IT'S TIME TO STOP ACTIVITY-BASED

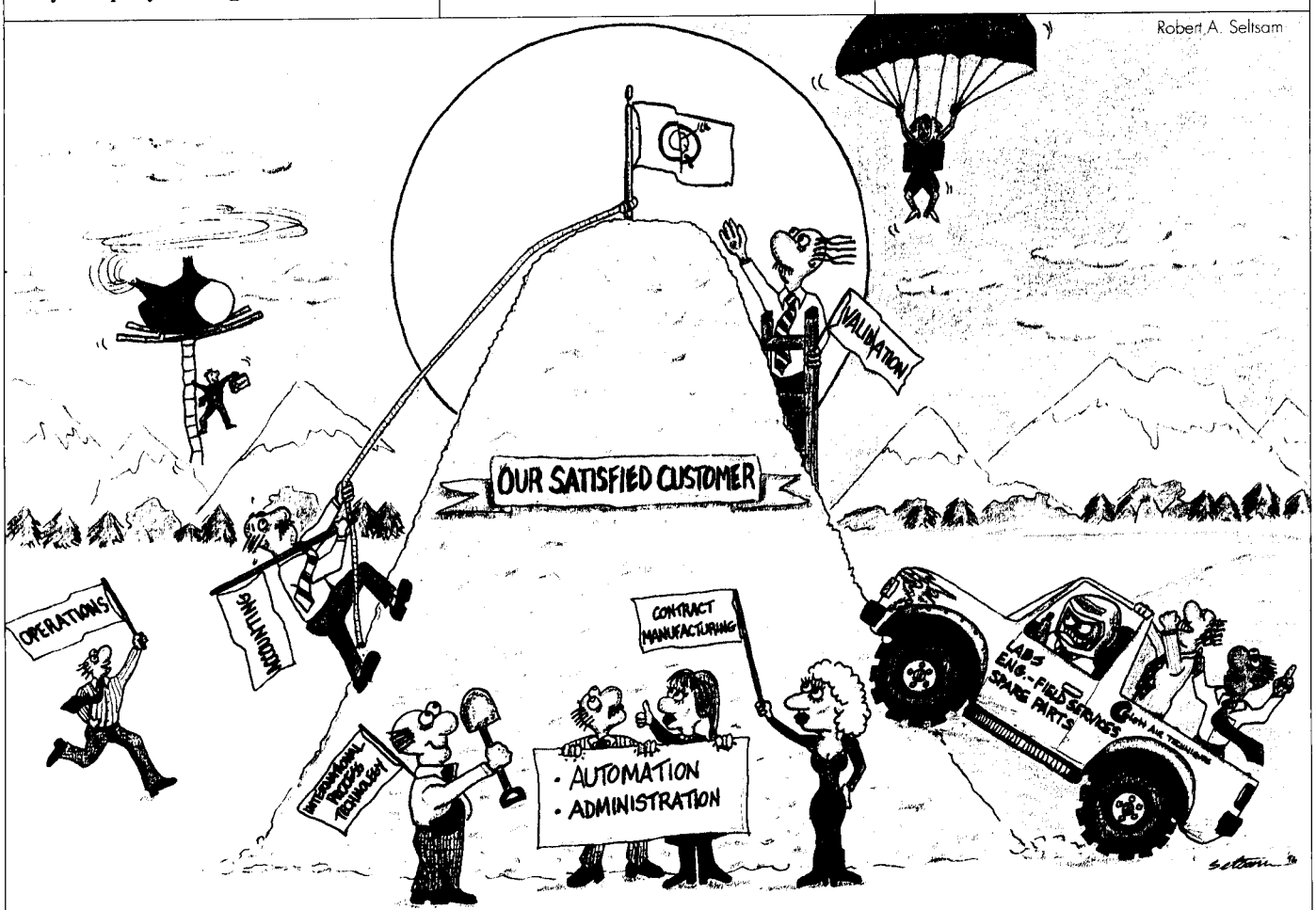
Start focusing on total

BY H. THOMAS JOHNSON

Activity-based" is a phrase managers hear almost as frequently, and with similar connotations, as the phrase "world-class." Have problems with profitability? Try activity-based costing. Difficulty competing? Try activity-based management. Those activity-based panaceas, along with activity-based information and activity-based thinking, are recommended to any company striving to achieve world-class status as a profitable competitor.

Where did the activity-based juggernaut get started, and how reliable are the claims made on its behalf? As someone who helped put the activity-based concept in motion, I feel compelled to warn people that I believe it has gone too far. It should be redirected and slowed down, if not stopped altogether.

To understand the scope and limitations of activity-based concepts, it is necessary to know something about their origins and history. Many erroneous "histories" of activity-based concepts have appeared in the cost management literature, often written by people who are selling some type of activity-based product—such as consulting services, seminars, or software. If flawed historical accounts go undetected, users of currently popular activity-based products run a high chance of repeating past mistakes. Indeed, few users of these activity-based panaceas seem to understand how activity-based tools condemn them to repeat errors of the past.



Some companies use posters, like this one, to remind employees of their goals toward customer satisfaction.

OVERSELLING CONCEPTS

customer satisfaction instead.

HOW IT ALL BEGAN

There are two paths that lead to present-day activity-based pursuits. Both paths come out of the business world, not the academic world. A few management accountants in the academic world, notably Gordon Shillinglaw at Columbia and George Staubus at Berkeley, had articulated activity-based concepts by the early 1960s. However, the activity concepts they enunciated seem not to have influenced other academic thinking (until very recently), nor do they appear to have influenced the two paths of activity-based development in business.

The older path, which is activity cost analysis, begins in the early 1960s at General Electric, where finance and control people were seeking better information for managing indirect costs. GE accountants 30 years ago may have been the first people to use the term "activity" to describe work that causes costs. The other path to present-day activity-based cost management, popularly known as ABC, seems to originate independently of GE's activity cost developments. ABC derives from the efforts of several companies and consultants in the 1970s and early 1980s to improve the quality of product cost accounting information.

