

Are You Satisfied with Your Cost Management System?

Manufacturers that have implemented ABC are, this study shows.

BY DAN W. SWENSON, CMA, AND DALE L. FLESHER, CMA

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The 1980s witnessed an explosion in new manufacturing methods as customers demanded better quality, faster response times, and lower costs. As the decade progressed, manufacturing firms recognized the need to improve their cost management systems to support these changes. Prime examples can be found in a 1987 study by Howell, Brown, Soucy, and Seed that was sponsored by the Institute of Management Accountants (IMA) and the Consortium for Advanced Manufacturing-International (CAM-I).¹ This study established a baseline for management accounting practice in the "new manufacturing environment."

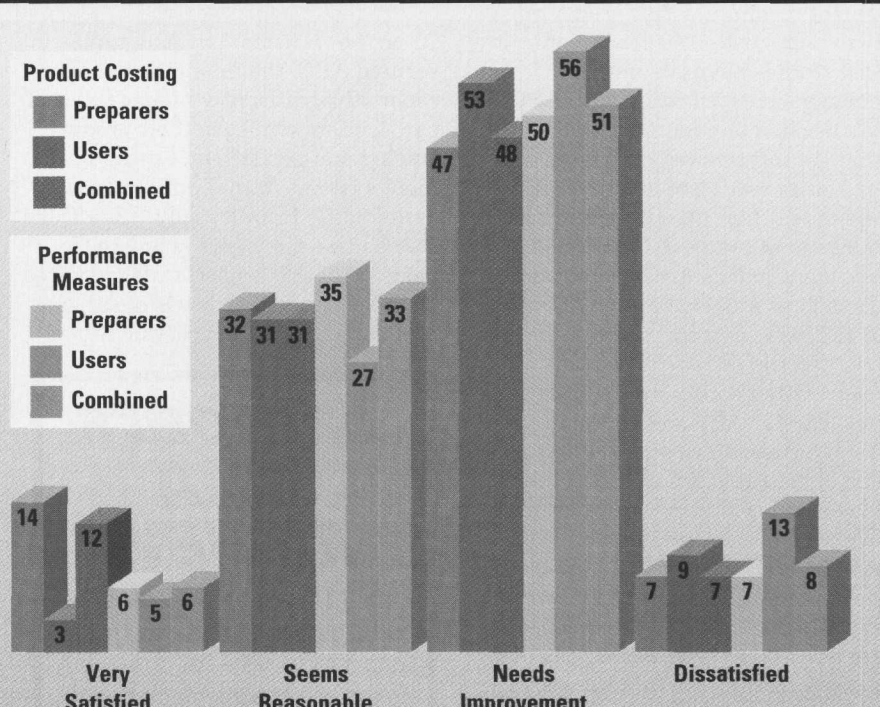
One major finding from the study was that more than 50% of the respondents from field visits and mail surveys either were "dissatisfied" with product costing and performance measurement or thought it "needed improvement." Responses were based on two questions: "How satisfied are you with your business unit's methodology for calculating product costs?" "How satisfied are you with your business unit's performance measurement systems?" (The results are summarized in Figure 1.)

The study also separated "preparers" from "users" of financial informa-

tion. A total of 260 preparers and 64 users responded to the survey, and the users generally were more dissatisfied than the preparers. Regarding prod-

uct costing, the users disagreed with the way in which overhead costs were allocated to products, so they did not trust the numbers. The performance

Figure 1. SATISFACTION WITH PRODUCT COSTING AND PERFORMANCE MEASURES (1987 STUDY*) PERCENTAGES



*These percentages are based on a sample of 260 preparers (financial managers) and 64 users (line managers) of the cost management reports. This study was published in *Management Accounting in the New Manufacturing Environment* by R. A. Howell, J.D. Brown, S.R. Soucy, and A.H. Seed, III, Institute of Management Accountants (then National Association of Accountants), Montvale, N.J., 1987.

Table 1. CHANGE IN SATISFACTION¹

	With Product Costing Methods			With Performance Measurement Systems		
	Preparers	Users	Combined	Preparers	Users	Combined
Average satisfaction (1987 study)	2.53	2.29	2.48	2.41	2.23	2.32
Average satisfaction for ABC firms (current study)	3.30	2.73	3.13	2.74	2.40	2.62
Improvement in satisfaction for ABC firms	0.77	0.44	0.65	0.33	0.17	0.30
Mann-Whitney Z scores	4.76*	2.12**		2.59*	0.97***	

¹A Likert-type scale was used to measure satisfaction with each component of the ABC system. A score of 1 was assigned for "dissatisfied," a score of 2 for "needs improvement," a score of 3 for "seems reasonable," and a score of 4 for "very satisfied."

