

# Activity-based Costing: An Emerging Tool for Industrial Marketing Decision Makers

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Industrial marketers make decisions about pricing, transportation, advertising expenditures, salesforce allocations, product line additions and deletions, and numerous other factors which affect profits. Information is the basis for these decisions; generally the better the information the better the decision. Historically the major source of such information, and the only source of profitability information, has been the accounting system. But the primary focus of accounting is to serve external groups such as investors, bankers and regulators; its secondary focus is to serve internal groups such as marketing, finance and production. As a result, the accuracy and validity of information provided to marketing is compromised for the sake of uniformity and simplicity. Since this results in significant modifications to a key part of the information system, the allocation costs, to products or territories for example, may misrepresent the true performance of such units. This is evident in the case of overhead costs, which have been allocated in such a simplistic manner that initiatives taken to improve profitability and competitiveness

have not been captured in the accounting reports. Thus, marketing decision makers may be misled about costs, develop inappropriate strategies, and implement bad decisions. However, adoption of a widely discussed accounting innovation, activity-based costing (ABC), provides a procedure to allocate costs in a more realistic manner. This can improve significantly the effectiveness of accounting as a decision support system for strategic moves in improving marketing competitiveness.

## BACKGROUND

The full cost of a manufactured product or line of products, includes direct labor, material, variable overhead and fixed costs. Direct labor and material are normally observed and measured by manufacturing and maintained as "standards". The overhead costs are reported by responsibility centers, such as departments or plants. The difficult decision is what to do about allocating overhead costs to products or territories. The accounting profession has long debated the value of two approaches: "full absorption costing", where all costs are allocated to the products; and

“variable costing” where only variable costs (material, labor) are allocated. Those advocating “variable costing” state that overhead costs are “sunk”, or fixed, and will not change within a range of output. Therefore, overhead costs are treated as general costs of doing business and charged to profit on a monthly basis. However, advocates of “full costing” state that the cost of a product must include all costs of producing and marketing the product. More costs are capitalized (held out of current expenses) and put into inventory with the product rather than being expensed when they occur. These costs do not impact the profit and loss statement until the individual products are sold. Thus, the decision about which cost accounting approach to use affects inventory costs and the timing of profits, which explains the strong external interest in a company’s approach.

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### **MANY COSTS ARE RELATED TO OTHER CAUSES THAN LABOR**

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Reporting to regulators, the financial community, and for tax purposes, has generated strong pressure for accounting systems to provide uniformity across businesses rather than emphasize usefulness to a particular industry or firm. This force for “generally accepted accounting principles” (GAAP) has caused accounting to reject variable costing in favor of full absorption cost accounting for external reporting. Usually the internal system also conforms. In short, the accounting system is not focussed on providing the necessary cost data for decision making. Instead the

typical business uses a two-step system for absorption costing in which costs are accumulated in a pool, usually in manufacturing, and then allocated to specific products based on the total direct labor hours utilized in making the product. The wide use of direct labor hours as an allocation basis is historical, dating back to the development of these systems in the early part of this century. At that time, labor was a major cost and a target of management attention. Over the last 20 years it has become apparent that this model is oversimplified; many costs are related to other causes than labor. But accounting departments historically related costs to labor hours even though a more systematic approach to allocating costs was needed. Industry made do with this discrepancy between how costs really occurred and how accounting modeled them. But now, as industry seeks to cope with the realities of doing business in the 1990s, this has important implications.

