TITLE

Implementing Activity-Based Management: Avoiding the Pitfalls

CREDITS

This statement was approved for issuance as a Statement on Management Accounting by the Management Accounting Committee (MAC) of the Institute of Management Accountants (IMA). IMA appreciates the collaborative efforts of the Cost Management Competency Center at Arthur Andersen LLP and the work of Dr. C. J. McNair, CMA, of Babson College, who drafted the manuscript.

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Implementing Activity-Based Management: Avoiding the Pitfalls

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I. RATIONALE

Customers are the driving force for any organization. While this is not a new insight, it is the catalyst behind the development of new organizational structures. Reflecting the recognition that interdependent processes are the keys to creating value for customers, organizations are shifting from managing vertically to managing horizontally.

Creating and improving processes to increase customer and shareholder value is the primary goal of managers in these new organizations. To reach this goal, they need relevant, defensible and transparent information. Yet, the development of management information systems to track and provide information about the process-based, value-enhancing aspects of a business have lagged significantly behind the needs of its managers. The ultimate test of the information system is whether the information motivates and assists in attaining strategic, operational, and/or tactical objectives in a timely, effective, and efficient manner.

Activity-based costing/activity-based management (ABC/ABM) fills this information void by providing cost and operating information that mirrors the horizontal view. ABM identifies the key activities performed in an organization, providing a defensible and transparent measure of their associated costs and causes. ABM bundles value analysis, cost driver assessment, and performance measurement in order to initiate, drive, and support improvement efforts and to enhance decision making. Focused on shaping the future, not explaining the past, ABM incorporates opportunity cost analysis into the standard set of estimating tools used by the finance professional. This creates an economically rich basis for supporting business.

Since 1994 the number of companies and organizations embracing activity-based management systems has grown significantly—from over 3,000 known organizations in 1994 to more than 15,000 today.

However, companies use ABM with varying results, suggesting the successful application of ABM requires the mastery of new management tools and techniques as well as a management mind shift. Analysis, not control, must become the focus of managers using financial and non–financial information in a process-driven, customer-centered organization. Defining, measuring, and improving the ability of an organization to create value has to become the stimulus shaping management information systems, as well as the actions and decisions they support. Achieving this goal lies at the heart of ABM.

II. SCOPE

This Statement on Management Accounting (SMA) is addressed to management accountants and others who may lead or participate in efforts to implement ABM management in their organizations. It supplements the Institute of Management Accountants' "Implementing Activity-Based Costing," SMA which describes the basic ABC implementation process.

From 1993 until today, the emphasis has shifted from ABC to ABM, or the use of ABC information to manage and improve process performance. In fact, this time period has witnessed several significant trends, including shifts from:

- pilot tests to full implementations;
- manufacturing companies to all industries;
- single applications of ABC information to multiple, integrated applications of ABM cost and performance information;
- single/select users to multiple users;
- reducing costs to creating value; and
- financial measures to process measures.

This Statement complements "Implementing Activity-Based Costing" SMA by incorporating these latest developments. In addition, this Statement pinpoints the differences between ABC and ABM, discusses how to avoid the most common implementation pitfalls, and illustrates how ABM can link with other improvement efforts to enhance a company's performance. The ABM concepts, tools, and techniques presented apply to all organizations that produce and sell a product or provide a service, including all levels of government.

The following Statement assumes that the reader is already familiar with basic ABC concepts. It is written to help management accountants and others to understand:

- the key differences between ABC and ABM;
- ABM best practices;
- uses and benefits of ABM;
- the roles and responsibilities of management accountants in ABM projects;
- the phases of implementing ABM;
- the key pitfalls in each phase of ABM implementation and how to avoid them;
- the importance of integrating ABM into the organization; and
- how to evaluate ABM software packages.

III.KEY DIFFERENCES BETWEEN ABC AND ABM

There is significant confusion regarding the semantics and acronyms associated with activity-based information. To clarify these issues, the Consortium for Advanced Manufacturing-International (CAM-1)[1] has initiated the development of a comprehensive glossary of ABC/ABM terms.

Activity-based costing is defined as a methodology that measures the cost and performance of activities, resources, and cost objects. Specifically, resources are assigned to activities, then activities are assigned to cost objects based on their use. ABC recognizes the causal relationships of cost drivers to activities.

Activity-based management is subsequently defined by CAM-I as a discipline that focuses on the management of activities as the route to improving the value received by the customer and the profit achieved by providing this value. ABM includes cost driver analysis, activity analysis, and performance measurement, drawing on ABC as its major source of data.

In simple terms ABC is used to answer the question, "What do things cost?" while ABM takes a process view to understand what causes costs to occur. Using ABC data, ABM focuses on how to redirect and improve the use of resources to increase the value created for customers and other stakeholders. The key differences between ABC and ABM are:

- ABC focuses on understanding costs and their drivers; ABM seeks to change them;
- ABC can provide information on process, product, and market performance; ABM finds ways to improve them;
- ABC is cost centered; ABM lies at the heart of the management process;
- ABC is the result of a static analysis of the organization; ABM is embedded in the dynamics of change;
- ABC is predominantly historical and focused on controlling existing costs; ABM is forward looking, seeking ways to avoid unnecessary costs and put existing resources to maximum use;
- ABC reports on internal operational and tactical results; ABM is strategic, focused on under-

1 CAM-1 is a not-for-profit, cooperative membership organization established in 1972 to support research and development in areas of strategic importance to manufacturing industries. Since 1972, the membership has expanded to include several industries outside manufacturing. The definitions presented here for both ABM and ABC are based on the CAM-I Glossary originally published in 1990.

standing the key elements of value from the customer's perspective;
- ABC is a source of explanatory data; and
- ABM provides actionable information.

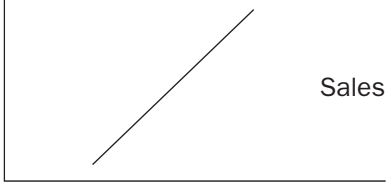
ABM is not a replacement for existing initiatives such as total quality management (TQM), business process redesign (BPR), benchmarking, or just-in-time (JIT). It is, instead, part of an integrated information system that puts teeth into these improvement initiatives by establishing accountability, measuring results, and setting priorities. ABM information has a wide use and applicability in process-based organizations.

IV. USES AND BENEFITS OF ABM

ABM refers to the entire set of actions that can be taken on a better information basis with activ-

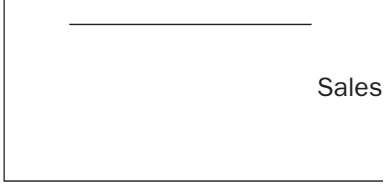
EXHIBIT 1. GENERAL USES OF ABM INFORMATION

Growing/Expanding Business



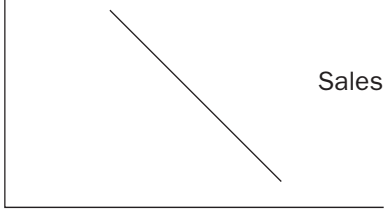
Primary Uses of ABM
- To redeploy nonvalue-added work
- To improve processes and activities

No Growth/Flat Business



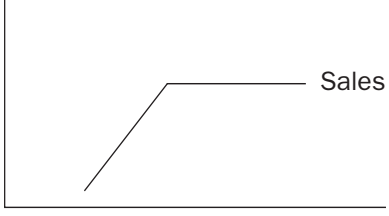
Primary Uses of ABM
- To identify nonvalue-added cost
- To set priorities for improvement and effect improvement
- To isolate\eliminate cost drivers
- To determine product\service costs

Declining Operations



Primary Uses of ABM
- To cut cost
- To downsize
- To effect lay-offs

Capacity Constrained



Primary Uses of ABM
- To determine product\service cost
- To make product\service decisions
- To determine activity capacity (bottlenecks)

Source: Miller, 1996: 26.

ity-based cost information. Organizations implement ABM for different reasons. They believe ABM will help them make better decisions, improve performance, and earn more money on assets deployed. As suggested by Exhibit 1, companies in many situations can find value in ABM information.

Some of the specific uses of ABM in organizations today include attribute analysis, strategic decision making, benchmarking, operations analysis, profitability/pricing analysis, and process improvement.