*Indicates a significant improvement in satisfaction scores at the .01 level.

**Indicates a significant improvement in satisfaction scores at the .05 level.

***Not significant.

measurement systems appeared to overemphasize the measures of direct labor and underemphasize the direct material and overhead cost categories.

Since the Howell study was conducted, tremendous change has occurred in cost management theory and practice. The emergence of activity-based costing (ABC) is perhaps the most important new development in this area. ABC, with its innovative cost management techniques, has grown rapidly in popularity.² Yet few broad-based studies have evaluated management satisfaction with ABC.

We decided to undertake such a study. We interviewed managers at a broad cross section of manufacturing firms about their activity-based cost management systems. We contacted firms identified as ABC users in journals such as MANAGEMENT ACCOUNTING®, *Journal of Cost Management*, and the *Harvard Business Review*. Other sources were CAM-I, firms listed in ABC software and seminar advertisements, and contacts provided by colleagues, business contacts, and referrals following the interviews.

We used both face-to-face and telephone interviews during the data collection process because interviews generally result in higher response rates and allow verbal exchanges with the participants. The interviewees also explained most of their responses, so we compiled a rich data set.

We made 10 field visits to the corporate sites and plant locations of the sampled firms, and the interviews lasted from two to six hours. The field

visits were followed by 50 telephone interviews, bringing the total participation to 60 individuals at 25 manufacturing firms. Thirty-seven participants were financial managers who prepared the ABC reports, and 23 participants were line managers who used the activity information to support decision making.

RESPONDENTS ARE SATISFIED

For the 25 firms that had implemented ABC, the financial managers reported significantly higher levels of satisfaction with both their product costing and performance measurement systems than did the respondents to the Howell study.³ (See Table 1.) The line managers, who are the users of the ABC reports, also reported significantly higher levels of satisfaction with the product costing dimen-

sion of ABC when their answers were compared with the Howell study. Among users, however, the two studies reported no significant differences in satisfaction with the performance measurement systems.

Of course, satisfaction with a cost management system is a very subjective measure of its benefits. Unless the ABC information actually is used to support decision making, the information is of marginal value. Therefore, we also asked the interviewees about the way in which they implemented ABC and how they actually used the activity information to support decision making. These examples are in stark contrast to respondent comments from the Howell study.

As part of the original study, the researchers visited 17 progressive manufacturers. They found that competitive pressures were forcing the operating managers to make tremendous changes in their manufacturing operations. Yet management accounting practice was not adapting to the new manufacturing environment. One example was particularly disturbing. As the accounting systems were developed more for financial reporting than for management accounting purposes, managers were not using the accounting information for decision making. In one case the plant manager asked the engineering manager, not the controller, to develop a PC-based system for decision making.

The respondents in our study reported that they understood the need to integrate ABC with the other func-

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tional areas. Therefore, the ABC systems were not developed in isolation. Without exception, each firm in the sample used a multi-functional implementation team. The implementation teams interviewed operating personnel throughout their facilities to identify the activities performed and to assign costs to those activities. The interviews were used to determine the appropriate activity measures, or cost drivers, to trace overhead costs to products.

Essentially, the ABC systems were designed with a new philosophy: The user was viewed as the "customer" of the ABC information. Throughout the telephone interviews, our respondents frequently used the term "customer" to describe the users of accounting information. The mind-set of the financial managers was to provide relevant information to their customers inside the organization. Thus, the accounting function strived to satisfy its internal customers in the same way the company strives to satisfy traditional customers who are external to the firm.

STRATEGIC APPLICATIONS

In the 1987 study, the management accounting systems did little to support decision making. The accounting systems were used to monitor elements of cost, such as material and labor variances, but management had little confidence in the accuracy of the product cost information. Furthermore, there was little integration between the financial information in the accounting systems and the quality, delivery, and throughput information in the operating systems.

The companies in our study used ABC information to support both strategic and operational decision making.⁴ The strategic or product costing dimension of activity-based costing supports pricing, product mix, and sourcing decisions. ABC, by associating cost and activity information, also illustrates how activities affect costs. Therefore, many of the firms sampled used ABC to support operating decisions such as product design and process improvement. We provide specific examples of how the firms actually applied the ABC information to decision making in the following sections. (See Table 2.)