Seen in retrospect, both activity cost analysis and ABC resulted from attempts to improve the usefulness of accounting information for making decisions affecting work-force productivity and product mix. Both paths led managers toward more profitable, or less costly, ways to do "business as usual." Neither path led companies toward new thinking about how to make business more competitive in the global economy. I will come back to this point later because today one frequently hears the claim that activity-based cost management tools help companies achieve long-term profitability and competitiveness in the global economy. I believe anyone who understands the original purpose and nature of activity-based tools realizes the absurdity of that claim.

ACTIVITY COST ANALYSIS AT GE

In 1963, General Electric appointed a team from the controller's department to study and recommend ways to stop chronic growth of indirect costs. The team noted that most indirect costs are triggered by "upstream" decisions made long before the cost is incurred. For example, engineering decisions made during the design of a product ultimately trigger myriad indirect costs for parts ordering, machine changeovers, parts stocking, and customer service calls. Those "downstream" costs, when incurred, however, are never traced back to engineering decisions, nor are engineers ever informed about the downstream cost consequences of their decisions. The company's accounting and budgeting systems focused attention primarily on the costs incurred in each department, not on decisions in other departments that caused the costs.

To get better control of indirect costs, GE's 1963 study team proposed a novel technique to control the *activities* that cause those costs.[1] The technique traces each indirect activity in the company to one output of a particular department, such as engineering, marketing, or manufacturing engineering.

The engineering department, for example, produces outputs such as "new drawings," "old drawings," "requisitions to make components," "requisitions to buy components," "parts list items for products," and "manufacturing change orders." Those outputs cause other departments to engage in activities such as parts ordering, production standards setting, tooling, receiving, stockkeeping, quality control, and internal transportation. To identify linkages between engineering's outputs and other departments' activities, you interview supervisors and workers in the other departments to find out just what it is they do that is triggered by output of the engineering department. Interviewing the supervisor of the manufacturing department may reveal, for instance, that a high percentage of his or her department's activity is tooling, triggered by manufacturing change orders that come from the engineering department.

The goal of this analysis is to determine the approximate percentage of time each employee spends in a month or a year on indirect activities such as tooling or parts ordering (or whatever) and to trace the primary cause of each activity to an output of one department. For example, after interviewing all supervisors to determine the percentage of company time spent on tooling (not all tooling may be done just in the manufacturing department), it may be decided that "manufacturing change orders" from the engineering department is the single most important cause of tooling. GE in the 1960s referred to causes of activities as "key controlling parameters." "Cost driver" or "activity driver" would be terms people are more likely to use today in similar contexts.

GE introduced cost information into this activity analysis by tallying costs of each activity in every department of the business for an interval of time, such as a month or a year. Costs were estimated by multiplying the time devoted to each activity by an appropriate average rate for labor or machines and adding estimates of related costs for resources other than labor and machinery. These other costs

would include utilities, rents, and any other costs deemed appropriate. Then GE collected information about the quantity or count of each activity driver, such as the number of new drawings, number of old drawings, number of purchase orders, number of manufacturing operations, and so forth. These counts were estimates that covered the same time interval as that used to compile costs of activities.

With the information about activity costs and "driver" counts, one can estimate the activity cost per unit of each *activity driver*. Thus, if one year sees the engineering department generate 10,000 "new drawings" (an activity driver) when the cost of "drafting" (an activity driven by new drawings) is $950,000, then the average cost generated in the drafting activity by each new drawing is $95.00.

Similarly, one can estimate the cost of other *activities* that "new drawings" generate, such as *inspection* at $15 per new drawing, *data processing* at $25 per new drawing, $80 per new drawing for *quality control* activity, $20 for *stockkeeping*, and $40 for *parts ordering*. With $95 for *drafting*, the total cost of all activity triggered by the activity driver "new drawings" is $275.

These cost data tell managers, in effect, to manage indirect costs by controlling drivers of activity and by controlling the activities that drivers trigger. With such information, product design people in the engineering department ostensibly can judge more effectively the impact on indirect costs of decisions to initiate "new drawings" as opposed to using existing "old drawings." Design engineers presumably can make better decisions about their own work if they know that the total downstream cost of introducing a new product with a new drawing is, for example, $275 and the cost of introducing the same product by modifying an old drawing is $60—because of less inspection, less new parts ordering, less drafting, less production engineering, and so forth. Moreover, information on costs of activity drivers presumably gives supervisors of indirect activities a better understanding of the forces that cause their costs. Supervisors in charge of parts ordering or inspection, for example, can point to the impact of engineers' new drawings on costs in their own departments.

GE modified and perfected this activity-based cost management technique over the years by developing standardized lists of activities known as "activity dictionaries" and by creating efficient interviewing techniques for collecting activity and activity driver information. The principle, however, always remained the same: Costs reported in accounting-based budget reports are too aggregated to be managed directly; only causes (drivers or activities) of resource consumption can be managed.

ACTIVITY-BASED PRODUCT COSTING

An interesting twist that GE might have added to this technique is to use activity driver information to estimate product costs. If a company knows the annual count of activity drivers triggered by each product line, it can sum up the total costs of each driver to get the cost of the product line. This is exactly the procedure advocated by architects of ABC product costing systems since the 1970s.

In fact, Peter Drucker foreshadowed the procedure in a 1963 *Harvard Business Review* article that warned of the dangers in using traditional product cost accounting information to guide marketing decisions.[2] The considerable information processing required by this procedure for costing products was scarcely feasible, however, before the advent of modern PC-based spreadsheet software. GE seems never to have taken the additional steps to compile product cost information from its activity-based cost management information.

Today's best known "solution" to the problem, cost-driver activity-based

FOCUS ON PEOPLE —NOT COSTS

BY SUSAN JAYSON

Why has American industry lost the competitive edge? According to Tom Johnson, it's because companies have routinely ignored customers, quality, and employee training while focusing their goals on costs and financial returns. While many companies now are trying to become world-class competitors by making major changes in the way they measure and manage costs and in the evaluation of short- and long-term performance, the real path to competitiveness, Professor Johnson says, requires a complete transformation in thinking. Recently we spoke with Professor Johnson about the issues raised in his new book and the challenges management accountants now face.

