers serve different purposes. Activity drivers are output measures that reflect the usage of each work activity, and they must be quantitatively measurable. An activity driver, which relates a work activity to cost objects, "meters out" the work activity based on the unique diversity and variation of the cost objects that are consuming the activity. It is often difficult to understand whether use of the term *activity driver* is related to a causal effect (input driver, such as "number of labor hours") or to the output produced by an activity (output driver, such as "number of invoices processed" or "number of gallons produced"). In many cases, this is not a critical issue as long as the activity driver traces the relative proportion of the activity cost to its cost objects. An activity cost has an output cost rate that is synonymous with the activity driver rate. Older, less-effective terms, such as *first* and *second stage* driver, continue to be used to describe items similar to the currently more accepted terms *resource driver* and *activity driver.*

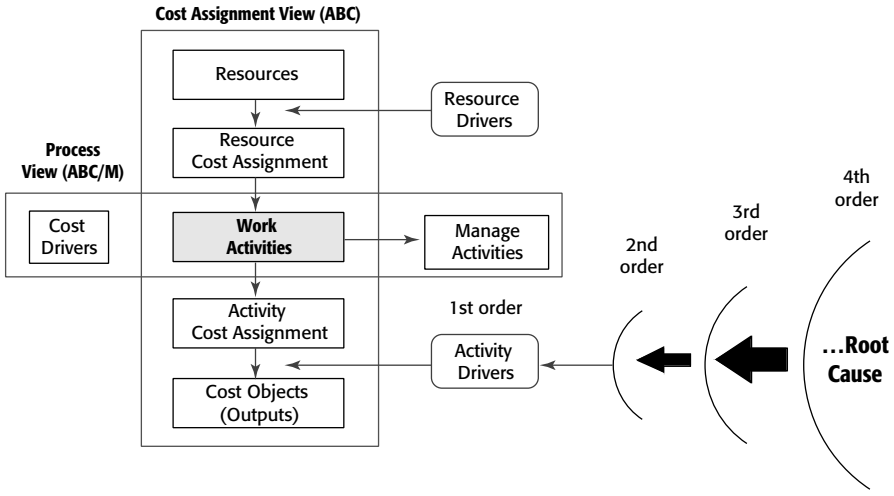
A *cost driver* is a driver of a higher order than activity drivers. One cost driver can affect multiple activities. A cost driver need not be measurable but can simply be described as a triggering event. The term describes the larger scale causal event that influences the frequency, intensity, or magnitude of a workload and, therefore, influences the amount of work done that translates to the cost of the activities. For example, a sales promotion can be a cost driver for substantial increases in the company's work activities of the order-fulfillment process. The

amount of effort used in taking orders, for example segmented by teenagers versus senior citizens, would require an activity driver (i.e., number of orders placed due to promotion) to calculate the proportional costs to customers in each segment. There would be a unique activity driver for each work activity that belongs to the order-fulfillment process.

Figure 1.8 illustrates how activity drivers are lower order drivers of cost drivers. ABC/M relies on activity drivers for tracing costs, and collectively they are useful when combined with quality management (QM) problem-solving tools for identifying root causes.

Driver data, whether cost driver or activity driver information, spark root cause analysis. But usually the activity drivers used for ABC/M costing are output-based. Therefore, as the quantity of the drivers rises or falls over time, ABC/M can report the trend in terms of per-unit cost of work rates of the activity outputs and ultimately of the products. Alternatively, ABC/M can also provide the per-unit-of-each-output rates for use in predictive planning and what-if scenarios, a popular use of the ABC/M data. Cost estimating with ABC/M is natural because the activity costs react and behave linearly with changes from their activity drivers. Too often in traditional costing the cost rates do not directly vary with changes in volume; this results in mis-estimates and ultimately in errors, poor decisions, and lost profits.

Activity drivers have their own cost drivers. It is best to use "symptomatic" and physical output drivers in the ABC model to measure unit driver rates and segment the diversity of the cost objects…



…and rely on employees to determine the "nth order" drivers using TQM problem solving techniques outside of ABC's cost flowing.