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Table 2. NUMBER OF FIRMS (BY INDUSTRY) APPLYING ABC TECHNIQUES FOR STRATEGIC AND OPERATING DECISIONS

Industry	Sampled Firms	Strategic Decisions		Operating Decisions	
		Product Pricing/Mix ¹	Product Sourcing ²	Product Designs	Process Improvement
Textiles	1	1	0	1	1
Forest products	2	0	0	0	1
Plastics	2	2	0	0	1
Chemicals	1	1	0	0	1
Tires	1	1	0	0	1
Consumer products	3	3	0	0	3
Medical products	1	1	0	1	1
Pharmaceuticals	1	1	0	0	1
Farm implements	1	1	1	1	1
Automotive	2	1	2	2	2
Automotive parts	3	3	1	1	3
Major appliances	1	0	0	1	1
Electronics	2	0	0	1	2
Computer	1	1	0	1	1
Aircraft/defense	3	2	2	3	3
Total	25	18	6	12	23
(Total as a % of Sample)	(100%)	(72%)	(24%)	(48%)	(92%)

¹ These firms use the ABC cost information when making decisions about pricing or deciding whether to discontinue products.

² These firms use the ABC information to decide whether to produce component parts internally or use an outside vendor. Even if the components are made internally, firms with multiple plants may use the cost information to decide where to place the production orders. Some of the sampled firms, however, do not use component parts in their manufacturing process and therefore would not use ABC for sourcing decisions. Examples include textile, forest products, and chemical companies.

Pricing/product mix. Table 2 shows that 72% of the sampled firms use ABC to support pricing and product mix decisions. The companies that participated in our study were quite diverse, and the reasons for their satisfaction with the ABC information varied considerably. As we examined them closely, however, we noticed that certain themes began to emerge. One such theme was that a firm's industry influenced the way in which it used the ABC information. For example, industries that secured business through a bidding process, such as automotive suppliers and the defense industry, were particularly satisfied with the product costing dimension of their ABC system.

An automobile parts supplier said that ABC significantly increased the accuracy of its product costing. The plant manager commented, "I wish I had it three years ago because three years ago we were filling the plant with business that we had quoted using a traditional cost system." According to the ABC model, the plant had submitted bids that were below actual cost for many low-volume products. The company gradually has moved away from this low-volume business, asking some customers to find alternative suppliers. The plant manager added, "As each of those items [low-volume production runs] fell by the wayside, our plant profitability made incremental jumps."

Accurate cost information also is critical to the defense industry, which bids on government contracts. One contractor discovered that its traditional cost system "subsidized" defense contracts by allocating excessive amounts of overhead to the commercial side of the business. The Department of Defense is an expensive customer because of its bureaucracy and "red tape." An operations manager at the defense contractor noted that defense contracts "require much more support and much more research at lower production volumes." Activity-based product costing put dollar amounts on these high-cost activities.

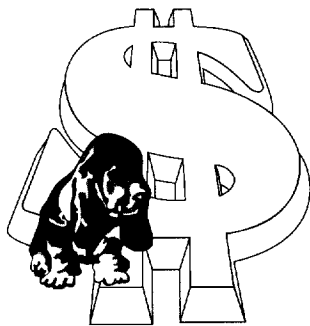
Product sourcing. Table 2 also shows that large manufacturers of expensive durable goods were the primary users of ABC for product-sourcing decisions, according to our sample. For these

manufacturers, component parts can be produced internally or outsourced to external vendors. Two automobile manufacturers, for example, use the ABC information to make decisions about their after-market parts business.⁵ This business is expensive to manage because of the high cost of maintaining an extensive inventory of parts. Replacement parts also can be expensive to manufacture, particularly when they are no longer part of the current production line. When the replacement parts are needed but are not in current production, the auto companies either re-tool for in-house production or move the work to outside suppliers.⁶ ABC accounts for the extensive batch-related costs of re-tooling and setting up the production line. These batch-related costs were understated by the previous cost system.

OPERATIONAL APPLICATIONS

Although not addressed in the How-

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ell study, the use of accounting information to support operating decisions is an important part of current cost management systems. None of our interviewees was satisfied with the cost control component of his or her accounting system prior to implementing ABC. A typical comment was: "The traditional accounting system provides no useful information to support operating decisions." Those firms which experienced severe price competition and were under the greatest pressure to reduce costs appeared to have the highest level of satisfaction with the operational dimension of their ABC systems.

Product design. Forty-eight percent of our respondents use ABC to support product design decisions. (See Table 2.) An automotive supplier uses cost information to facilitate communication with its customers about product design alternatives. Early in the design cycle, customers inquire about the cost of alternative product designs before they make a final decision. For example, customers will take an existing part, specify the design changes being considered for the new product, and then ask for prices. Within its ABC model, the supplier will adjust its "bill of activities" to reflect the new product's characteristics. Then the model will compute a cost for the proposed new product. The ABC facilitator at this company commented that, "We were just awarded a \$3 million annual contract, and we use the [ABC] data to do the costing and pricing."