According to your new book, Relevance Regained: From Top-Down Control to Bottom-Up Empowerment, *published by The Free Press, companies should abandon their obsession with results-oriented accounting data and make total customer satisfaction their goal. How can companies achieve this objective?*

Tom Johnson

Companies should focus on goals that matter, not goals that count. What matters in business is to create fulfilling jobs and survive by profitably satisfying customers' wants (without harming society or the environment). That is the message, as I see it, in W. Edwards Deming's famous "chain reaction" from his book *Out of the Crisis*. Of course, survival requires that receipts from consumers at least equal what is paid to all employees and suppliers, including suppliers of equity capital. The accounting system helps a company track receipts and payments. But focusing its goals on accounting results—revenue, cost, and profit—only diminishes a company's chances for survival.

Accounting goals direct attention to effects, not root causes. Survival requires astute management of root causes. In today's global economy that means optimizing a system of stable processes that is capable of profitably exceeding customer expectations. To optimize their systems, companies must listen to the "voice of the customer" and the "voice of the process." Accounting systems are deaf to both voices—they cannot tell you if a customer is satisfied or if a

costing (ABC), was eventually codified by Harvard Business School professor Robin Cooper. Cost-driver ABC, as Cooper articulated it, was developed during the 1970s and early 1980s in consulting firms such as Bain & Co. and Boston Consulting Group and in companies such as Schrader Bellows, John Deere, Union Pacific, and—if we stretch the definitions a bit—perhaps at Caterpillar and Hewlett-Packard. The chief impetus driving the development of ABC in those companies was the search for better product cost information to guide pricing and product mix decisions.

The current attention many businesses pay to activity-based product costing reflects a desire to improve the cost information they use to evaluate and plan either pricing strategies or product and customer mix decisions. Businesses use information about the financial consequences of intended actions as a guide for planning and to choose among alternatives. Cost information serves in many planning and decision-support roles, such as estimating profit margins of products and product lines, preparing departmental cost budgets, and charging administrative services to production departments. To perform these tasks, companies presumably need reliable cost information.

ABC tools reduce distortions in the cost accounting information businesses typically use to plan and make marketing decisions. Indeed, as you realize, accounting systems provide poor information to evaluate modern manufacturers' product costs.[3] Such systems properly match costs against revenues at a macro level in financial statements, but they systematically distort costs at the micro level of individual products. The distortion arises because of the way manufacturing cost accountants traditionally allocate overhead to products: more or less in proportion to output volume, using cost drivers (i.e., allocation denominators) such as direct labor hours, machine hours, or material dollars. Allocating overhead with such drivers provides reliable product cost information only if we assume all overhead costs are triggered by or vary in proportion to units of output. However, the fastest growing overhead costs in American manufacturing companies after the 1950s were caused by drivers that are triggered by batches put into production and by number of product lines, not by units of output.[4]

By using drivers triggered by units of output (e.g., direct labor hours or machine hours) to allocate overhead triggered by batches and product lines, companies systematically *undercost* the low-volume products that have tended to cause most overhead growth in recent years, and they systematically *overcost* high-volume products that tend not to cause overhead to grow. These systematic distortions tend to cancel out at the macro level and, therefore, do not affect income and asset totals reported in financial statements. But they give a misleading picture of an individual product's margins, as many American and European manufacturers discovered in the 1970s and 1980s when, using financial cost accounting information to measure product costs, they erroneously assumed they could improve their company's profitability by abandoning *overcosted* commodity-type product lines and by proliferating *undercosted* varieties of newer "high-tech" lines. In fact, that strategy usually depressed earnings and, in several cases, generated a "death spiral" that led companies to the edge of bankruptcy.[5]

Recognition of problems with traditional product cost accounting grew during the 1970s. Activity-based costing began to appear in the late 1970s as a solution to the distortions inherent in product cost accounting information.[6] Advocates of ABC tell companies, in effect, to cost products differently for financial reporting information than for planning and decision-support information. For financial reporting, they recommend companies continue allocating overhead

process is stable and capable.

In other words, accounting systems focus attention on an end result but do not specify the means to achieve that end. To achieve the accounting targets mandated by top management, subordinates are left to manipulate processes in any way they see fit. The long-term result is unstable processes, unhappy customers, and loss of jobs. I think that result describes most large American companies in the last 30 years.

Before 1960, however, most American businesses did not use accounting goals to control operations. They did not routinely ignore customers, quality, and employee training while focusing their goals on costs and financial returns. They seemed to understand, intuitively, that positive financial outcomes resulted from listening to, not coercing, people.

Only leaders at the top can change a company's goals. As Dr. Deming has said many times, what American business needs more than anything is a transformation in management thinking from top down. *Relevance Regained* shows how traditional accounting-driven attitudes about control prevent managers from making that transformation.

Should management accounting systems be eliminated? If so, how will this affect the management accounting profession?

I don't advocate eliminating management accounting, only the use of accounting information to control people's work. Businesses used accounting targets to control operations for the first time in the 1950s. Eventually these accounting controls prompted people to control cost by manipulating processes and, thereby, neglect customers, employees, suppliers, and society in general.

If companies cease using accounting to control work, management accountants will not be put out of business. They always will develop budgets and other reports that describe and anticipate the financial consequences of management plans, they will assist efforts to plan and track cash flows, and they will help companies design better financial scorecards and more relevant information systems. Moreover, management accountants can do much to introduce companies to target costing and process control costing—two advanced nonaccounting procedures for estimating the financial consequences of plans and operations.

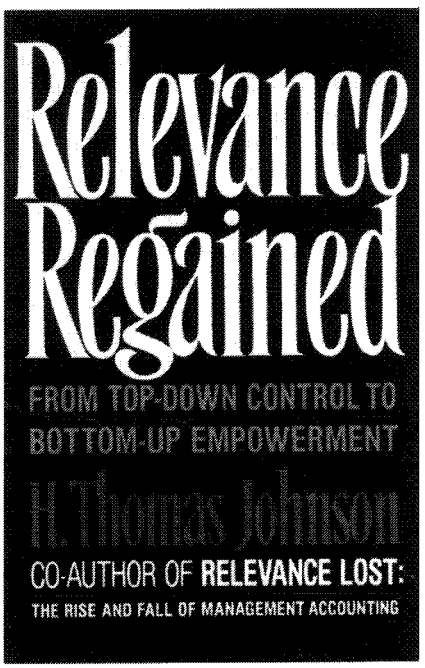
How can management accountants support the goal of total customer satisfaction?