FIGURE 1.8 Drivers Have Drivers

As mentioned, in the vertical cost assignment view the term *driver* is appended in three areas. The first deals with the method of assigning resource costs to activities: a *resource driver*. The second deals with the method of assigning activity costs to cost objects: an *activity driver*. The third—a *cost object driver*—applies to cost objects after all activity costs have already been logically assigned. Note that cost objects can be consumed or used by other cost objects. (In this context, references to "first" and "second" stage drivers are being abandoned as being obsolete. Their use today would give a misleading impression that ABC/M can be easily accomplished as a simplistic two-step allocation. ABC/M practitioners have come to recognize that ABC/M is a multistage cost assignment scheme, as discussed in "Expanded ABC/M Cross" in Chapter 2.) By limiting the use of the word *driver* to four clearly defined areas—cost driver, resource driver, activity driver, and cost object driver—I hope to prevent misinterpretation or misuse of the term.

The ABC/M Cross displays in a simple fashion that the work activities at the intersection of the vertical and horizontal axis are integral to determining the cost of an organization's processes as well as the cost of its cost objects. The activity at the intersection schematically represents an individual activity—a very local view. But from a global perspective, the vertical (cost assignment) and horizontal (process) views may consist of many activities that are networked based on their relationships to resources, cost objects, and other activities. (This is discussed further in "Expanded ABC/M Cross" in Chapter 2.)

Large ABC/M Size Does Not Make Better ABC/M

In practice, ABC/M systems will sometimes trace work activity costs to two or more other intermediate work activities that consume the work upstream from the ultimate products and customer services that initially trigger the demands on work. The reassignment network of cost-segmented consumption is responsible for the majority of ABC/M's superior costing accuracy. ABC/M can tolerate reasonable cost driver estimates as proxies for actual transaction detail drivers because the error does not compound; it dampens out on its way to the final cost objects. It is somewhat counterintuitive, but with ABC/M, precision inputs are not synonymous with accurate outputs. This property significantly lightens the load for data collection.

ABC/M's property of error-dampening also means that an ABC/M model does not need to be very granular or consequently very large in size. Unfortunately, because this idea is counterintuitive, many ABC/M systems are overengineered. The ABC/M models are well beyond diminishing returns of extra accuracy for extra levels of effort. This is "ABC/M's leveling problem." No one knows in advance how detailed to make the first ABC/M model. The project team, often led by accountants, errs on the side of excess detail. Unfortunately, some activity-based costing projects are exposed to risk because the system became unnecessarily difficult to maintain prior to the users comprehending how

they could apply the ABC/M data. This is why ABC/M advocates' mantra is: "It is better to be approximately correct than precisely inaccurate!" In the end, the level of accuracy and detail depends on what decisions are made with the data. Usually the accuracy requirements are not unreasonably harsh. So learn how to right-size your ABC/M system. ABC/M is a solution, but a solution to a problem should not become the next problem. Learn the properties of ABC/M model design and architecture.

Some of the lessons learned about ABC/M and profitability analysis follow:

- Information, although not precise, can provide an organization with substantially improved support for decision making and greatly improve its understanding of profitability.
- An organization does need excellent ABC/M analysis to make great improvements.
- No ABC/M information and its analysis are perfect. Good judgment and additional qualitative information are necessary before final decisions are made.

A simple rule that will be repeated in this book is to constantly ask, "Is the climb worth the view?" That is, by building a more detailed and slightly more accurate ABC/M model, will the answer to your question be better answered? Avoid the "creeping elegance" syndrome. Larger models introduce maintenance issues. (ABC/M's leveling problem is discussed in depth in "ABC/M's Achilles Heel: The Leveling Problem" in Chapter 2.)

What Gave Rise to ABC/M?

Many organizations have been suspicious that their cost management system leads to behavior and actions that are counterproductive. Figure 1.9 lists several unexpected outcomes that can result from strictly adhering to the reporting from a traditional standard costing system. These outcomes mainly affect operational effectiveness and efficiency.