Attribute analysis classifies and combines cost and performance data into manageable, controllable clusters. ABC/ABM systems can use many different attribute or "data tags" for a specific cost. Data attributes allow a company to perform analysis on many different dimensions of a management problem using the same basic warehouse of data. Some common forms of attribute analysis are:

- value analysis, which utilizes information collected about business processes and examines various attributes of the process (e.g., diversity, capacity, and complexity) to identify candidates for improvement efforts;
- time variability analysis, which seeks to understand variances in the time needed to complete an activity or provide a service and to develop ways to reduce these variances; and
- cost of quality, which is a management reporting technique that identifies and measures quality costs within an organization using four basic categories: prevention, detection, internal failure, and external failure.

Strategic analysis explores various ways a company can create and sustain a competitive advantage in the marketplace. Emphasizing long-term objectives and challenges, strategic analysis seeks to impact future costs and improve future profitability by clarifying the cost of various cost objects such as products, customers, and channels. Strategic analysis emphasizes future opportunities and challenges, using a combination of both physical and financial measures to explore the impact of alternative strategic positions. Ways in which ABM supports strategic analysis include:

- strategic planning;
- consolidation of operations analysis;
- acquisition analysis; and
- analysis of revenue and profitability growth potential.

For example, the ABM initiative at Hewlett-Packard-North American Distribution Organization, provides both strategic and operational information including full customer segment costing, full product costing, simple product costing, and targeting of improvement opportunities.

Benchmarking is a methodology that identifies an activity as the standard, or benchmark, by which a similar activity will be judged. It is used to assist managers in identifying a process or technique to increase the effectiveness or efficiency of an activity. ABM supports different types of benchmarking, including:

- internal benchmarking;
- industry/competitive benchmarking; and
- best-in-class benchmarking.

For example, ABM has been successfully applied within AT&T's Business Communications Services (BCS) to support its benchmarking efforts. Unit costs are used as metrics for benchmarking internal work groups as well as comparing the BCS to other billing centers. Work groups that are more cost efficient at performing an activity

can share information with other internal groups and billing centers. By having access to reliable cost data, management can investigate cost discrepancies and more effectively plan process improvements to achieve cost reductions.

Operations analysis seeks to identify, measure, and improve current performance of key processes and operations within a firm. Areas where ABM is useful include:

- "what-if" analysis;
- project management;
- creation and use of activity-based performance measures;
- capacity management;
- constraint analysis; and
- process-based costing.

Profitability/pricing analysis is a key area for any company. ABM assists a company in analyzing the costs and benefits of products and processes in both the "as is" and post-improvement "to be" scenarios. ABM also supports prelaunch analysis and improvement of product profitability. Areas in which ABM has proven useful in adopting organizations include:

- product/service profitability analysis;
- business process reengineering;
- distribution channel profitability analysis;
- market segment profitability analysis; and
- target and life-cycle costing.

ABM is used in a target costing program at AT&T Paradyne to project future activity and product costs. An ABM target costing process was established for all new and major existing products to facilitate life-cycle cost management. The target costing process begins with specified features and functionality that can be sold to achieve a significant market position. From there, product and manufacturing associate teams interlock on a targeted product cost that is a buildup of material and activity cost.

Process improvement lies at the heart of modern management techniques. Focused on identifying the causes of variation, waste, and inefficiency, process improvement includes both incremental and quantum change efforts that seek to increase the value created per resources consumed by an organization. Uses being made of ABM for process improvement include:

- business process modeling;
- total quality initiatives;
- business process reengineering; and
- analysis of outsourcing and shared service opportunities.

The Pennzoil Production and Exploration Company (PEPCO) used ABM as a key measurement tool to identify costs by process and to support its reengineering efforts. To keep pace with lower crude and natural gas prices and slowing North American operation, PEPCO needed to find ways to reengineer existing processes to streamline and improve efficiency.

ABM provided the data for PEPCO to change the cost structure of its exploration and production efforts. It achieved this by determining what resources were actually required to support its properties based on current operation. In addition, the reengineering link enabled the company to consider those same properties and determine how it could best meet its economic objectives with fewer resources through a variety of operations improvement analyses.

ABM is used to support a broad array of management initiatives to help organizations create more value for their customers while reducing

the cost of operations. Benefits derived from ABM's use include:

- identification of redundant costs;
- analysis of value-added and nonvalue-added costs;
- quantification of the costs of quality by element;
- identification of customer-focused activities;
- analysis of the cost of complexity;
- identification of process costs and support of process analysis;
- measurement of the impact of reengineering efforts;
- better understanding of cost drivers;
- evaluation of manufacturing flexibility investments; and
- activity-based budgeting.

V. THE ROLE OF THE MANAGEMENT ACCOUNTANT

The management accountant plays a central role in creating and maintaining activity-based cost information to support activity-based management. Serving as the financial expert on cross-func-tional work teams, management accountants support analysis of current performance, identification of improvement efforts, and prioritization of potential projects. The role of management accountants in ABM efforts comprises the following activities:

- creation of the ABC database;
- maintenance of the ABM data warehouse;
- assurance and monitoring of data integrity within the warehouse;
- analysis of the costs and benefits of improvement projects;
- ongoing audit and analysis of project performance against goals;
- creation and support of management reporting structures;
- provision of cost estimates and reports to meet management's decision-making needs;
- participation on cross-functional teams at all levels of the organization;
- education of line managers on the economics of business within process settings;
- participation in the development of desktop decision support tools for line managers;
- creation and revision of cost estimates as process changes are made;
- target and life-cycle cost and profit analysis;
- strategic and operational budget and planning support; and
- tracking the results/benefits of the ABC/ABM initiative.

In some organizations, management accountants are driving process management efforts, but this can result in ABM being seen as another accounting tool rather than as a management technique to improve profitability and performance against customer expectations. If management accounting does drive the ABM project, it is critical that a strong champion outside the finance group be recruited to support the implementation.

VI. ABM IMPLEMENTATION PHASES

Pilot efforts to experiment with ABM do not always take a company-wide perspective. As a result, isolated pockets of ABM knowledge can develop independent of other management initiatives. This is not necessarily a negative situation, but to achieve its full potential ABM information systems need to become integrated with mainstream information systems and reflect the organization's cultures and values. As most organizations have learned, a holistic approach to ABM implementation is crucial to gaining and sustaining all of ABM's benefits.

When a total approach to ABM implementation is taken, it is important first to complete an overall

assessment of the key processes, activities, and data availability. The elements to be included in the assessment are:

- business process relationship map;
- documentation and relationship of key business processes;
- preliminary list of key and significant activities;
- identification on a preliminary basis of major activities, including possible performance measures and potential cost drivers;
- preliminary costing of activities and business processes;
- estimates of nonvalue-added activities and costs;
- linkage of business processes and activities to the organization's strategic plan;
- application of ABC product/service costing;
- availability of data and information required for the installation;
- existing system capabilities and ability to integrate with activity information;
- primary uses for activity-based information;
- available resources and implementation requirements; and
- recommendations for implementation, steps to be taken, and key time lines.

This preliminary information supports the development of an overall implementation plan. Using a building block approach, the implementation can be completed for one major segment of the business at a time. The steps that need to be completed for each segment include detailed planning, analysis, data gathering, cost tracing, and documentation. Total implementation is complete when a cost-effective, ongoing data collection and reporting system has been developed.

Whether applied on a small scale to a specific area of an organization, such as a department, function, or applications, or used for a large-scale implementation in a specific plant or applied simultaneously to several plants, facilities, departments, or functions, there is no one right way to implement ABM. In fact, the general steps involved in taking a holistic approach to ABM implementation can be expressed in a number of ways and can be performed in different sequences.

Any approach used should include the same core set of steps: planning, activity analysis, activity/product costing, documenting results, data gathering and analysis, developing a data collection and reporting system, and achieving full integration. Choosing a specific model or implementation approach is a matter of personal preference and the specific features and requirements the model is designed to support. Most models, once implemented, yield similar end results. A brief summary of each of the steps in ABM implementation follows.

Planning

The planning phase focuses on identifying the purpose, objectives, and expectations for each specific element of the ABM total implementation. The development of a detailed project plan is a critical element of the planning phase. The project plan should include a time line with assigned responsibilities for task completion, clear definition of the resources required to complete each stage of the implementation, the selection of specific individuals to complete the work, and a precise denotation of the data collection methods to be employed.