### **CHANGES IN AMERICAN INDUSTRY COST STRUCTURE**

In response to worldwide competition, American industry is changing in ways which increase the need for new means of allocating overhead costs. Much of this change has been brought about by changing markets. Since few firms can afford to carry large inventories, just-in-time manufacturing and distribution have grown to cut lead times and minimize inventory storage. The textile industry’s “quick response” program, for example, illustrates this change. The push to meet market demands for quality, heightened by foreign competition, has resulted in more use of flexible manufacturing, automation, cellular manufacturing and greatly improved machinery. These

factors have helped to change the nature of costs to such an extent that direct labor is no longer the major cost. Once accounting for more than 33 percent of costs, now direct labor has been reduced to 15 percent of manufacturing costs; 5 percent in high-tech industries. At the same time, indirect costs have grown to 55 percent or more (Kelly, 1991), and marketing costs make up more than 50 percent of total costs for some products. The net result is that traditional accounting assumptions are inappropriate. Focussing on direct labor as the way to allocate costs is not working. Treating overhead as a miscellaneous expense conceals important data, and allocating overhead on the basis of diminished labor costs hides the true costs and benefits of alternative strategies. What is needed is an accounting system which recognizes and responds to the changes being faced by industrial marketers today.

### ACTIVITY-BASED COSTING

Fortunately, recent advances have generated a new approach to costing to solve some of these problems and provide marketing decision makers with more useful information. Activity-based costing (ABC), pioneered by Harvard's Cooper and Kaplan (1988), allocates staff and overhead costs to products (or lines, or territories) on the basis of how the products actually consume or cause these costs. The process is similar to that used in engineering to develop a bid or estimate the cost of a project. ABC identifies systematic cause and effect linkages between products and costs, before resorting to across-the-board allocations. In ABC these linkages are called cost "drivers", i.e. costs are driven up or down by various factors.

Companies are using as drivers such

#### Volume-related:

- Direct labor hours
- Machine hours
- Direct material costs
- Floor space

#### Transaction-related:

- Set-ups
- Material handling
- Inspections
- Order scheduling
- Order entry
- Packing

#### Product-related:

- Physical features: size, weight, finish
- Complexity: parts per product, precision
- Packaging
- Labeling

#### Selling and administrative-related:

- Catalog pages and changes
- Utilization of distribution facilities
- Executive salaries
- Advertising
- Warehousing
- Sales expense

**TABLE I.**  
**Types and Examples of Cost Drivers**

things as: labor hours, machine hours, floor space used, orders entered, transportation, warehousing, size, weight and sales costs (see Table I). Costs are first accumulated as has been done traditionally, but are then allocated to the product or territory by the appropriate drivers. A product using 30 percent of warehouse space might get 30 percent of the space costs, one using 20 percent of sales effort might receive 20 percent of that cost. The result is a more accurate, and often very different picture of the costs and profitability of products and product lines. Not surprisingly, as the benefits of ABC are becoming known,

the procedure is seeing real world application.

### **MANAGERIAL APPLICATIONS OF ACTIVITY-BASED COSTING**

There are a number of companies which have begun to apply ABC, and with very favorable results. One, Siemens Electric Motor Works, in the mid-1980s changed from producing standard motors to producing customized motors, in response to price competition from countries with low labor costs. This strategy led to the development of an advanced, highly automated plant producing a large number of small orders. Siemens found that its traditional accounting system was not accurately reflecting the change in operations. An extensive study revealed that 7 percent of total costs were explained by sales order costs and number of special components in a custom motor, and not size of order. Its existing cost system was overcharging long runs and undercharging small, complex products. The new cost information helped Siemens to recognize which orders were profitable and which were not. As a result Siemens accepted only half the orders offered, and profitability improved (Jeans and Morrow, 1989).

In another situation, one division of John Deere was established to provide parts to other divisions. Policies required that outside companies were to compete with the parts division's captive marketing effort. In 1984 the parts division was low on only 21 percent of bids. More disturbing, they were receiving orders only for low-volume items. Management found that the cost system, which worked well for overall inventory valuations, was not realistic enough for bidding purposes. Overhead was being allocated on the basis of labor and

machine hours. This unfairly advantaged small orders because it failed to reflect the fixed character of costs associated with such orders. The new system, utilizing seven drivers, moved 41 percent of overhead off machine and labor hours and resulted in more successful bidding (Jeans and Morrow, 1989).