Management accountants can do two things to support the goal of total customer satisfaction. First, they can gain a thorough understanding, through reading and seminars, of the new customer-focused, process-oriented management thinking. By transforming their own thinking, management accountants can play a leadership role in helping everyone in the organization understand how bottom-up, real-time information from customers and processes will replace top-down accounting control information. Second, management accountants can begin to apply the new thinking in their own particular work. They must identify their own internal customers' expectations, map accounting processes, track lead times in their work, and initiate efforts to improve customer satisfaction continuously by removing constraints that cause variation, delay, and excess. Management accountants in several companies—Harley-Davidson and Hewlett-Packard are two that come to mind—have improved their work immeasurably by replacing "scale economy and large batch" mind sets with "lot-size-of-one" thinking.

using the volume-sensitive drivers they have used since the early years of this century. For more reliable planning and decision-support information, however, proponents of ABC tell companies to trace costs to both volume-sensitive and nonvolume-sensitive driver pools. ABC estimates costs of products by adding up costs of the actual drivers that each product consumes.

Simple in concept, ABC was a practical impossibility until the advent of low-cost microchip technologies (and MRP-style databases) in the 1970s made it economical to collect and compile large amounts of nonvolume-sensitive cost driver information. In principle, a two-stage approach is used in ABC product costing. The thrust of the design, as codified originally by Robin Cooper, is to identify a relatively small set of both volume-sensitive and nonvolume-sensitive overhead cost drivers (say six to twelve) and to trace indirect costs to each driver. Then the company determines the percentage of the drivers consumed by each product or service. The result is an estimate of the indirect costs of each product based on nonvolume-sensitive drivers such as engineering change notices (ECNs), setups, and inspections, as well as the traditional volume-sensitive drivers such as direct labor hours and material dollars.

The "drivers" referred to here resemble both the "activity drivers" and the "activities" found in GE's early cross-functional activity cost analysis. In the ABC literature, the word "activity" often is used synonymously with "driver," although *activity* is the word that has stuck to describe the nonvolume-sensitive driver-based product costing technique.



This activity-based cost-driver information is considered by many to be appropriate for marketing decisions. Presumably it helps marketing managers evaluate the cost of standard products and the profitability of product mix. With reliable product margin information, managers in tough competitive situations supposedly "know when to hold and know when to fold."

Indeed, in any company turning out a wide array of products that consume resources in diverse ways, activity-based data cost products more reliably than does traditional cost accounting information. Moreover, information about costs of drivers, such as the cost of a purchase order, can be an efficient and very effective way of differentiating unit, batch, and product-level costs among products. This can provide useful information for preparing income statements.[7]

MEANWHILE, BACK TO THE FUTURE

The activity-based cost management tools that developed along the two paths described above are accounting tools designed to improve accounting information. Improved accounting information undoubtedly was a great help to companies seeking lower costs and higher profits under competitive con-

Why can't activity-based costing make U.S. companies competitive?

Activity-based costing, as that concept was expressed by General Electric accountants in the early 1960s and by other cost accountants in the early 1980s, improves the clarity and reliability of cost accounting information by using the work that causes resource-consuming activity as a basis for allocating indirect costs. Some activity-based afficionados say this is "tracing," not allocating, but I fail to see the difference. My point is that activity-based costing simply reconfigures existing *accounting* information. You see that in the popular ABC software products on the market today. I don't know any ABC software that doesn't begin with numbers from the accounting system. Accounting information *of any stripe*, activity-based or otherwise, cannot tell you if customers are satisfied or if processes are stable and capable. It is deaf to the voices companies must hear if they are to succeed in the global economy.

Moreover, activity-based accounting invariably impairs companies' long-term performance if managers use this "better" cost information to direct marketing strategies or to make operating decisions. In almost every ABC story I have heard, the "better" information has told managers to economize on constraints such as setup time, sales order processing time, or machine processing time by producing longer runs and by delivering larger batches to customers at less frequent intervals. Sadly, companies often find too late that this activity-based cost information has prompted them to pursue "less costly" and "higher margin" opportunities that global competitors would not have pursued in the first place. I call that "rearranging deck chairs on the Titanic."

The answer, I believe, is to discard the idea that activity-based information has value in managing operations. People who believe that activity-based information opens doors to world-class performance simply do not understand how businesses succeed in the global economy. Instead of wasting time compiling "cross-functional activity information," everyone in companies should begin to map customer-focused processes and participate in team-oriented improvement of processes and systems.

What happens when companies implement such improvement programs as TQM and JIT but maintain traditional, hierarchical financial controls?

By leaving top-down hierarchical accounting controls in place, top managers implicitly encourage actions that impair process lead times and flexibility. For example, consider what happens when top-down pressure to "cover fixed overhead costs" is applied to a department where workers, trained in JIT, have reduced changeover times and linked previously decoupled processes into continuous flows that fill customer orders on customer terms. To gratify top management's short-run need to "cover costs," employees boost end-of-period production, knowing that their actions will impair costs, quality, and service in the long run. This has to be demoralizing. So why do it? I should think it would be better to stop sending monthly variance reports down to operating personnel and, instead, pressure *top management* to "cover unabsorbed overhead cost" either by creating new revenue streams or by redeploying (*not* laying off) "fixed overhead" resources. That implies, of course, having top managers who understand customers and processes.

Here's another example. Consider what happens when top-down merit pay systems survive in departments where workers are engaged in "TQM-style" process improvement efforts. Com-

ditions that existed up to the 1970s.

Unfortunately, the decade of the 1970s ushered in a new competitive environment—call it the global economy—in which accounting information is not capable of guiding companies toward competitiveness and long-term profitability. Accounting information cannot speak to the sources of competitiveness and profitability in today's global economy.[8]

The underlying basis of business competition today is information technology. Whereas ability to tap economic opportunities in energy-based technology drove competitiveness before the 1950s, it is the ability to tap opportunities in information technology that drives competition today. In a practical sense, that means the customer is now in charge. Information technology empowers the customer with choice, thus making it necessary for companies to listen to and respond quickly to change in the voice of the customer. No accounting system ever told anyone if a customer were satisfied or if a process were in control or capable of satisfying customer expectations.