The scope of the project, management expectations regarding the output of the project, and issues surrounding team development are also important for developing a comprehensive ABM implementation plan. While planning represents only a small part of the total time and effort ofan ABM initiative, it has a major impact on its overall success.

Analyzing Activities

Activity analysis, lying at the heart of any ABC/ABM effort, is the second major part of an ABM implementation. It comprises several key steps, including cataloguing of specific activities and business processes, definition of outputs and output measures, value-added analysis, identification of cost drivers, and detailed specification of activity performance. As this list suggests, activity analysis normally consumes the major part (50 to 55 percent) of the time and resources allocated to implementation.

Costing Activities, Products, and Services

Activity analysis provides basic information for constructing the ABC cost system. Developing the ABC estimates is the most mechanical part of any ABM implementation. Focused on identifying and documenting cost tracing methodologies and core assumptions, the costing phase ties the financial reporting system to the newly developed activity and process structures of the ABM system.

The development or choice of a specific software system to export, import, and accept the data used to generate the activity-based estimates and to apply these estimates to create product and service costs makes up the bulk of the work completed during this stage. Since the software systems selected or developed as part of this step are often used for the ongoing reporting of activity information and performance, it is important that they be relatively simple to update and maintain.

Documenting Results

While often neglected, documentation is an important part of an ABC/ABM implementation. The work completed, significant results, recommendations, and conclusions should all be included in the documented records of the project. Focused on supporting downstream action and decisions regarding next steps, documentation serves as a crucial bridge between planning and operating an ABM system.

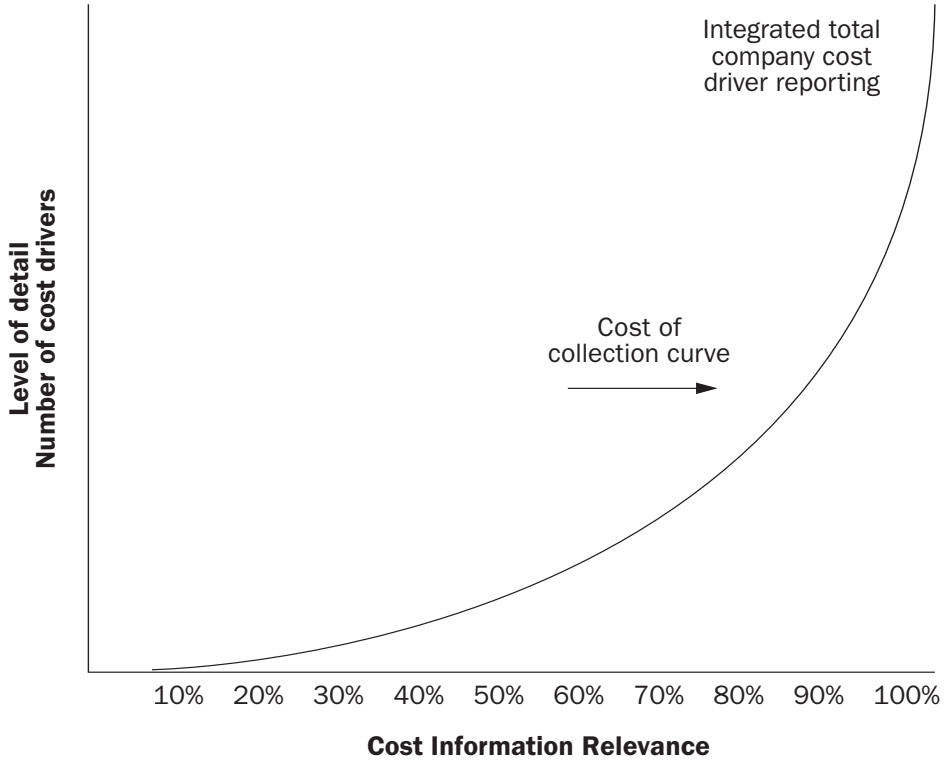
The time spent recording past results and detailing required future actions serves to reinforce the learning process, communicate and assess progress, and adjust the detailed implementation plan to accommodate unforeseen problems and concerns. When a building block implementation approach is used, it is even more important to record the sequence, results, and issues surrounding the activity analysis and development of ABC estimates.

Gathering and Analyzing Data

During the planning stages of the implementation, emphasis is placed on gathering information and data to document the purpose, expectations, and objectives of the initiative. As attention turns to activity analysis and the creation of the ABC estimating system, data gathering takes on more importance as the key to understanding the existing knowledge base in the organization. To complete the activity/product-costing step, information about the consumption of resources by activities needs to be collected and analyzed.

The recommendations, conclusions, and identification of next steps that take place during documentation require a significant amount of data and information. As suggested by Exhibit 2, though, data gathering is an integral part of every phase of the implementation. The payoff to ensuring that the company can achieve total integration of the ABM system lies at the heart of maximizing the relevance of the information it creates. Because it can consume between 25 to 50 percent of the total effort needed to complete the implementation, creating efficient and effective data-gathering methods is an essential part of the ABM initiative.

EXHIBIT 2. RELATIONSHIP OF COST OF DATA COLLECTION TO ITS POTENTIAL RELEVANCE



Source: Originally developed by Chuck Marx, Arthur Andersen. Reprinted in Player and Keys, 1995: 30.

Developing an Ongoing Data Collection and Reporting System

The development of a cost-effective, efficient data collection and reporting system is the final aspect of a holistic ABM implementation. The information gathered during implementation provides a static snapshot of the activities, and their resource usage, at one particular point in time. While much is learned from this snapshot, ongoing data collection is necessary to reap the total benefits of the ABC/ABM initiative. To be useful for strategic and operational decision making, activity information must be collected and reported on a continuous basis.

There are two major stages in implementing the ongoing ABM information and reporting system:

- establishing the basic data collection and analysis procedures and
- ongoing system maintenance.

During the first stage, it is often necessary to create new methods for collecting data and new

driver-based measures to support the system's use. A hands-on effort, stage one requires the active support of the information systems group as well as the collaboration of managers across the organization as new measures, data formats, and due dates for various measures and reports are developed.

In the second stage, the maintenance requirements of the system are addressed. Activities, measures, products, and services are constantly added and deleted within an organization; the system must be adjusted for each major change. One of the best ways to ensure this is to implement an ABM-updating process as a core part of the firm's project management protocols.

Achieving Full Integration

Integrating ABM with existing management practices is necessary to achieve its full benefits. If ABM is treated as a separate, freestanding management initiative, it will not survive. The real value of ABM comes from the knowledge and information it provides to support improvement efforts and the management decision process. Full integration of ABM within the fabric of the organization's other information and management systems is complete when people in the organization embrace activity management, take ownership, and internalize it as a better way of doing business and making decisions.

Full integration does not occur overnight. Fully integrating ABM with current and existing organizational philosophies, cultures, preferences, and values can take years to complete. Ongoing efforts are required to drive activity-based thinking deep into the organization. Attention must be paid to linking ABM with the basic information systems used to manage the organization and its ongoing operations. Achieving full integration should be the overall goal and the final measure of success for any ABM initiative.

VII. COMMON ABM PITFALLS AND SOLUTIONS

Understanding the steps in effectively implementing ABM is important, but as anyone who has actually undertaken a project of this magnitude knows, many pitfalls and problems may occur during the life of the project and beyond. Knowledge of these pitfalls helps an implementation team develop methods to avoid them and to deal effectively with problems as they occur. Each stage of the implementation process brings with it its own unique challenges, as the following discussion suggests.

Planning

During the planning phase, a number of distinctive pitfalls and problems can plague the implementation effort, including:

- lack of senior management buy-in and commitment;
- failure to gain complete agreement on implementation objectives;
- planning team's inability to articulate why it is doing the project;
- failure to create a dedicated project team; and
- lack of understanding of the kinds of financial, operational, and strategic information the organization expects.