It may have been acceptable in the early 1900s, when Frederick Taylor's scientific management revolution was being introduced, to apply standard costing to maximize work center efficiency and utilization. In those days detailed variance analysis was the name of the game. It was useful in that era of standard products and large run batch-and-queue production. But, as I discuss in Chapter 4, mass production has given way to mass customization combined with better, faster, and cheaper requirements. Hence, the use of variances and standards has to be carefully reconsidered. Companies can no longer afford to allow their accounting system to drive aberrant operations behavior, people performing unneeded work simply to absorb more costs to avoid unfavorable variances on their report card.

To complicate matters, the traditional cost systems also did not produce the correct numbers needed for strategic decisions. In the early 1980s many companies began to realize that their traditional accounting systems were generating in-

Traditional cost systems negatively influence managers.

Cost Data	Dysfunctional Influence
Purchase Price Variances	Quantities are ordered in *excess* of requirements from suppliers with *low* cost and *low* quality
Equipment Utilization and Labor Efficiency	People and equipment resources are maximized leading to building *incorrect* and excess inventories
Standard Cost Overhead Absorption	Managers will overproduce unneeded work to generate favorable variances (perpetuating the myth that overhead spending and direct costs are linked)
Overhead Rates	Managers try to control the rate, not their spending
Cost Center Reporting	Managers focus on departments, not on processes, especially customer-related processes

FIGURE 1.9 Traditional Cost Systems Are Flawed

accurate costing information. The typical organization's cost structure had been substantially changing. For most of them, overhead and indirect costs were increasing and mainly displacing the direct labor costs, the costs of frontline workers. The three primary causes for this shift were increasing organizational complexity resulting from proliferation in the variety of product and service offerings; a more diverse group of channels and customers; and increased automation, new technologies, and new methodologies.

In the past, calculating costs using volume-based allocations may have been acceptable and may not have introduced excessive error. But most organization's cost structures began to change in the 1970s. With greater overhead costs relying on a basis for cost allocations that were tied to unrelated volumes of usage, the traditional costing method had become invalid relative to how the rich variation of products and services consumed costs. Therefore the unfavorable impact of the costing errors was becoming much more intense than in the past.

Many managers understood intuitively that their outdated accounting system was distorting the product and service-line costs, so they sometimes made informal adjustments to compensate. However, with so much complexity and broad product and channel diversity, it was nearly impossible for managers to predict the magnitude and impact of the mental adjustments needed to achieve accuracy. These conditions clearly exist today, but they are more intense. ABC/M resolves the problem of poor indirect and overhead cost allocations, but it also provides additional information for analysis to suggest what positive actions, strategic or operational, can be taken based on the new data.

In addition to the need to address the distortion of true costs that are misreported by traditional systems, the rise in ABC/M has resulted from external factors. The level of competition that most firms face has increased dramatically. In the past, most organizations were reasonably profitable. They could make mistakes,

and their adequate profitability would mask the impact of their wrong or poor decisions. But competition has intensified. A company can no longer carry unprofitable products and service lines and unprofitable customers by hoping the profitable ones will more than offset and make up the difference. They can no longer survive with misleading cost allocations and without having visibility of their costs across their end-to-end business processes.

Today the margin for error is slimmer. Businesses cannot make as many mistakes as they could in the past and remain competitive or effective. Price quotations, capital investment decisions, product mix, technology choices, outsourcing, and make versus buy decisions today all require a sharper pencil. More competitors are better understanding the cause-and-effect connections that drive costs, and they are fine-tuning their processes, removing COQ, and adjusting their prices accordingly. The resulting price squeeze from more intense competition is making life for businesses much more difficult. Budget tightening is similarly affecting government and not-for-profit organizations. Knowing what your real costs are for outputs, product costs, and the "costs-to-serve" channels and customers is becoming key to survival. With activity-based costing visibility, organizations can identify where to remove waste, low-value-adding costs, and unused capacity, as well as understanding what drives their costs. They can also see the degree of alignment of their cost structure with their organization's mission and strategy.