Even activity-based reconstructions of accounting information cannot transmit the voice of the customer or the voice of the process. This fact was evident in GE's early technique for activity-based cost analysis, which anticipated and accomplished virtually everything that consultants or company personnel claim for activity-based cost management systems today. Knowing that this technique received wide use in GE during the 1970s and 1980s should cause one to question the power of activity-based costing tools to reverse declining competitiveness in American companies.

General Electric, certainly one of America's best-managed companies in any era, faced severe problems coping with Japanese import competition in the 1970s and early 1980s. Widespread application of modern activity-based cost management tools from as far back as the early 1960s did not avert declining competitiveness at GE during and after the 1970s. Nor, one supposes, did it avert declining competitiveness in countless clients of consulting firms that licensed and used GE's activity cost analysis techniques for the mid-1970s.

There is no reason, however, why activity cost analysis tools would have led GE or any other American company down the path it had to follow after 1975 to compete with Japanese competitors such as Toshiba, Toyota, and Hitachi. *These activity-based cost management tools did not generate process maps, had no customer focus, and did not lead to bottom-up ideas for generating continuous process improvement.* Their activity-based information identified causes of costs far better than traditional cost accounting and budget tools did. For that reason, this activity information undoubtedly improved many companies' efforts to cut costs. But never could it have prompted actions that improve competitiveness by increasing responsiveness to customers and flexibility in processes.

Activity analysis of the type espoused by GE in the 1960s, and manifest in virtually all modes of activity cost management promoted today, focuses attention on changing the amount of activity (or work) a company does for a given amount of revenue. It does not focus people's attention on changing how work is done, nor does it explicitly and systematically link activity with satisfaction of customer wants. It simply links activity with activity drivers and says: Reduce the amount of activity (hence, cost) for a given amount of revenue by reducing or "economizing" on activity drivers. For example, sales orders drive countless activities throughout a company. So, to reduce costs, reduce the activity (and cost) that goes with handling sales orders by reducing the number of orders—presumably by eliminating orders that generate below-average revenue. Similarly, with factory-floor setups, another major driver of activity, to reduce activity costs, reduce the number of setups by eliminating or-

petition to win at someone else's expense, the *sine qua non* of most merit pay schemes, kills the cooperative teamwork that is essential to process improvements aimed at optimizing the system. So why do we do it? The reason, I believe, is that most top managers do not understand what Dr. Deming means when he says "the job of management is to optimize the system."

The root problem is that our traditional hierarchical financial controls reflect the belief of most American managers that they optimize the whole by driving each part to maximize its own individual advantage. That belief and the financial controls that reinforce it weaken the cooperation that is required if a business is to succeed in the global economy.

What are the consequences of remote-control management?

Remote-control management (using top-down accounting information to control business operations) deterred American businesses from understanding the new time-intensive, people-oriented, and resource-conserving management methods used by leading Japanese manufacturers, especially Toyota, after the 1960s. American-style remote-control managers of the 1960s, 1970s, and 1980s lost sight of customers, processes, and people as they single mindedly pursued financial goals for their own sake. I believe an urgent national priority should be to replace remote-control management thinking in business and government with the win/win quality philosophy that Dr. Deming espouses.

If managers followed "bottom-up empowerment" instead of "top-down control," what would be the effect on the factory floor?

The change really affects all personnel in the organization, not just those on the factory floor. The basic change is a transformation in how everyone thinks about work. Bottom-up empowerment, in my view, occurs when someone can say "I know how my work, the work of those I depend on, and the work of those who depend on me really combine to make a difference for our ultimate customers." This happens when everyone's work is guided by and aligned to a common vision that company leaders shape and project by their own example. One sees signs of this alignment where employers are capturing data on charts and sketching maps of the processes and systems in which they work. Such signs suggest that people have begun to understand customer expectations, variation and its consequences, and continuous improvement.

How and when should traditional financial and accounting measures be used?

Companies will compile traditional financial and accounting measures to report results, as always. The public will continue to demand scorecard information, to compare companies and to evaluate an individual company's performance over time. Top managers will continue to need financial and accounting scorecards to fulfill their fiduciary responsibilities. But every effort should be made to resist the temptation to use scorecard information as targets to drive people's actions.

Companies also should compile nonaccounting financial information to predict the financial consequences of planned activities and current operations. Planning budgets clearly fall under this heading. So does target costing, a mode of planning that focuses attention on market price, a cost that matters to customers. And "process control costing" is a little-known nonaccounting approach to evaluating the financial consequences of operations that I discuss in *Relevance Regained.*

ders below a certain size.

The logic in this strategy is impeccable if cutting costs and raising margins is your main objective. But the strategy may be a road to disaster if customers really want frequent delivery of small lots, not large shipments at infrequent intervals. If customers really want frequent delivery of small lots, and someone else can meet their needs at an acceptable price that is below your costs, then you might want to ask if activity analysis is really pointing you in the direction you should be moving to be competitive. To satisfy customers, you probably should change the way you do work so that you can efficiently handle *more* activity drivers (e.g., sales orders or setups) per dollar of revenue, not less. But to compete on smaller-sized and customized orders means you probably must reduce the lead time of processes involved in major activities such as order processing, parts ordering, stocking, and component assembly. No activity analysis I know will point you in that direction.

Instead of activity analysis, companies seeking the pathway to competitiveness need to map and improve customer-focused processes. Indeed, there is almost no similarity between the process analysis discussed today by quality management experts and the activity analysis discussed by cost management authorities.

Companies need to map and improve customer-focused processes.

Process information identifies a customer, a supplier, and a mechanism to transform a supplier's inputs into customer-directed output. Cross-functional activity information simply shows where and how much time (or cost) a company devotes to a broad class of work, such as engineering, maintenance, order acquisition, or budgeting. While that information can be revealing, and usually is not available from cost accounting information, it does not show how work is done or how well it contributes to customer satisfaction. *Like the management accounting information it is designed to supplant, cross-functional activity cost information tracks results, not processes.* It is a tool that greatly improves cost-focused management practices of the past, but it is not a tool for managing competitive operations in the global economy.