These pitfalls and problems are not insurmountable. In fact, getting ABM off the ground is more than possible—it's probable, especially when the following solutions are applied to deal with the common pitfalls of the planning phase:

- link the initiative to key business objectives and clearly articulate how the ABM project will deliver improvement in that area;
- find an executive who owns the initiative, will hold an umbrella over it, help it to develop, and showcase the benefits of using ABM;

- expose senior management to potential benefits of ABM through visits to other successful companies and via benchmarking reports;
- find competitors who are using or experimenting with the approach;
- understand fully the ongoing commitment costs of ABM before adopting it;
- ensure the complexity of ABM is not underestimated;
- select a team leader to lead the ABM project who understands the business and works well with people from many functional areas within the company;
- ensure the time to complete a comprehensive ABM implementation is not underestimated; and
- train employees on how ABM will be used.

EXHIBIT 3. HOFFMAN-LA ROCHE ACTIVITY-BASED MANAGEMENT TRAINING SCHEDULE

	Responsibility	Completion Date
1000 Project Organization		
· 1100 Perform "ABM Introduction" mini-training		
· 1200 Finalize project calendar		
2000 Activity Analysis		
· 2100 Perform "Activity Analysis" mini-training		
· 2200 Schedule and conduct process focus groups		
· 2300 Prepare preliminary Activity Dictionary		
3000 Model Design		
· 3100 Perform "ABM Software Refresher" mini-training		
· 3200 Design preliminary model schematic		

Source: Player and Keys, 1995: 85.

In regards to training, for example, the New Jersey subsidiary of Hoffman-La Roche, a major pharmaceutical company, conducted training classes in necessary processes immediately before the implementation team was ready to perform the particular ABM phase. At the beginning of the activity analysis, the project manager explained concepts such as the activity dictionary, how activities would be defined, and the definition of drivers. Before the model design phase began, the project manager walked the members through procedures as they actually built a sample model on the software. Exhibit 3 illustrates the training schedule used by Hoffman-La Roche.

Implementing ABM is part of an overall organizational commitment to the continuous improvement philosophy. At the heart of this philosophy is the notion of the "5 why's." The essence of this concept is that the driving purpose behind any improvement lies in understanding the root cause of poor performance. Asking team members to answer a string of "whys" facilitates the root cause questions until the basic assumption or problem is isolated.

How can the "5 why's" be used to deal with planning pitfalls? By gaining consensus among the team members on the problems the ABM implementation will address, and how the planned improvements will help the organization achieve its strategic goals.

Specifically, the questions that could be asked and answered are:

- Why is the company undertaking the project?
- Why will ABM make this a better company?
- Why do we need to understand product costs?
- Why do we need to understand what causes costs?
- Why is reducing and avoiding costs important?

If the implementation team or sponsors can reach agreement on the answers to these questions, the critical linkage between ABM and the strategic and operational objectives of the organization can be clearly and cleanly defined and articulated.

Having defined the reasons behind the project, as well as its preliminary objectives, it becomes time to communicate the potential benefits and challenges the ABM initiative represents. One useful source of convincing information is benchmarking. External benchmarking projects can result in useful "straw men" models of ABM implementations and operations. Looking at best-in-class, or best practice, uses of ABM information can help sway an otherwise reluctant management team. Serving as an objective source of data and documented results, benchmarking can help the implementation team overcome a significant number of barriers in the planning and ongoing application of ABM concepts to the organization.

Regardless of what method is used to gain detailed information of proven ABM successes and benefits, it is important to factor the Awareness, Buy-in, Ownership (ABO) Continuum[2] into the planning efforts. Specifically, the ABO Continuum is:

- *awareness:* Executives know something important is happening, and they show interest in it. Managers seek to learn more about the proposed change, attend meetings, and challenge traditional methods.
- *buy-in:* Executives begin to take personal responsibility for the change. They are willing to commit time, people, and money to the change.

2 The ABO Continuum is a term coined by Andersen Consulting and should not be used without the company's knowledge and appropriate attribution to the original source.

Executives begin to implement the change and communicate the benefits of the change to other people in the organization.

- *ownership:* Executives assume ultimate responsibility for the change. Managers recruit others to help apply and teach new concepts and initiate efforts to continue the process of change.

In moving through the ABO Continuum with senior management, the ABM team can simultaneously address the commitment pitfall and gain a better understanding of their expectations for the financial, operational, and strategic information the system needs to provide. During the planning phase, then, it is important to gain commitment, and that is done by gaining a solid understanding of what ABM can and will do for the organization and its stakeholders. Only when these objectives and benefits can be articulated and agreed on should the project move into the next phase of implementation.

The leadership and composition of the ABC/ABM implementation team should reflect the major focus of the project. For instance, if the primary information needs of a company are centered in marketing and distribution (e.g., customer or product line profitability), team membership should be heavily weighted in favor of these two functions. Similarly, if manufacturing is the area of major cost and concern, the ABM team should be populated with key representatives of the manufacturing management team.

Analyzing Activities

While analyzing activities, the structure of the project and the implications of its scope for the organization begin to be felt. The effort can seen unwieldy at times, as suggested by the following common pitfalls:

- the number of activities for which detailed information must be gathered seems overwhelming;
- there appear to be no significant activities;
- resources dedicated to the project are inadequate to support the analysis, resulting in the project taking a back burner to other, "more important" work;
- there is inadequate attention to training to build and form internal expertise; and
- failure to communicate to employees the purpose behind the project and its questions leads to the potential for negative feelings and defensive behaviors.

An ABM implementation faces many of the same challenges and problems as any major change initiative. The lessons learned during earlier efforts to implement total quality management (TQM) and ISO 9000(+) certification procedures and to create a learning organization apply to the ABM project. It is critical that earlier lessons be revisited, both to increase understanding of the ABM effort and to build on the successes of and knowledge gained from these earlier efforts. Specific ways the pitfalls of the activity analysis phase can be addressed include:

- have a clear understanding of why the initiative is being undertaken. What business problem is it trying to solve?;
- focus on the right level of detail; 10,000 feet is too high, but it is just as bad to get too close to the ground early in the implementation process;
- involve employees in the selection of activities and cost drivers;
- include information on how activities interrelate instead of detailed data on individual tasks; and
- limit the number of activities to those that are significant.

Each layer of detail in an ABM system translates to data collection, maintenance, and management challenges. According to experienced users, the amount of data to be managed grows exponentially as the level of detail is expanded. Unless an organization wants to dedicate significant resources to storing and retrieving ABM data, it is critical to pare down the data and detail it collects.

An organization's ABM success depends not on the number of activities or drivers it uses but on how relevant that number is to a specific business objective. For example, Tektronix has two activities and two drivers in the cost system utilized in its oscilloscope plant. On the other hand, Caterpillar uses multiple cost systems, many cost centers, and several overhead bases. Both companies are leaders in their respective industries and have been successful in competing against foreign competition.

One way to effectively reduce or hone in on the appropriate level of detail is to return to the questions used during the planning phase to set the scope of the project. One of the biggest dangers faced by the ABM project at this stage is "runaway scope." The plan is important because it provides an ongoing reminder and source of discipline to keep the scope of the project from creeping.

Reaching an agreement on which activities are significant and which are not is a highly political exercise. Everyone feels the work they do is important. A failure to accommodate these beliefs can set the project up for failure. To reach the conflicting goals of controlled scope and organizational commitment to the ABM effort, it is useful to run a series of group brainstorming and problem solving meetings. During these meetings, individuals who actually perform specfic activities can negotiate and compromise openly to arrive at a set of activities, processes, and definitions acceptable to all. Granted, these meetings will consume implementation resources and may lengthen the project, but the ultimate benefits will greatly outweigh any up-front costs.

Another way to address problems surrounding identification and definition of core activities is to ask the management team or a similar group to think about the organization from the customer's perspective. What things are done to service directly, or indirectly, the needs of current and future customers? What activities are critical to ensure the long-term health and competitiveness of the organization? Finally, what activities are needed to support the needs of other stakeholders? Categorizing activities by who is served by their output can help focus attention and gain agreement on the things the company must do

EXHIBIT 4. VALUE-ADDED DECISION RANKINGS

Value-added VA1: Is the activity of value to external customers? VA2: Is the activity required to meet corporate requirements?
Nonvalue-added VA3: Is the activity required for sound business practices? VA4: Is the activity of value to internal customers? VA5: Is the activity a waste?

well if it is going to survive, let alone prosper, today and in the future.