A pilot program at Northern Telecom identified 40 drivers for the allocation of overhead (Sharman, 1990). Under the new system, the costs of only 17 percent of the products were within 20 percent of their previous costs. Several high-volume products had been overcharged, some by as much as eight times. The majority of products (78 percent) had been undercharged by more than 20 percent. It was concluded that low-volume, complex products, the niche many US companies are being driven into, were not as profitable as traditional cost systems made them appear. A re-evaluation of the product mix was needed.

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### **THE COST SYSTEM WAS INACCURATE**

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Another application of ABC involved a \$100-million-a-year plumbing fixture manufacturer (O'Guin, 1990). After extensive modernization, the manufacturer had overhead costs which were 60 percent of the cost of goods sold. The company was losing money and initiated a comprehensive study to determine why. An early observation was that the cost system was inaccurate. With overhead allocated on traditional factors, some departments which actually consumed 40 percent of resources were charged only 9 percent of costs because

they had less direct labor. Overhead activities, such as scheduling and order processing, were allocated to all products based on direct labor. Therefore a small order, which actually took the same amount of set-up and scheduling as a very large one, received only a small share of the overhead costs.

The company developed an ABC system. They examined every cost to determine what caused it. Tooling, a manufacturing cost, was theoretically related to the development of a new product, i.e. transaction-driven (see Table I). But in reality, no new tools were being built, only old ones repaired, making tooling a volume-driven cost. Management developed a costing database which could be applied to any product mix to identify the resources used and costs generated. This uncovered the typical pattern of under-costing low volume product lines. Lines thought to be most profitable were actually draining profits. On the other hand, profits from high volume lines were understated. The product mix was wrong.

Marketing research was initiated. It showed that customers actually valued short lead times over broad product lines, and that the company was supporting an unnecessarily broad line. By eliminating low volume lines and their accompanying costs, "profitability could improve from \$2 million to \$11 million per year" (O'Guin, 1990, p. 40). Although the sales force was unhappy at the prospect of losing some unique lines, the improvement in profitability could not be ignored.

Hewlett-Packard (HP), at the forefront in developing new costing methods, had already abandoned direct labor accounting by the mid-1980s when some products carried overhead allocations of 1,000 percent. Its new approach began with directly charging many activities to product lines. If, for example, product

development staff were directly associated with a product line, they were charged to that line. Other overhead was allocated on an ABC basis, a procedure which was developed during the budgeting process. Management received training in ABC and worked with accounting to build a more accurate model of operations. This system led the company to identify where all costs were originating, to challenge and improve costs, and to see that the costs went into the accounting system in a way which reflected reality. A division controller pointed out previous problems of misidentification of cause and effect relationships, improper design initiatives, pricing errors, and improper capacity decisions (Rigby, 1989). He noted that "there are several benefits attained by HP divisions adopting ABC:

- the cost system now reflects how the factory is managed, a series of processes with assigned responsibilities, thus providing greater visibility to trends, successes and failures and improved goal setting;
- designers can now recognize the cost impact of their decisions on design trade-offs, with cost penalties for non-standard, unique solutions;
- there are fewer transactions;
- reduction in clerical staffing;
- improved appreciation of cost data, helpful in bidding large contracts and pricing scenarios;
- clearly established cost and productivity goals for a process", (pp. 16-17).

Kanthal, a company competing in the heating wire industry, used ABC to analyze its customer profitability. It found that the "80-20" profit rule did not apply. Instead, a "20-225" rule more accurately described its customer

profitability. Twenty percent of its customers generated 225 percent of profits, 10 percent were losing 125 percent of profits, and the middle 70 percent provided no profits; they were generating just enough revenue to cover costs. The ABC system alerted management to the problem, and through pricing and order size changes, the middle 70 percent were converted into positive profit contributors (Cooper and Kaplan, 1991).

Despite these examples, however, not all companies need ABC. In a situation where a company produces only few products with fairly uniform volume allocating costs according to traditional accounting methods should not significantly distort product costs. But in situations where product lines are diverse and outputs vary from high-volume to low-volume across product lines, a traditional labor or material based system will likely distort the true nature of product costs. This will have adverse effects on marketing decision making. It is in these types of situations where ABC is most likely to make a contribution (Drury, 1990, p. 126). And companies, such as those mentioned above, which have the appropriate circumstances, are moving ahead with ABC.