Today an organization's road is no longer long and straight, it is windy, with bends and hills that do not give much visibility or certainty to plan for the future. Organizations need to be agile and continuously transform their cost structure and work activities. This is difficult to do when an organization does not understand its own cost structure and economics.

For years, ABC/M was considered an expensive project that only large organizations with extensive resources could undertake. But today, with the proliferation of computers for gathering and computing, the cost of data collection and measurement has fallen at the same time that information processing has improved. Not too long ago, it was cost prohibitive to accumulate, process, and analyze the data necessary to run an ABC system. Cost accounting was restricted to a big box mainframe computer and data stored as flat-files.

Today, not only are such activity measurement systems affordable, but much of the information already exists in some form within the organization. For example, quality management systems of ISO 9000-registered organizations have an abundance of data, usually not connected to the accounting system. Also, a few knowledgeable employees can usually estimate a large portion of any remaining data that may not be available. Estimates such as these will have a minimal adverse impact on accuracy. Hence, all organizations can easily produce ABC/M data. Better yet, information technology has dramatically improved the deployment of ABC/M data for viewing, planning, and decision making. Powerful database management systems and computing engines make data processing no longer an impediment to understanding costs.

What makes ABC/M even more realizable is the fact that most data for decision making need not be accurate to several decimal places. In addition, a technique for implementing ABC/M based on rapid prototyping scale models is assuring implementation success. In contrast to the long, multi-month, one-chance, single-design approach, the ABC/M rapid prototyping technique follows the quick build of the initial model, built roughly in two days, by iterative remodeling of increasingly larger scale ABC/M models. Eventually the larger scale ABC/M model becomes the organization's repeatable and reliable production system.

ABC/M in Advanced, Mature Users

Businesses like the Coca-Cola Company, DeLuxe Check, Navistar, and Allied Signal Corporation have been performing ABC/M for many years. They are advanced and mature ABC/M users who are interested in two goals: to institutionalize ABC/M company-wide into a permanent, repeatable, and reliable production reporting system and to establish the ABC/M output data to serve as an enabler to their ongoing improvement programs, such as TQM, change management, cycle-time compression, core competency, BPR, product rationalization, target costing, and channel/customer profitability.

More recently, new issues for the advanced and mature ABC/M users are emerging; they include the following:

- Integrating the ABC/M output data with their decision-support systems, such as their cost estimating, predictive planning, activity-based budgeting (ABB) systems, customer relationship management (CRM), and balanced scorecard performance measurement systems.
- Learning the skills and rules for resizing, reshaping, releveling, and otherwise readjusting their ABC/M system's structure in response to solving new business problems with the ABC/M data.
- Collecting and automatically importing data into the ABC/M system.
- Automatically exporting the calculated data out of their ABC/M system.

It is evident that among experienced ABC/M users, ABC/M eventually becomes part of their core information technologies.

More specifically, the output data of an ABC/M system is frequently the input to another system, such as a customer order quotation system. ABC/M data also complement other productivity or logistics management tools such as simulation software, process modelers, business process flow charters, executive information systems (EIS), and online analytical programs (OLAP). In the next several years, there will be a convergence of tools as these now somewhat separate software applications become part of the manager's and analyst's tool suite.

Advanced, mature users are also masters at employing ABC/M "attributes," which are scored and graded against the activities. ABC/M attributes allow managers to differentiate among activities. A popular attribute involves scoring

activities along their "high- versus low-value-adding" scale so that teams can focus on the work that is more important. Multiple activities can be simultaneously tagged with these attribute grades, and of course the amount of money trails along as part of the activity data. As an option, activities can be summarized into the processes. Another option is to score or grade each activity by how well the organization performs its work.

Two or more attributes can be combined to gain further insights. A popular combination is the level of importance and the level of performance. With these two independently judged scores for each activity, organizations can see, for example, that they are spending a lot of money doing things they are good at but that they have judged to be unimportant. Some attributes are subjectively scored or graded by managers and employees, and they introduce emotionally compelling business issues. I have often said that, "ABC/M adds the air-conditioning to the ABC/M data."