Dayton Technologies, a producer of components for vinyl window manufacturers, determines whether an activity is value-added by asking whether or not the customer receives any benefit. An even tougher test is, "Would the customer pay for this activity as part of the product or service transaction?" This approach to defining and quantifying value is detailed in Exhibit 4.

Costing Activities/Products and Services

The costing activities/products and services phase of an ABM implementation may be mechanical, but that does not mean that it is not fraught with its own unique challenges and potential pitfalls, such as:

- inaccurate assignment of costs to activities and to cost objects;
- resource and activity drivers are at too high a level of detail;
- activity drivers do not adequately reflect the consumption rate and pattern of their respective activities;
- capacity, or potential of the resources in the pool to support work, is not defined;
- old habits, such as allocation of top-level costs, are not broken;
- responsibility and controllability of the costs is not cleanly identified; and
- excessively complex assumptions and assignments are made.

Reaching the right level of detail in the ABM cost system begins with understanding the core activities, but it cannot end there. Why? Because the basic, unavoidable fact is that many, if not most, of the resources used by a company are joint, or shared among several areas or users. ABM cannot make this fact go away. In fact, one of its major benefits is to force the organization to deal directly with the issues surrounding shared resources and to determine who uses a resource or activity, why, and how much. This information can go a long way in creating cost consciousness and in reducing the total costs incurred by the organization. What remedies can be used to deal with these potential problems? Some approaches that have been used in successful ABM implementations include:

- making data integrity a high priority;
- reconciling ABM data to the financial accounting system;
- avoiding using revenues as a driver;
- avoiding allocating costs when they cannot be assigned accurately;
- using ABM methodology that is consistent with accepted practice;
- using total cost in decision-making and process improvement efforts; and
- using practical capacity to assign costs to cost objects.

An ABM system's value lies in its believability and its ability to support and direct the actions of the organization and its managers. It is not just another accounting system.

It is during this mechanical phase of the project that the focus can be most easily lost. There is also significant danger that the ABM initiative, advertised as a management tool, will begin to be seen as an accounting project during the *costing activities/products and services* phase. The project team must actively and frequently communicate the objectives, goals, and scope of the project during this phase, keeping everyone's eyes on the "big picture." Succumbing to the comfort of the detail at this point in the implementation process can lead to the ultimate failure of the entire ABM initiative.

Whenever an excessive focus on the detail, or myopia, begins to creep into the implementation, it is critical to return to the original planning documents and the strategic objectives they define. The integrity of the data entered into the ABM system is clearly a high priority if the system is to be accepted by the organization and its managers, but excessive attention to detail at this point can also be dangerous. It may be useful to create a separate permanent team to ensure the integrity of the data today and in the future. This team can report directly to the ABM project team, which is charged with keeping the implementation moving toward its larger goals.

The final product of the ABM implementation is clearly no better than the quality of the data it relies on to complete its analysis, planning, and reporting functions. Ensuring this quality and reaching sustainable solutions to the knotty problems of shared resources must be a primary concern of the implementation team. If inadequate attention is paid at this juncture, the old adage of "garbage in—garbage out" can become a reality.

Analyzing Data and Documenting Results

At this point in the ABM implementation, new information becomes available to managers at all levels of the organization. It is a "moment of truth," one that brings with it its own unique challenges and pitfalls, including:

- managers do not take action on the ABM information;
- no activities are eliminated;
- cost drivers are not evaluated;
- some parties are adversely affected by the ABM information; and
- a high degree of disbelief in the new numbers develops.

Prior to the *data analysis and documenting results* phase, the ABM system is an abstraction, a concept. As the costing phase is completed, though, the system begins to operate in a very visible way. Given that the output is good news, bad news, or old news, it is very important to actively address the implementation pitfalls at this stage. Failure to do so can result in an implementation that is in name only. Some ways these pitfalls can be addressed are:

- require managers to justify inaction as well as action on ABM information;
- focus ABM not just on cost and cost reduction but also on value and value creation;
- monitor the number of changes made using the ABM information;
- ensure that a large number of people are receiving and using the information;
- hold training and information sessions to discuss the system and its reports; and
- hold feedback sessions to gather criticisms, concerns, and problems with the ABM system from affected managers.

Personal resistance to change is the major behavioral barrier facing any change effort. ABM is not immune to this problem. Inertia, the tendency of a body at rest to remain at rest, is as common a problem to human organisms as it is to a rock. It takes energy to move away from the status quo, to embrace a new way of thinking about and doing work. With this newness comes the risk arising from fear of the unknown, lack of understanding of the new system, and uncertainty regarding how ABM will affect their job, performance, and standing in the organization.

In many ways, ABM leaves managers feeling they are playing the same old game with a new set of rules. Accounting is the language of business, a dialect that defines success and failure, objectives

and results. ABM changes this language in many subtle and not so subtle ways. The impact of these changes hits hardest the people who knew the old game well, the former "stars" of the organization. These stars normally have significant personal power and influence; when they are uncomfortable, major barriers to change are created.

At the departmental level, ABM meets another implementation challenge. ABM does not focus on departments and functions; it is defined on activities that are often cross-functional in nature. To managers accustomed to a functional structure, it is very difficult to understand what ABM really means and how it can be used effectively. The shift to a nonfunctional, interdepartmental focus can prove very valuable to the organization as a whole, but it can also pose a very real threat to the power wielded by individual departments.

One key to overcoming these fears is training. The use of role playing, simulation-based scenario analysis, and case exercises can help employees learn about a new system and its impact. Through "play," threatened individuals can find new ways to succeed using approaches and information more closely tied to the strategic and operational goals of a process-driven organization.

If the resistance encountered is judged to be too large to manage through training alone, it may become necessary to add a layer of detail to the ABM system at the intradepartmental level. Activity costs may then be "rolled up" from the data at the departmental level. While this solution adds cost and complexity to the ABM system, it may provide the essential compromise needed to gain departmental and organizational support.

An ABM system will provide new information and insights, but unless it is acted upon, no benefits will be reaped. Effort must be made to emphasize the decisions ABM information can support, not the value of the numbers themselves. Time must be spent familiarizing managers with this information and finding ways to apply it effectively to issues that matter to them. Several ways the "nonuse" pitfall can be addressed include:

- place more emphasis on involving managers from across the organization in the design and development of the ABM system;
- spend more time training managers how to use the information;
- set specific objectives for the ABM system that tie directly to the types of decisions it is meant to support;
- target certain managers who are most likely to use and benefit from the ABM system;
- identify a champion in the organization who will use ABM and encourage others to use it; and
- consider a pilot ABM system to generate information for specific decisions so early successes can be achieved.

The pitfalls and challenges in the *data analysis and documentation* phase shape the future of any ABM system. Spending time to familiarize people with the system, to deal consciously and actively with the politics of change, and to mediate the risk and fear individuals experience is as important as getting the numbers right. ABM is an information system; if the information is not used, it is useless.

Developing an Ongoing Data Collection and Reporting System

Moving from planning to implementation and into operation is the natural sequence of any successful project. As this transition takes place, it

becomes increasingly important to solidify the project and its gains and to create sustainable frameworks for action. While the need to create effective, efficient data collection and reporting systems is essential to any ABM effort, it is also a stage fraught with its own potential pitfalls, including:

- driver data collection is primarily manual;
- no provision is made for the regular updating of the ABM information;
- reports do not contain the information managers need or want;
- reports are too long;
- reports contain too many numbers;
- a very small font must be used to get all the numbers on one sheet, making them unreadable;
- unnecessary accounting terminology is used in the reports;
- it takes too long to capture the data; and
- labor collection, if used, is cumbersome.

Technologies such as bar coding and imaging can help a company deal with some of these data-driven problems, but the key to their solution lies in good planning. Some ways in which an ABM implementation can plan for and overcome these data and reporting pitfalls are:

- minimize the effort required to reconcile data and balance reports, as well as to update and maintain the system;
- develop a written plan for how the system will affect decision making. Note what the decisions are, how the system will help in making them, whose responsibility they are, and when they will be made;
- avoid complexity when possible;
- involve information services systems people early in the ABM system design and development stages;
- use graphics and summary figures as the primary report, providing detailed information in an appendix or query format;
- use innovative data display and user interfaces; and
- provide users with the flexibility and capability to build customized reports.