Indeed, activity-based analysis does not create an environment for learning about problems, nor does it invite people to identify and remove constraints that create delay, excess, and variation. Unlike process information, activity information usually is compiled and monitored by central staff personnel or outside consultants, not by company personnel who actually do the work. Process information always is compiled and monitored by the people in the process.

Cross-functional activity analysis, by contrast, tends to be top-down and not customer oriented. It does not reveal how the work of an individual or the work of a team of people contributes to customer satisfaction. Hence, activity data do not motivate continuous process improvement.

Most proposals for using activity-based cost management information to "improve operations" invariably fail to fulfill the customer-focused imperatives of global management. These proposals usually recommend building to scale or working for speed to cut costs by producing output. Too often, activity-based cost recommendations aim at economizing on an "activity driver" by producing output customers probably don't want in the first place. Such recommendations, so often associated with activity-based management, usually reflect and reinforce a top-down authoritarian management

In your book, you state that business schools have focused on the wrong customer. How should business schools become more responsive to their real customer?

Business schools should focus both their professional training and their academic research on society's managed organizations, such as businesses, not-for-profit institutions, government agencies, and so forth. Managed organizations play a dominant role in our lives, yet business schools focus almost no attention on developing a theory to explain their existence and their operations. Since the 1950s, business schools have focused most of their research and teaching on issues raised by theories borrowed from economics and psychology, even though economists and psychologists for the most part did not develop their theories to explain managed organizations. Economic theories of market behavior and psychological theories of human behavior focus attention on the individual, not on cooperative group activity. Economists and psychologists have a pretty clear idea how their research connects with the real world, but business scholars steeped in those theories are, in my opinion, unplugged from reality.

What business schools must do is generate theories that account for and explain behavior in society's managed organizations. To do this, they must overcome their long-standing resistance to field research in managed organizations. And they must be open to nontraditional bodies of theory, such as W. Edwards Deming's theory of profound knowledge. Testing the hypotheses suggested by Deming's theory could keep legions of scholars occupied for decades to come, yet I see almost no evidence of such work in our graduate schools of business. Most business school research (and teaching) aims at satisfying the expectations of the business schools' primary customer for the last 30 years—editors **of so-called "tier one" scholarly journals. Business schools will not be an important catalyst for change until there is a profound shift in that aim or in the vision of those editors.**

What has been the reaction to your ideas from practitioners and academe?

Very, very positive, judging from reactions to presentations I have given in the past year and to prepublication reviews of *Relevance Regained.* The only negative reactions, so far, have come from a few top executives of Fortune 100 companies and from a few business school deans—which is hardly surprising. But the strong support for these ideas that I have received from countless professors, accountants, financial controllers, quality mavens, production managers, marketers, and even top executives (mostly of small and medium-sized companies) suggests I may have articulated some widely held but seldom-uttered doubts about the way we have done business in this country for the past few decades.

Are you hopeful that U.S. companies can change their focus from cost accounting targets to customer responsiveness?

They must if they are to survive and create fulfilling jobs for our citizens. A top-down focus that puts costs ahead of people eventually kills innovation and impairs a global organization's ability to learn and adapt to environmental change. Based on what biologists tell us about natural selection, that does not seem to be a viable formula for long-term survival. Moreover, focusing on costs ahead of people probably implies an endless downward spiral of layoffs and compensation reductions until every employee in our society is paid at the lowest common global denominator. Let's pray that if we ever reach that point it will be when minimum

style that is antithetical to the bottom-up process management style companies must adopt in the global economy. Activity-based management typifies the results-driven, "ends justifies the means" value system that is decried by Edwards Deming, Masaaki Imai, and other quality gurus and is being eloquently attacked today by GE's Chairman John F. Welch.[9]

To achieve competitive and profitable operations in a customer-driven global economy, companies must give customers what they want, not *persuade* them to purchase what the company now produces at lowest cost. If customers favor frequent delivery of small lots, or if they favor smaller-sized products, then companies must respond accordingly—*even when it initially costs more.* The long-run global imperative, of course, is to find ways to reduce costs (primarily by removing constraints that cause delay, excess, and variation) of producing what the customer wants in the form the customer wants it.

Ironically, companies that continually improve customer-focused processes eventually discover that their process improvements eliminate most of the "overhead activity" that, by causing distortions in product costs, prompted the development of ABC tools in the first place! Many cost management authorities describe this "overhead activity" by referring to the "Pareto relationship," named for the relationship between population and income discovered in the late 19th Century by economist Vilfredo Pareto. These cost management experts say that ABC usually helps managers discover that 20 or so percent of a company's products, or revenue, generates 80 or so percent of their overhead activity—the Pareto 80:20 relationship.

While I don't dispute the existence of this skewed relationship between work and results in most American businesses today, I would challenge the suggestion that ABC cost information will help one achieve a more balanced relationship. ABC advocates tell companies, in effect, not to change the way they orchestrate work—just create better information to identify products that require a lot of work for little revenue and shift production away from those dogs and cats toward more "big hitters." This short-term cost-cutting or margin-enhancing strategy, however, usually leads to decisions that impair competitiveness in the long term.

Instead of wasting time designing ABC systems to locate "hidden profits" on products that customers probably don't want anyway, companies should begin taking steps to eliminate delay, excess, and variation from processes. Soon they will discover, I believe, that better orchestration of work will lead to closer correlation between effort and results *everywhere.* At the limit, one percent of effort will always generate one percent of results, and so on. In that world, only two forces drive product costs—time (and the price of time) and material. In that world you don't need ABC or any other system to cost products—you just need to know the time it takes to do something, the price of that time, and the price of any material consumed to get the job done.