Organizational Structure, Behavior, and Value Creation

Organizations are discovering that the business process performance levels necessary for their organization to remain competitive (or to continue to be adequately funded) exceed what is possible from conventional, highly vertical, functional organization forms. The traditional organizational model is becoming less valid as business processes transcend old departmental boundaries.

Future cost avoidance and performance improvement can be achieved only through reconfiguring work activities into fewer, more integrated jobs. Optimizing a stove-piped functional department can be a poor choice for the total organization. On occasions there are competing performance measures: "As I do good, you are adversely affected." With this new way of thinking, traditional managerial accounting comes up short. It fails to provide data for decision support, and it prevents producing the kind of metrics to serve as inputs into balanced scorecard and performance measurement systems, including shareholder value added (SVA) methods.

How will managers and teams learn how to operationalize and actualize their process-based thinking? How will they measure their processes or ever know whether cost-saving benefits are truly being realized? How will business processes be managed and measured to prove that they are indeed creating value relative to their effort and cost?

One important way to answer these questions is to provide managers and teams with fact-based data in place of assertions and intuitive guesses. In addition, managers can benefit from visual aids that are supported with real and tangible metrics. Organizations will increasingly use diagrams and pictures, not just racked-and-stacked cost tables, to help employees truly visualize, discover, internalize, and learn. The rate of organizational learning is considered by many as today's primary differentiator between gaining and losing organizations. If the rate

of organizational learning is slow, that can be considered a major impediment to an organization's growth and sustaining power.

ABC/M project managers have been slow to recognize the behavioral change management aspects of the ABC/M data. ABC/M is a socio-technical tool, and the emphasis should be on the social side. Many managers and ABC/M project teams see ABC/M as simply a better measuring scheme or cost allocation method. However, its real value lies in introducing undebatable fact-based data that can be used by employees to build business cases, quickly recognize business problems or opportunities, and test hypotheses. ABC/M has many of the characteristics of an organizational methodology.

Many managers are frustrated by the difficulties in bringing about change within their organizations. Behavioral change management is receiving wider attention, and ABC/M data are playing an important role in change. I encourage you to be part of this change. One description of old age is that it starts as soon as your attachment to the past exceeds your excitement about the future. Since you will live the rest of your life in the future, think young and be progressive.

One technique to consider comes from the great movie director, Alfred Hitchcock. He referred to this method as using the superiority of suspense over shock. Make the audience squirm. Hitchcock would not simply film two men conversing at a table, and—boom—a bomb would go off. He would let the audience know that a time bomb is planted and timed to go off as the two men are conversing. With ABC/M data, I encourage project teams to first have users speculate on the results before they see the real data. For example, have them list who they think might be the unprofitable customers. Whether they guess right or wrong, the users will already have begun to think through many of the cost-and-effect relationships. Either their intuition will be validated or they will be surprised, but either reaction prepares them to better understand how ABC/M supports the correct answer.

A Business Is Multidimensional

ABC/M contends that many important cost categories vary not with short-term changes in output but with changes in the design, mix, and range of a company's products, services, and customers. Once product and service-line costs are identified, employees and managers begin to see the value of understanding the activities and their associated costs.

The primary use of ABC/M shifts from an accounting tool to a management decision support system for operational streamlining and strategic thinking—ABC/M is business intelligence. Information technology gathers and manages this ABC/M information, combining not just cost but also nonfinancial information and performance measures. This enterprise-wide technology is called an activity-based information system. As more managers have become aware of the activity and of the information that is available, additional applications for ABC/M have emerged,

including unused capacity management. ABC/M provides the lens that focuses on an organization's efforts.

ABC/M and the Future

An overarching issue in ABC/M is the perception of it as just another way to spin financial data rather than as mission-critical managerial information. The Information Age can be mind-boggling. In our future, as technology advances, so will the demand to access massive amounts of relevant information. The companies that survive will be those that can answer the following questions:

How do we access all this information?
What do we do with it?
How do we shape the data and put them in a form with which we can work?
What will happen when we apply technologies developed *during* the Information Age *for* the Information Age?