Reports that are difficult to understand are not going to be used. Complex formats and excessively detailed reports do not reflect favorably on the financial department. They simply suggest to users that whoever prepared the report was not trained to communicate information effectively and efficiently.

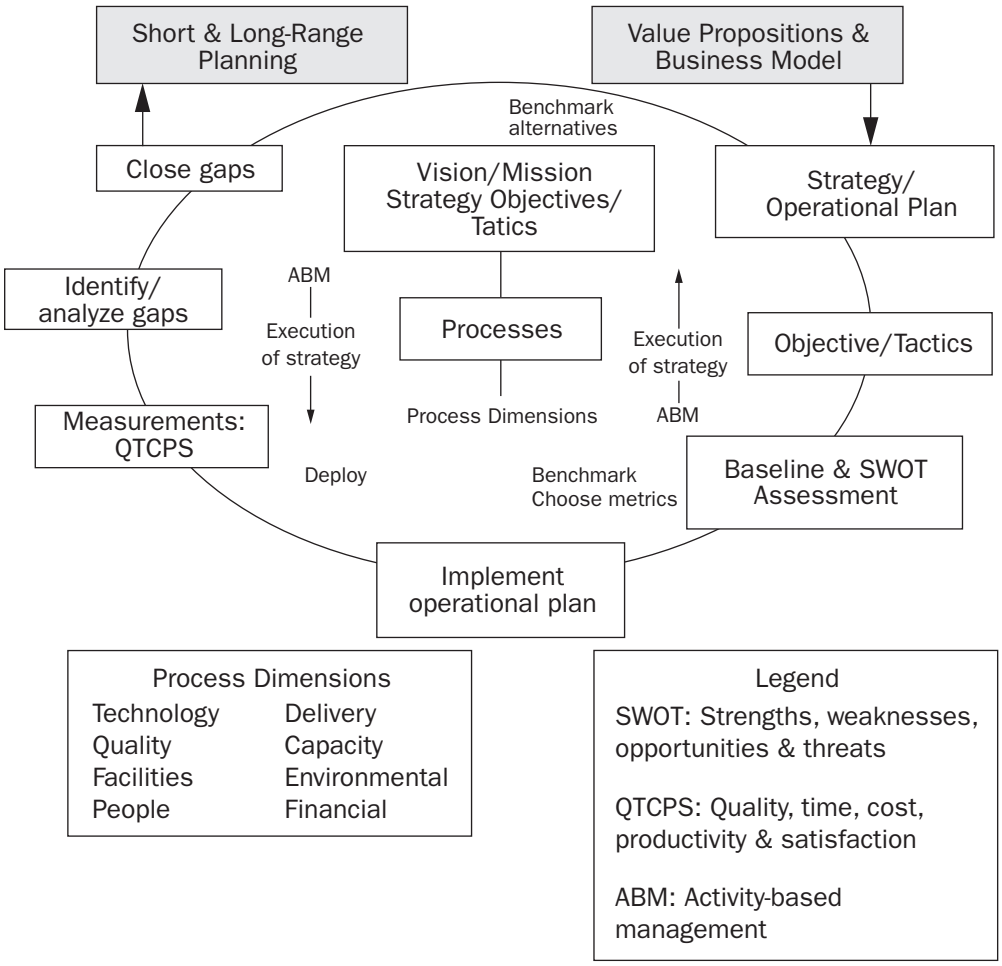
A report that is easily readable but that arrives too late is also of little value. Interactive, real-time desktop reporting and analysis systems and tools provide a way to reduce the physical effort required to get information to managers who need it. Another way to ensure information is there when it is needed, and only when it is needed, is to link report frequency with the decisions they support. Strategic decisions do not require daily information; the detail would hide the major trends essential to managers at this level. Monthly reports are too late for operating managers who are putting out fires and actively managing day-to-day detail.

Users, the customers of the ABM system, should be actively recruited to provide guidance in the creation of reports and the development of decision support tools using the ABM database. What information do they, the users, need and want? Have the reports been explained to users so they can use and understand them? To find answers to these questions, management accountants must get close to the organization, leave the safety of their offices, and actively engage in dialogue with individuals at every level and functional area within the company.

Achieving Full Integration

Full integration of ABM information with the existing data and report structures of the organization signals a mature implementation. Once integrated, the ABM data can be fine-tuned and directed toward areas of major need or opportunity, yielding value-added analysis and decision support. It is at this stage that the ABM system comes into its own, leaving the land of novelty and entering into the world of value creation and continuous improvement. No longer a new tool or interesting project, a mature ABM system can be linked with other forms of information to create a balanced, well-developed analysis of past, current, and future performance.

EXHIBIT 5. ABM AND THE STRATEGIC MANAGEMENT PROCESS



Source: Player and Keys, 1995: 155.

While it is difficult to argue with the fact that full integration is a desirable goal for the ABM system, this final stage still suffers its own set of unique pitfalls, such as:

- no formal system exists for documenting suggestions for improvement in the ABM system;
- there is no champion of the ABM system who uses ABM and encourages others to use it;
- no one has taken ownership for the system in decision making;
- the ABM project is seen as another competing improvement program, or worse, another management fad; and
- excessive emphasis is placed on cost reduction rather than increasing profits or creating a sustainable competitive advantage.

An organization at the full integration stage of ABM implementation is not looking at success or failure but rather the payoff it will receive for the investment made in creating and maintaining this new form of information. Since achieving a high payback on every investment made is one of the determinants of long-term profitability and success, reaching the integrated level of performance is vitally important. Exhibit 5 details the role the fully integrated ABM system plays at AT&T Paradyne.

What solutions can be used when pitfalls are plaguing a company seeking full integration? Approaches include:

- integrating and linking ABM with existing performance measurement systems, improvement initiatives, reward systems, value-based management, strategic and operations planning, training and education initiatives, management control systems, and core competencies;
- ensuring that system design specifications take into account techniques such as benchmarking and target costing;
- linking the ABM information system directly to compensation;
- transferring ownership of the system to line management;
- implementing and emphasizing continuous improvement;
- training managers on how to use the ABM information; and
- not defining the implementation as an accounting project.

To stop short of full integration of the ABM system is to leave the organization open to downstream problems, including the gradual erosion of confidence in the ABM system, its isolation from mainstream operations, and the potential for disagreement between the information generated by the ABM system and other information sources in the organization. Careful analysis of the existing management control process of the organization, its culture, decision-making style, and related key factors can make it easier to match the key features of the ABM system against existing structures and practices.

Only full integration can ensure that everyone receives the same clear, unambiguous information when exploring an area of opportunity or managing existing processes. Keeping everyone involved with the ABM system and its integrity, through rewards, culture, and compensation, can guarantee the project evolves into a sustained effort. People support what they create. An ABM system that is alive, open to change, and improving through the input and direction of the people who use it is a success.

The pitfalls and solutions described here have been developed through the experience of organizations across the globe that have implemented ABM. Having laid out the path to this accomplish-

ment, what best practices have emerged? These lessons from the field complete the picture of what does, and does not, support the successful implementation and operationalization of ABM.

VIII. BEST PRACTICES IN ABM

In 1997, the American Productivity and Quality Center (APQC) and Arthur Andersen collaborated to conduct and publish a major research project on ABM implementation. The areas of focus for this project were systems, reporting, and transfer of ownership best practices.

Systems Best Practices

- Companies are investing increasing amounts of resources in systems integration and systems linkages.
- Data integrity is given high priority by best practice firms.
- Access to information is viewed as a key issue in the successful use of ABM information systems.
- Timing and its multiple dimensions are central in systems decisions.
- The information system resource commitments made by best practice companies are appropriate to the decision applications.

ABM best-practice companies place significant emphasis on installing systems, procedures, and methods to collect and report activity-based information on an ongoing basis. Systems integration and linkages are emphasized for several reasons. The first reason is one of cost. ABM systems not integrated and linked to the existing financial and operations systems of the company are difficult and expensive to update and maintain. Another reason is one of timeliness. Linkage and integration to existing systems ensures that ABM reports are available at the same, or nearly the same, time as other financial and operating reports.