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### **COMPANIES ARE TAKING INNOVATIVE STEPS WITH THEIR COST ACCOUNTING SYSTEMS**

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Other companies, including IBM, Caterpillar, GM, GE and Motorola, are also taking innovative steps with their cost accounting systems. Caterpillar has established over 1,200 overhead

“budgets”, so products using larger machines, with larger budgets, will receive a higher share of overhead costs. General Motors is working with new systems for product costing at 19 different locations. Zenith has started to include some non-production costs to more accurately determine product costs in pricing (Emig and Mazeffa, 1990).

Nevertheless, the rhetoric about ABC is greater than the number of actual applications. This will change, because the major consulting firms have already added ABC to their general models for business. But ABC is a new tool; Romano (1990) reported only 110 installations in August 1990, with 77 percent of these in two major firms. However, this should not discourage one from initiating an ABC program and ABC should not be viewed as an impractical idea of only theoretical interest. Instead, it is a way of refining an internal reporting system and “should be thought of as a very necessary tool to be used by an increasing number of businesses both large and small” (Giffin, 1989).

### **HOW IS ABC IMPLEMENTED?**

A technical description of how to implement ABC is beyond the scope of this article. However, several numerical examples will be used to illustrate the impact of ABC on perceived product costs and profitability. But first, it is necessary for marketers to understand the procedure by which ABC is integrated into the decision support system. The following is an overview of that procedure.

ABC is not normally implemented by marketing. But marketing may provide the motivation for its use because many of the circumstances under which ABC is



justified will be first recognized by marketing management. ABC requires a team effort. Accountants may lead the team, but because of the unique interdependence of all the functional areas in an industrial marketing organization, they must be joined by representatives from marketing, operations, engineering, finance and any area touched by company costing. The team must have the support and interest of top management who will ultimately need to provide funding for the project (Brausch, 1992). The team will first need to become familiar with ABC principles and experience. This can be accomplished through an examination of the case studies and articles about the experience of others, by the use of consultants, and/or via several recent books (Brimson, 1991; Turney, 1991). The team will also provide necessary expertise in identifying and allocating relevant costs.

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### HOW ARE ADVERTISING OR RESEARCH RESOURCES USED?

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The next step is to document and understand the activities performed in producing and marketing of a product, focussing particular attention on centers of support and product line activities. Attention to manufacturing will identify the cost drivers which explain why and how costs are incurred and what causes costs to increase or decrease. Similarly, marketing activities, such as advertising and selling, give rise to cost drivers. While it is not uncommon for a team to identify 40 or 50 drivers, ten is believed to be closer to an optimum number. After narrowing to the final set of cost

drivers, the team will finalize the paperwork system to allocate costs to products via the drivers. A computer system is usually required to handle the calculations. Stand-alone systems are now the norm and software packages are available.

For ABC to be implemented effectively, the team must develop an understanding of the manufacturing process, i.e. how are direct labor and material used. In marketing, how are advertising or research resources used? There are many processes and indirect activities involved in bringing a product to market, so the team must prioritize its examination. They should focus on expensive resources and on those which do not follow the usual pattern or which vary significantly by product or territory.

The team should interview the overhead department managers and supervisors asking: Where is their time used? What causes it to increase or decrease? Can the work be predicted by product, department, or plant activity? Any records would be of interest. For example, maintenance departments often

Activity	Driver
Engineering	Engineering hours
Site services	Number of workers
Machine set-up	Number of set-ups
Procurement	Number of orders placed
Selling	Number of sales call hours
Travel	Number/location of customers
Advertising	Frequency of appearance
Warehousing	Units stored/sq. ft used
Shipping	Quantity shipped

**TABLE II.**  
**Activities and Cost Drivers**

record their jobs on time cards which would allow charging much of their costs directly. Marketing research time frequently is directly associated with a particular product. Since the objective is to get costs properly assigned to products, the best way is to directly charge activities. With a diverse product line, for example, if certain engineers, sales people, advertising staff or maintenance staff work primarily with a line, they can be charged directly. When this avenue has been exhausted, cost drivers are the next best approach.