Clearly, as information technology evolves, organizations will increase their effectiveness. Further, as markets change, companies and organizations will run into global competitors that increasingly look to information and information technology for competitive advantage. ABC/M is involved in this broad arena of "outsmartmanship."

ABC/M puts the "management" back into management reporting. For those who are involved with ABC/M projects, the key is to create and orchestrate change rather than merely react to it and attempt to make the best of a poor situation. It will be fun watching organizations move from their learning stages into mastery of building and using ABC/M systems.

STAGES OF EVOLUTION OF COST MANAGEMENT SYSTEMS

In the early 1990s Professor Robert S. Kaplan of the Harvard Business School described four stages of cost management systems. Figure 1.10 extends his stages of evolution with a fifth stage beyond Kaplan's fourth stage, "integrated" cost management systems. The fifth stage that I propose focuses exclusively on decision support. Following is a review of the standard four stages.[2]

Standard Four Stages of Cost Management Systems

Stage 1: Broken

Stage 1 cost management systems are primitive and fairly useless for managing an enterprise. At an extremely primitive level, an example would be a cigar box being used for cash and coins at a child's lemonade stand. The box serves the two purposes of providing change for customers and determining at the close of busi-

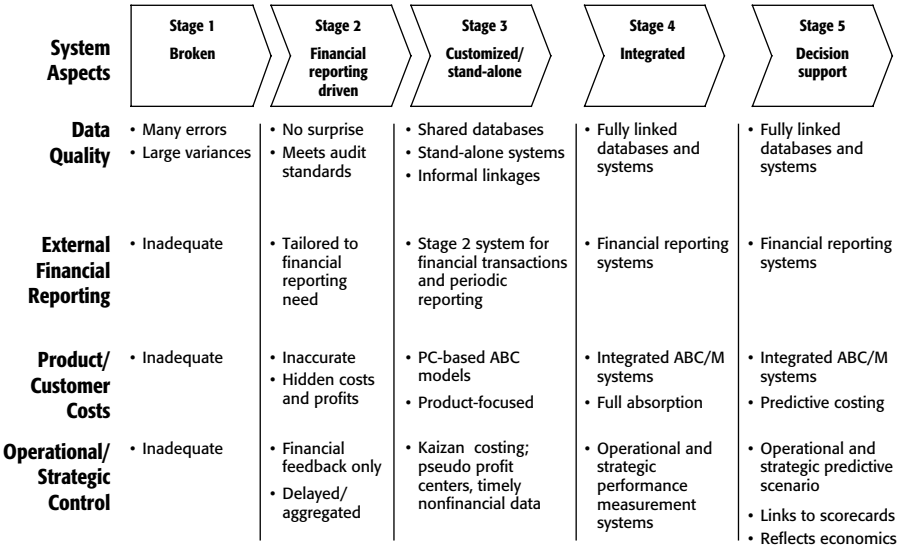


FIGURE 1.10 Stages of Evolution of Cost Management Systems
Source: Stages 1–4, R. S. Kaplan and R. Cooper, *Cost & Effect* (Boston: Harvard Business School Press, 1998). Reproduced with permission from *Management Accounting*, published by the Institute of Management Accountants (IMA), Montvale, NJ, *www.imanet.org.*

ness if any money was made. If there is more money in the box than when the day began, after allowing for the purchase price of the ingredients, the child knows it made a profit.

A small step beyond that is the small retailer. Its pricing may simply be a cost-plus markup of its purchases to cover operating expenses.

A step above that is the small manufacturer or distributor. Because these organizations may not be able to justify the extra expense to maintain a formal record-keeping system, the quality of their data will likely be inadequate for making decisions.

Stage 2: Financial Reporting Driven

Stage 2 cost management systems are used to comply with external reporting for bankers or owners or to government agencies, such as for tax reporting. The financial data may minimally meet the reporting requirements, but they may distort the true costs and profit margins of the specific products or service lines being sold. This information may be reported weeks or months after the period in which the business was conducted. It also may be too aggregated to draw any insights about where to focus or what to better control.