WRAP-UP

Activity-based cost driver information overcomes distortions inherent in traditional cost accounting information. Driver-based ABC tools restore relevance to product cost information and thereby help companies avoid costly marketing blunders in the short term. Activity-based information, however, does not help companies achieve continuous improvement of globally competitive operations.[10] Until a company changes the way it thinks about customers, people, and work, it undoubtedly will use activity-based information simply to improve how it does business as usual—that is, seeking economies of scale and speed in decoupled processes. Using activity-based cost information to improve business as usual only helps companies commit "relevance lost" all over again!

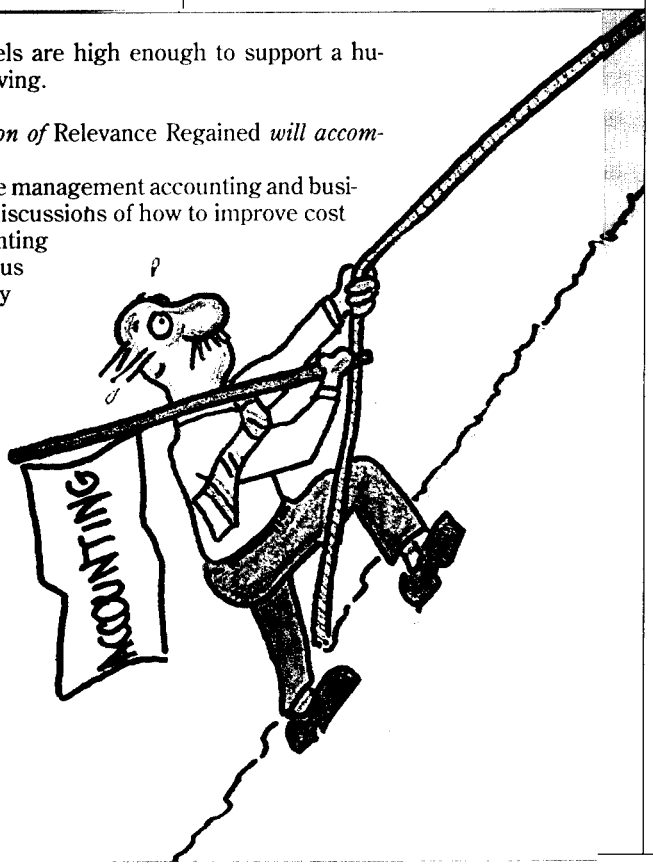
Activity-based prescriptions for improved competitiveness usually entail steps that lead to selling more or doing less of what should not be sold or done in the first place. Indeed, activity-based cost information does nothing to change old remote-control, top-down management behavior. Simply because improved cost information becomes available, a company does not change its commitment to mass-produce output at high speed, to control costs by encouraging people to manipulate processes, and to persuade customers to buy output the company has produced to cover its costs. American businesses will not become long-term global competitors until they change the way managers think. No cost information, not even activity-based cost management information, will do that.

I do not believe better product cost information itself could have prevented most American manufacturers from losing long-term market share and profitability in the 1970s and 1980s. It might have been enough to sustain market share and profitability if com-

worldwide productivity levels are high enough to support a humanly decent standard of living.

What do you hope publication of Relevance Regained *will accomplish?*

I hope the book will move management accounting and business discourse away from discussions of how to improve cost and management accounting systems, which was the focus of discussions triggered by the book *Relevance Lost* I co-authored with Robert S. Kaplan in 1987, to discussions of the behavior one should expect of people in successful global businesses. Discussions of desired business behavior automatically should prompt consideration of the transformation in thinking that Dr. Deming refers to as the most important job facing American business people. ■



DEMING'S MESSAGE FOR MANAGEMENT ACCOUNTANTS

When did you first hear the name W. Edwards Deming? For many of you, it probably was in the famous 1980 NBC-TV documentary, "If Japan Can, Why Can't We?" Later in the decade articles about Dr. Deming appeared, and in 1986 his book *Out of the Crisis* presented the full scope of his thinking to the general public. The last few years have brought a flood of popular literature—books, articles, and videotapes—about "the man who discovered quality" (see books and articles in the list of recommended reading at the end of this article).

Dr. Deming's message, especially as he has expressed it recently in his "system of profound knowledge," addresses many issues germane to management accounting. For Dr. Deming, a key issue facing American business is for top managers to adopt new thinking, a new "paradigm" if you will. However, the widely held idea that accounting targets (including activity-based accounting targets) should be used to control people's work prevents managers from adopting this new thinking and putting it to work in companies. Underlying traditional management accounting controls is a flawed understanding of the role that people and work play in business. Dr. Deming's articulation of that role is especially pertinent to management accountants.

To Dr. Deming, work is a *process*. Humans transform output they receive from suppliers into output they supply to customers. Processes in a business form a *system* of *interdependent* (i.e., cooperative, not competitive) components that have an *aim*, which in business is to exceed customer expectations profitably. Management's job is to *optimize the system* by ensuring that its components cooperate, not compete. In this regard, a company earns the required long-term rate of return—a condition necessary for survival—by optimizing the system, not by maximizing returns to individual components of the system. To optimize the system, managers must understand

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theory, especially the *theory of variation* and its corollary, the need to *control processes, not people*. The theory provides a basis for knowing when and when not to take action to improve outcomes. Without a theory that connects means and ends, a singleminded focus on results invariably prompts interventions that create instability in processes and, ultimately, declining performance.

In American business, top managers "manage by the numbers" without coherent theory. They encourage employees and suppliers to manipulate processes in order to achieve accounting goals. This thinking lies behind most of our accounting-based control and reward systems. Workers, individually or in groups, are driven to compete in the belief that the whole will be greater if each part tries to maximize its individual contribution to the whole. The result, according to Dr. Deming, is to destroy everyone's joy in work, to generate fear, and to suppress learning and innovation. The alternative is to focus on enhancing the talents and opportunities of people—customers, suppliers, employees, society—by substituting win/win cooperation for win/lose competition.

I believe management accountants must adopt and promote the transformation in management thinking that Dr. Deming advocates. They should be among the first people in a company to learn and to teach others that the customer-focused theory of variation, not accounting, is the "language of business" in the global economy. More than ever before, today's managers require quantitative data, if not accounting control data. As Dr. Deming so often says, "In God we trust; all others must supply data." With their skills in data analysis and statistics, management accountants can help pioneer the development of the real-time customer-focused and process-focused information systems that turn companies into genuine "learning organizations."