“Cost drivers” cause expenses associated with various activities to be “driven” up or down. These costs occur whenever an activity is performed. The activities may arise in manufacturing (a machine set-up must be changed) or marketing (an order is entered). A cost driver is a way of associating costs with such activities. A cost driver for machine set-up is the number of set-ups required. A cost driver for order entry is the number of orders entered, or the frequency of order entry. In Table II some typical cost drivers are shown with the activities with which they are associated. By studying the activities involved in producing and marketing a product, the study team should be able to identify the cost drivers appropriate for its particular process. To keep the number of cost drivers to a manageable level, “cost drivers should be meaningful parameters of operating controls; measured in reasonable, quantitative terms; and used as the convenient bases of calculating overhead allocations for product costing purposes” (Lee, 1990, p. 37). Wherever possible, drivers should be consistent with operational measures already available, then grouped and assigned to cost centers (Table II).

Costs can now be assigned to the products with the drivers. The total cost

of the sales department, for example, is divided by the number of sales hours to yield a cost per sales hour. A record is kept of the sales hours expended on a product or product line and then the sales department cost is allocated on that basis. Other overload costs are similarly allocated. The result is a picture of the costs of products or territories which more closely reflects how the costs are generated and supports better decision making.

### **COST AND PROFIT CHANGES WITH ABC**

Tables III-VI show how ABC alters cost and profit results in comparison to traditional costing methods. The basic product and sales information is provided in Table III. The illustration is of a manufacturing division with three products: X, Y and Z. Direct costs, selling price and drivers are shown for each product. Also shown are overhead costs. The total costs for the period are \$3,894,000.

Distribution of these costs according to traditional methods yields the information shown in Table IV. Direct labor and direct materials are allocated to each product, \$36 and \$15 to product X, for example. Overhead costs are then allocated according to the formula shown (Table IV), \$64.50 to product X, for example. This yields a total cost per unit X of \$115.50. Since 23,000 units were produced and sold (Table III), total costs for product X were \$2,656,500. Similar calculations were made for products Y and Z. Again, total costs for all three products were \$3,894,000 as was shown in both Tables III and IV.

Distribution of costs using ABC is shown in Table V. There, direct material and labor were distributed across products as they were in Table IV. But



Costs/sales/drivers	Products			Totals
	X	Y	Z	
Units produced and sold	23,000	10,000	5,000	38,000
Direct materials costs (\$)	15.00	20.00	40.00	745,000.00
Direct labor hours	3	2	1	94,000.00
Machine hours	3	1	2	89,000.00
Direct labor costs at \$12/hour (\$)	36.00	24.00	12.00	1,128,000.00
Number of purchase orders processed	450	100	75	625
Number of set-ups (production runs)	8	4	20	32
Number of engineering changes	7	12	21	40
Number of sales calls	180	300	520	1,000
Advertising frequency	20	40	80	140
Warehouse space used (sq.ft/unit)	0.75	0.50	1.00	27,250.00
Selling price (\$)	120.00	100.00	90.00	4,210,000.00
<i>Overhead costs (\$)</i>			<i>Total costs for period (\$)</i>	
Receiving	61,000.00		Labor	745,000
Set-up costs	142,000.00		Materials	1,128,000
Machines	890,000.00		Overhead	2,021,000
Engineering salaries	160,000.00			3,894,000
Order entry	100,000.00			
Warehousing	12,000.00			
Packing/shipping	148,200.00			
Sales expense	365,000.00			
Advertising expense	142,800.00			
Total	2,021,000.00			