Manufacturers and distributors tend to focus on the direct material and labor expenses that can be logically associated with products and service lines. The remaining support, distribution, sales, and administrative expenses are either

ignored or loosely linked to the costs of outputs. Simplistic overhead expense allocations introduce distortions that can be large relative to the true costs.

Stage 3: Customized/Stand-Alone

Stage 3 cost management systems are designed to provide reasonable accuracy and visibility for decision making. This is the stage at which activity-based costing begins to emerge. The variety and diversity of the products and service lines of these organizations will have expanded so much that indirect and support overhead expenses will have become a significant portion of the cost structure. Simplistic cost allocations, usually volume-based, are no longer sufficient to reflect how much the individual outputs consume those expenses.

Whether the expenses are direct or indirect, the cost assignments are computed in a parallel or off-line model, not necessarily in a repeatable system. The operational data, such as the basis for tracing the indirect expenses to costs, is usually input as a separate step. For manufacturers, the assignment of overhead for inventory costing may be based on simplistic assumptions, whereas the activity-based costs will be more reflective of use. The two methods produce different results for different purposes. The inventory costing is used for external reporting and the activity-based costing for strategic decision making or pricing.

Stage 4: Integrated

Stage 4 cost management systems are what many organizations aspire to. The databases are linked to the calculation logic that traces the expenses to processes and to outputs. The resulting information can be reported for monitoring performance or simply to more accurately report spending for control or for profit margin performance. The administrative effort to refresh the input data and update the results is much less than in Stage 3. The reporting is highly automated and supported by powerful query and analysis tools. The distribution of the calculated results is more widely accessible to various users throughout the organization.

Fifth-Stage Cost Management System

Stage 5: Decision Support

Stage 5 is my extension of the first four. It represents more of a profit management and value management system. It goes well beyond simply calculating and distributing accurate and relevant cost information, providing information, and the flexibility to configure assumptions, for decision making.

All decisions affect the future, not the past. The past reflects past decisions, good or bad. The Stages 3 and 4 cost management systems originate in historical revenue and expense data. They are descriptive rather than prescriptive. It is too late to do anything about what already happened. What ABC/M accomplishes is

logical and defensible tracing of expenses so that managers and employee teams can gain insights into and make inferences about where to focus and what to change.

The formal step of actually taking actions based on inferences from past information leads us into the broad realm of predictive costing, planning, and rebudgeting (during and after cost overruns). This will be the focus of Stage 5 systems. Today this area resides in diverse pockets of an organization where cost estimating, planning, and budgeting take place. Cost estimating is usually performed as an ad hoc analysis aimed at a single decision, such as a capital investment justification or a make-versus-purchase outsource decision.

Another application of cost estimating may be to determine a price quotation to offer to secure a customer order. In price quoting, there are implicit assumptions about cost rates and whether expenses are fixed or variable. In some cases those assumptions may not be completely valid. A more powerful predictive costing calculation engine and system will allow for more formal and flexible configuring of assumptions of the consequences of decisions, in addition to the specific inputs and outputs of a decision. These assumptions will recognize the impact on capacities, specifically the adjustability of capacity and the resulting increases or decreases in specific expenses during the time periods affected by the decision.

As the Internet continues to shift power to buyers and away from suppliers, a defense for suppliers will be to induce the customers' demands through a variety of option offerings. The various options will be combinations of various products, promotions, and alternative service levels offered at appropriate pricing to stimulate the customer to order and purchase. Much of this will be Web-based and automated. Stage 5 systems will recognize the existing capability and capacity of an organization and take that into account as they support predictive costing. Stage 5 systems will be rule-based. (Chapter 4 discusses the new requirements of twenty-first-century e-commerce that will rely on Stage 5 and ABC/M systems.)

History of ABC/M

ABC/M has gone through a metamorphosis. Figure 1.11 illustrates its various stages. The historians of cost management may someday look back and briefly describe each era in this manner.