Systems integration can occur at different levels — across one organization (by functions, regions, processes, or the enterprise as a whole) or across multiple organizations. Efficient customer response (ECR) is a good example of systems integration across the value chain (suppliers, producers, distributors, retailers, etc.).

The Activity-Based Information System (ABIS) at BellSouth is a large-scale, fully integrated system. The basic system architecture is a database (Oracle/Visual Basic application running in a client/server environment) linked to and integrated with source financial (cost) transactions and operation information and transactions from existing information and reporting systems.

Reporting Best Practices

- Customization of reports is viewed as an ongoing part of systems development.
- There is greater recognition of the benefits of reports comparing costs (and other variables) across multiple units.
- Reports at best-practice companies give high priority to revenue enhancements and value creation.
- Innovative data display/user interface is viewed as a high priority.

ABM information is communicated to the organization through reports, reporting capability, and access to information contained in databases. Organizations design and implement ABM reports and reporting capability to provide cost and performance information about key and significant activities, the cost of products, services, customers, distribution channels, and other organization-specific cost objectives. They also design reports and reporting capability to track the resource and activity drivers used to trace, assign, and allocate costs. Reports and reporting capability highlight the costs for nonvalue-added activities and identify opportunities and cost drivers.

At best-practice companies, reports are designed so users can view information from many perspectives, in differing formats, and in relationship to other data. Many of the best-practice organizations use flexible executive information systems (EIS) to generate reports and information online to users. Graphical and other innovative report displays are used to illustrate important aspects of reports.

The CIS reporting capability at Caterpillar provides both summarized reports of product cost by prime vehicle and drill-down capability to offer all the details of the component making up the vehicle at the various inventoried levels. Roll-up reports of prime product cost with supporting detail are available down to the lowest nut-and-bolt level.

Transfer of Ownership Best Practices

- Linking ABM information to operational goals/objectives and improvement initiatives is crucial for success.
- Successful pilot tests/efforts prove the value of ABM initiatives through early wins.
- ABM implementations should be operationally funded and operations driven.
- Linking ABM information systems to compensation encourages operational and user ownership.

The real value and power of ABM come from the knowledge and information leading to better decisions and improvement. If people in the organization do not use the information (for whatever reason), the only creations are the sunk cost of development and implementation and the ongoing cost of maintaining the system until it is retired. Nothing may be more important to a successful ABM implementation than achieving ownership and accountability by the people who use ABM information to make decisions and effect changes in the organization. Likewise, nothing may be more difficult.

Many of the ABM best practices developed in leading edge firms reflect the lessons learned from managing the ABM project through its stages and their pitfalls. For each of these organizations, the key has been to continue to strive for improvement in the quality, relevance, and actionability of their ABM systems. Responding to customer demands, and seeking out the criticisms and concerns that can undermine the system, leads to best-practice performance for adopting organizations. Achieving ABM best practice is a journey, not a destination.

IX. CONCLUSION

After many years of experiments, successes, failures, and learning, ABM systems are proving they are here to stay. Much more than another form of accounting, ABM in best-practice firms lies at the heart of the decision-support process. Integrating ABM within the total information and management control system of the organization can lead to quantum improvements as vital links between operations and strategy, processes and customers, value and cost are defined, measured, and understood.

Achieving these results requires an organization to understand and address the common pitfalls and barriers to success at every stage of implementation. Whether during planning, activity analysis, costing, documentation, data gathering and analysis, development of the data collection and reporting system, or achieving full integration, the ABM system must include and draw on the insights of the people who will use it. When the people using the system take ownership, the implementation is a success.

Successful implementation of ABM will not look the same in every organization or follow the same path. Tailored to the unique strategy, structure, capabilities, and needs of the firm, ABM is a universally useful concept and system that can take on a multitude of shapes and uses. ABM data should meet the needs of the company's decision makers and support their efforts to create value for all stakeholders. The final measure of ABM success, then, is its use. ABM should drive change across the organization as new opportunities and innovative solutions to problems are revealed.

As best-practice firms have found, the ultimate payback for their ABM investment comes when the system achieves full integration with other information and management support systems. Integration is not an end point, though. It is, rather, a significant milestone in the ABM journey to create a dynamic and relevant knowledge base on which to build and support a sustainable competitive advantage. ABM is intricately linked to the growth and long-term health of the organization.

X. APPENDIX

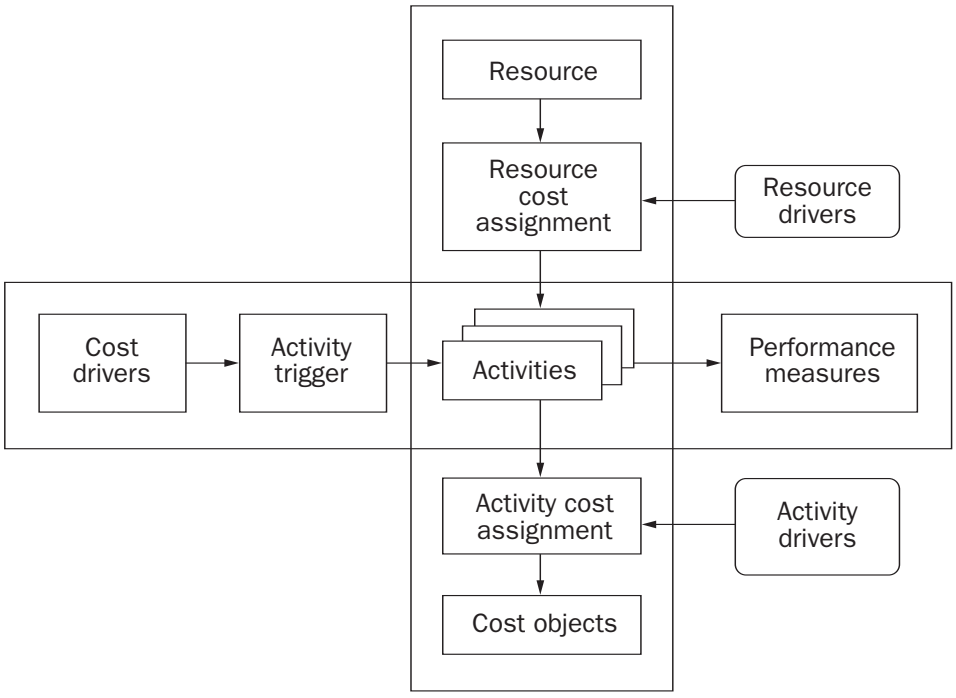
Expanded CAM-I Based Management Model

Two expanded models for the depiction of ABC and ABM within best-practice organizations have been developed by CAM-I. These models provide a more realistic view of what actually takes place in an organization adopting ABM than the earlier model depicted in the Institute of Management Accountants' SMA 4T. Depicted in the expanded ABC model below are the resource cost assignment and activity cost assignment and their respective databases of drivers. The concept of a "trigger," the link between the occurrence of a cost driver and the initiation of action in an activity, is also illustrated in the expanded ABC model.

The next exhibit details the CAM-1 expansion of the ABM model. It depicts the key relationship between ABC and the management analysis tools needed for an organization to reap the full benefits of ABM. ABC is a methodology that can yield significant information about cost drivers,

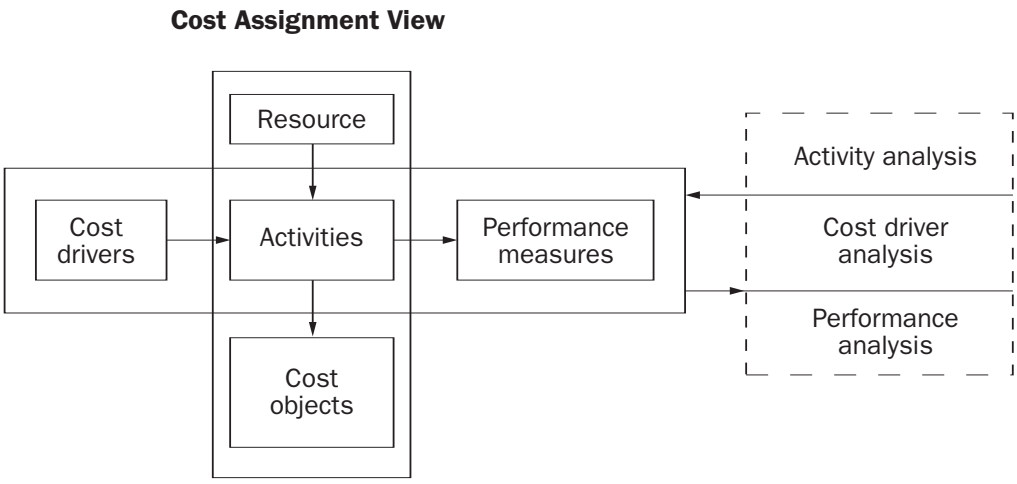
EXPANDED CAM-I ABC MODEL

Cost Assignment View



Source: CAM-I.