Where should management accountants start this journey? I would suggest following three paths simultaneously. First, begin at once to read everything you can about the Deming philosophy. The list of books and articles on the next page is not meant to be inclusive—just enough to get you started. Second, attend one of Dr. Deming's four-day seminars at your earliest convenience. For information on those seminars (and more) contact Quality Enhancement Seminars, Inc. in Los Angeles at (310) 824-9623. If you can't attend one of the live seminars, ask QES for information about satellite telecasts that may be scheduled for your area, or check into videotapes. Finally, get involved with a Deming Study/User Group in your area. Efforts are under way to create a national network of such groups, but there is nothing to report at the moment. In the meantime, contact a local chapter of American Society for Quality Control (ASQC) or Association for Quality and Participation (AQP) for more information—now. ■

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petitors, especially from Japan, had not changed fundamental assumptions about how to organize work to satisfy customers. That is the point—how to discover and adopt competitive ways of organizing work, not how to be more profitable by shifting product mix in companies that continue to follow traditional remote-control man-

agement practices. While ABC gives companies a better "rack and stack" of their overhead costs, it does not drive them to change their fundamental views about how to organize work to satisfy customers efficiently.

Moreover, the answer to competitiveness is not to do the activity analysis that leads up to calculating ABC product costs. I have heard some companies say that going through the activity analysis it takes to calculate activity-based driver costs has helped them improve their operations. I have no doubt this is true, especially given the chaotic state of decoupled operations in most American companies when they first wake up to the need to improve. One-time savings—sometimes referred to as "low-hanging fruit"—await any rational attempt to analyze work. But something more is needed for the continuous improvement in output of customer-focused processes.

Instead of beginning with activity-based information, begin at the beginning—by articulating a customer-focused mission statement and then encouraging everyone to help map and systematically improve the processes in which they work. If your goal is competitive operations, don't waste time gathering data and compiling information in order to cost work you shouldn't be doing anyway. Focus on reducing variation and lead time in the work itself, and costs will take care of themselves. Do ABC if you think you must. But don't fool yourself into thinking that activity-based concepts will help you become a global competitor. For that, get busy with the improvement process! ■

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RECOMMENDED READINGS

(in suggested order)

BOOKS

Nancy R. Mann, *The Keys to Excellence: The Story of the Deming Philosophy,* Prestwick Books, Los Angeles, 1987.

Mary Walton, *The Deming Management Method,* Dodd, Mead, New York, 1986.

Henry R. Neave, *The Deming Dimension,* SPC Press, Knoxville, Tenn., 1990.

W. Edwards Deming, *Out of the Crisis,* Massachusetts Institute of Technology, Cambridge, 1986.

William W. Scherkenbach, *The Deming Route to Quality and Productivity: Roadmaps and Roadblocks,* CEE-PRESS, Washington, 1986.

William W. Scherkenbach, *Deming's Road to Continual Improvement,* SPC Press, Knoxville, Tenn., 1991.

Mary Walton, *Deming Management at Work,* G.P. Putnam's Sons, New York, 1990.

ARTICLES

Brian L. Joiner and Peter R. Scholtes, "Total Quality Leadership Vs. Management by Control," Joiner Associates Inc., Madison, Wis., 1985 (available from Joiner Associates).

Brian L. Joiner and Marie A. Gaudard, "Variation, Management, and W. Edwards Deming," *Quality Progress,* December 1990, pp. 29-37.

Peter R. Scholtes and Heero Hacquebord, "Beginning the Quality Transformation," *Quality Progress.* Part I, July 1988, pp. 28-33; Part II, August 1988, pp. 44-48. ■

[1]General Electric, "Lower Business Costs: A Method for Evaluating Indirect Effort" (ENS-A-179A, July 1964).

[2]Peter F. Drucker, "Managing for Business Effectiveness," *Harvard Business Review,* May-June 1963, pp. 59-62.

[3]H. Thomas Johnson and Robert S. Kaplan, *Relevance Lost: The Rise and Fall of Management Accounting,* Harvard Business School Press, Boston, Mass., 1987, ch. 8; Robin Cooper and Robert S. Kaplan, "Measure Costs Right: Make the Right Decisions," *Harvard Business Review,* September-October 1988, pp. 96-103.

[4]The distinction between unit, batch, and product-level cost drivers, articulated originally by Robin Cooper of Harvard Business School, is the conceptual foundation that supports modern activity-based product costing. The definitive statement of this distinction is found in Robin Cooper, "Cost Classification in Unit-Based and Activity-Based Manufacturing Cost Systems," *Journal of Cost Management,* fall 1990, pp. 4-14.

[5]For a detailed example, see the story of "margin retreat" by SKF Bearings in George Stalk, "Time-The Next Source of Competitive Advantage," *Harvard Business Review,* July-August 1988, p. 43; also see Robin Cooper, "Schrader Bellows," Harvard Business School Case, number 6-186-050 et al., 1985.

[6]Robin Cooper, "The Two-Stage Procedure in Cost Accounting: Part One," *Journal of Cost Management,* summer 1987, pp. 43-51; Johnson and Kaplan, *Relevance Lost,* ch. 10.

[7]Robin Cooper and Robert S. Kaplan, "Profit Priorities from Activity-Based Costing," *Harvard Business Review,* May-June 1991, pp. 130-135.

[8]This indictment of accounting as a source of management control information is one of the main themes that is documented and defended in H. Thomas Johnson, *Relevance Regained: From Top-Down Control to Bottom-Up Empowerment,* The Free Press, New York, N.Y., 1992.

[9]John Holusha, "A Soft Edge for 'Neutron Jack,'" *New York Times,* March 4, 1992, p. C-1.

[10]This is one of the main points I tried to make in H. Thomas Johnson, "Activity-Based Information: A Blueprint for World-Class Management Accounting," MANAGEMENT ACCOUNTING®, June 1988, pp. 23-30. My point there was to urge companies to stop using accounting cost information, even activity-based cost information, to manage and control operations. Now I say: Stop using activity information for any purpose besides costing. To manage and control operations, study and control processes, not activities.