**TABLE III.**  
Product Cost/Sales Information

Traditional unit costs	Products			Totals (\$)
	X (\$)	Y (\$)	Z (\$)	
Direct labor	36.00	24.00	12.00	
Direct materials	15.00	20.00	40.00	
Overhead	64.50	43.00	21.50	
Cost per unit	115.00	87.00	73.50	
Total costs	2,656,500.00	870,000.00	367,500.00	3,894,000.00
<sup>a</sup> Total overhead (\$2,021,000)/total direct labor hours (94,000) = \$21.50 per direct labor hour: X = 3 hours at \$21.50 = \$64.50 Y = 2 hours at \$21.50 = \$43.00 Z = 1 hour at \$21.50 = \$21.50.				

**TABLE IV.**  
Costing Using Traditional Method

ABC unit costs	Products			Totals (\$)
	X (\$)	Y (\$)	Z (\$)	
Direct labor	36.00	24.00	12.00	1,128,000.00
Direct materials	15.00	20.00	40.00	745,000.00
Machine overhead <sup>a</sup>	30.00	10.00	20.00	890,000.00
Set up costs <sup>b</sup>	1.54	1.78	17.75	142,000.00
Order entry <sup>c</sup>	3.13	1.60	2.40	100,000.00
Receiving <sup>d</sup>	1.91	0.98	1.46	61,000.00
Warehousing <sup>e</sup>	0.33	0.22	0.44	12,000.00
Packing/shipping <sup>f</sup>	3.90	3.90	3.90	148,200.00
Engineering <sup>g</sup>	1.22	4.80	16.80	160,000.00
Sales <sup>h</sup>	2.86	10.95	37.96	365,000.00
Advertising <sup>i</sup>	0.89	4.08	16.32	142,800.00
Cost per unit	96.78	82.31	169.03	
Total costs	2,225,810.00	823,020.00	845,170.00	3,894,000.00

*Notes:* See Table III for detailed cost data.

<sup>a</sup>Machine hours × machine overhead rate (\$890,000/89,000 hrs).

<sup>b</sup>\$142,000/32 = \$4437.50 per set-up.

<sup>c</sup>Total cost of \$100,000 for 625 purchase orders processed = \$160.00 per order.

<sup>d</sup>Total costs of \$61,000 for 625 purchase orders = \$97.60 per order.

<sup>e</sup>Total cost of \$12,000 for 27,250 square feet = \$44 per sq. ft.

<sup>f</sup>Total cost of \$148,200 for 38,000 units = \$3.90 per unit.

<sup>g</sup>Total engineering salaries of \$160,000 for 40 engineering changes = \$4,000 per change.

<sup>h</sup>Total sales expense of \$365,000 for 1,000 sales calls = \$365 per call.

<sup>i</sup>Total cost of \$142,800 for a total of 140 ads = \$1,020 per ad.

**TABLE V.**  
**Costing Using ABC Method**

overhead costs were also distributed across products via the method shown in the notes to Table V. In other words, rather than simply allocating costs based on direct labor hours, they were allocated by the drivers identified in Table III. As can be seen in Table V, this resulted in remarkable cost changes for each of the products.

For example, the cost per unit of product X using the traditional method was \$115.50 (Table IV). With ABC costing, which more accurately charged overhead to the products that consumed it, product X unit costs dropped to \$96.78 (Table V). Similarly, the unit costs

of products Y and Z were impacted; the cost per unit of product Y decreased slightly, the cost per unit of product Z more than doubled. And, although total division costs remained constant, \$3,894,000 for the division, costs distributed to each product changed materially, as can be seen in Tables IV and V.