CAM-I ABM MODEL



Source: CAM-I.

activities, resources, and performance measures, while ABM offers the organization the opportunity to improve the value of its products and services to stakeholders.

Checklist for Evaluating ABM Software Packages

Software selection can occur at either the beginning or the end of the ABM implementation. Uniformity versus "customized fit" is the criterion that should drive the timing of the software choice. If made at the beginning, the software choice will shape the nature of the ABM models and reports developed. In some organizations, removing this ambiguity at the early stages of the project may be desirable, especially if multisite implementations requiring compatible downstream data are being undertaken. When management is more concerned with capturing the essential nature of the organization's processes and costs, though, it may make more sense to choose the software after the ABM system has been designed.

A key issue for an organization seeking to evaluate and choose a specific ABM software package is whether to implement the system through a stand-alone (or networked) PC or to integrate the system online with existing financial and operational systems. This stand-alone approach often works best for an initial implementation, providing a means to gain hands-on experience before attempting to define the ABM system within the larger information architecture of the firm.

Each of the major software programs for ABM accepts general ledger cost and operations data and reformats and reports the cost information in activity format based on the resource and activity driver assumptions specified in the system. Some examples of available software and vendors include:

- NetProphet II (Sapling Software);
- Easy ABC Plus/OROS (ABC Technologies);
- DaCapo Process Manager (ABM-1);
- CMS-PC (ICMS);
- CASSO (Automation Consulting);
- HyperABC (Armstrong Laing);
- TRIACM (Deloitte & Touche);
- Activa (Price Waterhouse);
- Profit Manager Plus 3 (KPMG Peat Marwick); and
- ABCost Manager (Coopers and Lybrand).

Many of the enterprise resource planning systems (ERP) are also developing or are incorporating ABC and ABM support modules.

Criteria to be considered in selecting a software package include price, available features, product and user support, and ease of use and user interfaces. If target costing, budgeting, or customer profitability analysis is to play a central role in the ABM system's use, the support of these features must be a key choice criterion. Finally, the track record of a software provider in terms of ongoing expansions and updates can play an important part in choosing a software provider.

The exhibit on the next page details a checklist for evaluating ABM software applications. Five key areas of evaluation are captured: vendor characteristics, general characteristics, documentation provided, conversion costs, and cost of the new system. The individual elements of this list may not apply to all settings. Relevant criteria should be the focus. It is also useful to weight the features based on perceived importance to the company, its strategic and operational objectives, and the overall success of the ABM effort. Finally, it is important to assess the vendor, seeking references and insights from existing customers wherever possible.

The right ABM software decision and subsequent integration is driven by four steps: (1) defining the business purposes the system will serve (strategic, financial, operation); (2) determining the implementation approach (stand-alone, one-time analysis, ongoing or repetitive analysis, or an integrated system); (3) evaluating software trade-offs; and (4) analyzing the cost benefit of selection. Each implementation approach has its place, and each may suggest different software solutions.

CHECKLIST FOR EVALUATING SOFTWARE PACKAGES

Vendor Characteristics

Length of time in business
Publicly or privately held
Dollar volume of software sales for last financial period
D & B rating (if available)
Size of technical staff
Years of experience
Equipment capabilities
Language proficiencies

General Characteristics

How many times it has been sold
Price structure for package
What is included in the price
Restrictions on use/sale of package
Minimum equipment configuration required
Language used
Estimated run times
1. Program by program
2. Total system

Estimated life of package

Documentation Provided

System flowchart
Logic diagram
Program listings
File layout(s)
Input/output formats
Operator manuals

Conversion Costs

Additional programs needed to convert/build files
Direct clerical effort
Management involvement
Education

Cost of New System

Processing cost
Equipment configuration charges
Additional peripheral equipment
Input preparation
Output handling
Audit and control costs
Continuing education (at any and all levels)
Program modification
Additional documentation

Source: Miller, 1996: 190.

BIBLIOGRAPHY

American Productivity & Quality Center. *Activity-Based Management II: Best Practices for Dramatic Improvement.* Houston, TX: APQC/CAM-I, 1997.

————. *Activity-Based Management.* Houston, TX: APQC/CAM-I, 1994.

Antos, John. "Activity-Based Management for Service, Not-for-Profit, and Government Organizations." *Journal of Cost Management,* Summer 1992, pp. 13-23.

Berliner, Callie, and J. A. Brimson, eds. *Cost Management for Today's Advanced Manufacturing: The CAM-I Conceptual Design.* Boston: Harvard Business School Press, 1988.

Beynon, Roger. "Change Management as a Platform for Activity-Based Management." *Journal of Cost Management,* Summer 1992, pp. 24-30.

Borden, James P. "Activity-Based Management Software." *Journal of Cost Management,* Winter 1994, pp. 39-49.

Brimson, James. *Activity Accounting: An Activity-Based Cost Approach,* New York: John Wiley & Sons, 1991.

Cooper, Robin. "Cost Classification in Unit-Based and Activity-Based Management Cost Systems." *Journal of Cost Management,* Fall 1990, pp. 4-14.

Cooper, Robin, R. S. Kaplan, L. S. Maisel, E. Morrissey, and R. M. Oehm, *Implementing Activity-Based Cost Management: Moving from Analysis to Action.* Montvale, NJ: Institute of Management Accountants, 1992.

Cooper, Robin, and R. S. Kaplan. "Measure Costs Right, Make the Right Decisions." *Harvard Business Review,* September-October 1988, pp. 96-103.

Hronec, Steven M. *Vital Signs: Using Quality, Time, and Cost Performance Measures to Chart Your Company's Future.* New York: American Management Association, 1993.

Tunes, J., and F. Mitchell. *Activity-Based Cost Management: A Case Study of Development and Implementation.* London, England: The Chartered Institute of Management Accountants, 1991.

Johnson, H. Thomas. "Activity-Based Management: Past, Present and Future." *Engineering Economist,* Spring, 1991, pp. 219-238.

————, "Activity Management: Reviewing the Past and Future of Cost Management." *Journal of Cost Management,* Winter 1990, pp. 4-7.

Johnson, H. Thomas, R. S. Player, and T. P. Vance. "Pitfalls in Using ABC Cost-Driver Information to Manage Operating Costs." *Corporate Controller,* January/February 1991, pp. 26-32.

Johnson, H. Thomas, and R. S. Kaplan. *Relevance Lost: The Rise and Fall of Management Accounting.* Boston: Harvard Business School Press, 1986.

Kaplan, Robert S. "One Cost System Isn't Enough." *Harvard Business Review,* January-February 1988, pp. 61-66.

Keys, David E. "Tracing Costs in the Three Stages of Activity-Based Management," *Journal of Cost Management,* Winter 1994, pp. 30-37.

Miller, John A. *Implementing Activity-Based Management in Daily Operations.* New York: John Wiley & Sons, 1996.

O'Guin, Michael C. *The Complete Guide to Activity-Based Costing.* Englewood Cliffs, NJ: Prentice-Hall, 1991.

Ostrenga, Michael R., T. R. Ozan, R. D. McIlhattan, and M. D. Harwood. *Ernst & Young's Guide to Total Cost Management.* New York: John Wiley & Sons, 1992.

Player, Steve, and David Keys. *Activity-Based Management: Arthur Andersen's Lessons from the ABM Battlefield.* New York, Master Media, Ltd., 1995.

Raffish, N., and P. Turney, eds. *The CAM-1 Glossary of Activity-Based Management.* Dallas, TX: CAM-I, 1991.