Pre-1950s

Following the days after 1492, when the Italian monk Lucas Pacioli documented double-entry bookkeeping, accountants have put a lot of energy into developing methods for better assigning expenses to costs. Many assignment methods, such as project accounting and standard costing, appeared adequate. Some companies

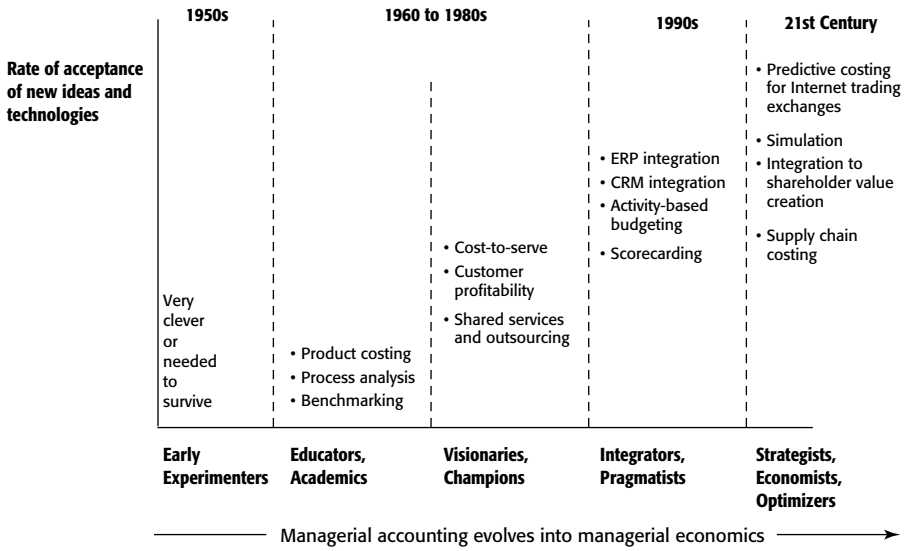


FIGURE 1.11 Chronological History of ABC/M

used industrial engineering techniques focusing on cross-functional work activity analysis.

Early Experiments in ABC/M

The financial controllers at some companies occasionally were clever enough to use cost assignment methods based on "event drivers." They were basically performing primitive forms of ABC with home-grown business or spreadsheet software.

Educators

A few university faculty began to realize that traditional cost allocations were not adequately causal-based. Often the methods used were political or simply convenient. Professor Robert S. Kaplan of the Harvard Business School received the most attention (and was my personal trainer when he contracted with KPMG Peat Marwick to implement ABC/M systems). However, it is useful to realize that Professor Kaplan did not invent ABC/M; he was a loud voice advocating that organizations apply it.

Visionaries

Initially companies applied ABC/M for more accurate product costing. This allowed a much more credible reporting of profit margins. However, many users saw that there was also utility in the same data that calculated the product costs

to address other problems. The ABC/M data were next applied for process analysis, BPR, and benchmarking. In 1988 Chris Pieper, the founder of ABC Technologies, introduced an inexpensive yet flexible commercial ABC/M software called Easy ABC. This tool allowed for the arterial network of flowing costs, and some of its users became visionaries. It didn't take too long for these people to realize that the ABC/M method could be applied beyond products to other outputs, such as channels and customers. In commercial industry, this led to applying ABC/M for customer profitability analysis.

Integrators

In 1998, the German company SAP, the world leader in enterprise resource planning (ERP) software, purchased a minority equity investment in the world leader in ABC/M software, ABC Technologies Inc. This was a major event, signaling to the world that the large ERP production and planning systems were acknowledging ABC/M as credible and important. Soon other ERP vendors began to announce the availability of ABC/M functionality. ABC/M began to be integrated with other tools as well.

Economists and Optimizers

The thought leaders in cost management have begun to integrate the ABC/M data to support decision making. This involves predictive costing, not simply segmenting and tracing historical costs. Linkages of trade-offs between customer profitability and increases or decreases in shareholder value have been receiving intense scrutiny.

NOTES

1. As quoted in George Seldes, ed., *The Great Thoughts* (New York: Ballantine Books, 1985), p. 119.
2. Dr. Robert S. Kaplan, "The Four Stage Model of Cost Management," *Management Accounting* (February 1990).