The impact of this change in cost distribution on the profitability of each product was dramatic (see Table VI). Using traditional costing methods, product X was shown to be contributing net profit of \$103,500, Y was contributing \$130,000, and Z was

	Products			Total division (\$)
	X (\$)	Y (\$)	Z (\$)	
<i>Traditional costing:</i>				
Sales revenue	2,760,000.00	1,000,000.00	450,000.00	4,210,000.00
Cost of goods sold	1,173,000.00	440,000.00	260,000.00	1,873,000.00
Gross profit	1,587,000.00	560,000.00	190,000.00	2,337,000.00
Less overhead expenses:				
Warehousing				12,000.00
Packing/shipping/order entry				248,200.00
Advertising				142,800.00
Selling				365,000.00
Receiving				61,000.00
Engineering/set-up				302,000.00
Depreciation				890,000.00
Total overhead expenses	1,483,500.00	430,000.00	107,500.00	2,021,000.00
Net profit	103,500.00	130,000.00	82,500.00	316,000.00
<i>ABC costing:</i>				
Sales revenue	2,760,000.00	1,000,000.00	450,000.00	4,210,000.00
Cost of goods sold	1,173,000.00	440,000.00	260,000.00	1,873,000.00
Gross profit	1,587,000.00	560,000.00	190,000.00	2,337,000.00
Less overhead expenses:				
Warehousing	7,590.00	2,210.00	2,200.00	12,000.00
Packing/shipping/order entry	161,700.00	55,000.00	31,500.00	248,200.00
Advertising	20,400.00	40,800.00	81,600.00	142,800.00
Selling	65,700.00	109,500.00	189,800.00	365,000.00
Receiving	43,920.00	9,760.00	7,320.00	61,000.00
Engineering/set-up	63,500.00	65,750.00	172,750.00	302,000.00
Depreciation	690,000.00	100,000.00	100,000.00	890,000.00
Total overhead expenses	1,052,810.00	383,020.00	585,170.00	2,021,000.00
Net profit	534,190.00	176,980.00	(395,170.00)	316,000.00

**TABLE VI.**  
**Product Profitability: Traditional versus ABC Costing**

contributing \$82,500. But, by using ABC to allocate costs more accurately, net profits were markedly changed. Product X net profits actually were \$534,190, a change of more than \$400,000.

Product Y showed a more modest \$46,000 increase, whereas product Z went from a net profit of \$82,500 to negative \$395,170. In other words, the traditional costing system was

overcharging costs to products X and Y, and grossly undercharging costs to Z. This is significant in terms of potential product elimination, pricing strategy, and salesforce allocation issues. In other words, the use of ABC offered the potential for improved decision making in each of these, as well as related marketing strategic decisions.

## MANAGERIAL IMPLICATIONS AND RECOMMENDATIONS

ABC is not just another fad nor is it a panacea for all that ails US industry. It is a natural progression of the technology of information systems. These systems are only useful to the extent that they realistically model a company's operations. In many manufacturing firms, such systems no longer support the difficult decisions required in industrial marketing. Sharman (1990) observed that the Japanese have driven Western manufacturers into low volume, low profit niches. This must be changed. ABC is a Western invention which can help in the struggle back from these niches. "Activity-based costing is the scalpel management accountants can provide to their companies to carve out strategy for the next competitive battle, that of economic survival" (Sharman, 1990, p. 12).

Cooper and Kaplan (1988, p. 103), the pioneers of the concept, stated that "activity-based costing is not designed to trigger automatic decisions. It is designed to provide more accurate information about production and support activities and product costs so that management can focus its attention on the products and processes with the most leverage for increasing profits. It helps managers make better decisions about product design, pricing, marketing, and mix, and encourages continual operating improvements". Industrial marketers need this support, and some are already getting it.

In practice, Siemens Company found that half of the orders it could get would be unprofitable. John Deere was able to get its bidding in line and profitably utilize its inhouse parts unit. Kanthal moved 70 percent of its customers from break-even to profitability. Northern

Telecom was better able to prioritize and focus its product mix. The plumbing fixture company was able to fine-tune its product line and improve profitability.

In conclusion, activity-based costing is a welcome change in the accounting system, but it is too important to be considered just another procedural change and left with the accountants. By adopting ABC, an industrial manufacturer will become a more effective marketer because the financial model of the company will reflect how things really work and reward effective strategies. This is the potential contribution of activity-based costing for improving marketing decision making.

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