At the Flight Systems division of a major defense contractor, requests for functional changes to the product are initiated from engineers with the firm as well as from customers. Management knew engineering changes disrupted the production process and increased the demand for support activities within the plant. But they did not know the full cost of each engineering change. ABC quantified these high-cost, controllable activities. The fundamental question was: Does the engineering change increase the product's value to the customer enough to justify its cost?

Process improvement. As illustrated in Table 2, ABC was used most frequently to support process improve-

ments (92%). The automotive industry provides an example of how some companies are using cost driver information to improve their operations. For example, a car manufacturer discovered that even though "waiting for an overhead crane" was identified as an activity measure for product costing purposes, crane scheduling actually drove the cost. By focusing improvement efforts on the cost driver (scheduling), management reduced waiting time by improving the scheduling activity.

Several other firms in our study used ABC information to quantify the benefits of other corporate initiatives, such as quality programs. Through a total quality management program, a paper company's employees identified numerous opportunities to improve quality. But without knowing the cost of each activity, they were ineffective at their improvement efforts. A financial executive commented, "Everyone's supposed to work on everything at the same time. With no measurement system, you have no way to prioritize the projects you should be working on first." ABC helped prevent the company from diluting its improvement efforts over marginal projects.

Despite the above success stories, not all manufacturing organizations have embraced activity-based costing completely. A computer company that was a pioneer in the adoption of ABC systems delayed ABC indefinitely at its printer division because the printer division's managers simply chose to not support the implementation effort. ABC did not take priority over other improvement programs, and a specific use for the ABC information had not been identified. In fact, ABC was viewed as competing with, instead of supporting, other initiatives. Yet ABC has been implemented very successfully at other divisions of the company.

PROS AND CONS OF ABC

The process of developing costs for activities has opened up many new applications for activity cost information, such as support for cost control efforts, product design decisions, new performance measures, customer profitability analysis, ABC for ad-

IMA Study Is Available

The IMA study described in this article, *Management Accounting in the New Manufacturing Environment*, by Robert Howell, James Brown, Stephen Soucy, and Allen Seed, III, is still available from IMA's Special Orders Department. The title code is 87210, and the price is \$40. IMA members are entitled to a discount. For ordering information, call 1-800-638-4427, ext. 278.

ministration costs, and value chain analysis. Many of the 1987 study's recommendations for change have been implemented by the firms in our sample.

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Converting to a new cost system is expensive, and it should support the ultimate user. Yet the respondents reported that they would change to ABC, even if "they owned the company and it was their money." Because of the implementation of ABC systems, operating managers are becoming more satisfied with the information provided by management accountants. One respondent summed up the feelings of most of the group with the following statement: Virtually no one says "that's the wrong thing to do, or what we have now is good enough. It's not a question of right or wrong—it's a question of resource availability." ABC seems to meet with satisfaction nearly everywhere it goes, but implementation is costly and time consuming. Will that latter fact have an impact on the future of ABC? ■

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¹ R.A. Howell, J.D. Brown, S.R. Soucy, and A.H. Seed, III, *Management Accounting in the New Manufacturing Environment*, Institute of Management Accountants (then National Association of Accountants), Montvale, N.J., 1987.

² See, for example, R. Cooper and R.S. Kaplan, "How Cost Accounting Distorts Product Costs," *MANAGEMENT ACCOUNTING*®, April 1988, pp. 20-27; R. Cooper and R.S. Kaplan, "Profit Priorities from Activity-Based Costing," *Harvard Business Review*, May-June 1991, pp. 130-135; R. Cooper, R.S. Kaplan, L.S. Maisel, E. Morrissey, and R.M. Oehm, *Implementing Activity-Based Cost Management: Moving from Analysis to Action*, the Institute of Management Accountants, Montvale, N.J., 1992. In addition, magazines such as *MANAGEMENT ACCOUNTING*®, *Journal of Cost Management*, and *Harvard Business Review*, among others, publish articles about ABC fairly often.

³ The interviewees reported an even greater improvement in satisfaction with their cost management systems when they were asked to compare their product costing and performance measurement systems before ABC with their product costing and performance measurement systems after ABC.

⁴ Some researchers (and practitioners) prefer to use the term activity-based management (ABM) when they describe how the activity information is used to support operating decisions. Our study, however, defines activity-based costing very broadly to include ABM applications.

⁵ After-market parts are used to replace damaged or worn-out engine parts. Following the sale of an engine, many of the after-market parts are not needed until years later.

⁶ Instead of re-tooling or using outside vendors, one auto manufacturer copes with this problem by making "lifetime buys." Before replacement parts go out of production, the company will produce enough units to satisfy projected demand over the life of the product.