



ACTIVITY-BASED COSTING FOR MARKETING

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Manufacturing costs and traditional cost accounting systems are not the only cause of America's problems in the world-class competitiveness arena. Marketing functions, particularly physical distribution, are a significant cost factor, yet marketing costs are being ignored in the mainstream discussions today. Also, activity-based costing (ABC) techniques and total cost management (TCM) concepts have been recommended and used by some companies for marketing activities since the late 1960s. How can they be merged with the concepts being promoted today?

THE PROBLEM'S HIDDEN CAUSE

Critics of traditional cost control systems who concentrate on production costs alone are overlooking a significant portion of the total costs of many manufactured products.

Physical distribution is the most effective area for this application.

A major cause of the higher cost of these products is the cost of physical distribution activities and other marketing functions. Marketing costs make up more than 50% of the total costs in many product lines and approximately 20% of the U.S. Gross National Product.

Physical distribution is a major cost factor in the United States. It may not be a major cost factor in geographically small countries, such as Japan or Great Britain, within their own domestic markets. Nevertheless, when foreign companies establish factories in the United States, they face the same logistics problems that U.S. companies encounter.

The theoretical advantages of just-in-time (JIT) methods may not work in all real-life situations, even in Japanese

transplants. In addition, the familiarity that U.S. companies have had with physical distribution problems may be an advantage for them over their foreign competitors. For example, a Japanese-American joint venture established a plant in Michigan to provide parts to a Japanese assembly plant in Ohio. In the Michigan plant, observers found that boxes of parts were stacked to the ceiling in all available floor space of the factory. When asked about JIT and other inventory reduction methods, the plant manager explained that parts were shipped from Japan by freighter to the West Coast, then by rail to Chicago, and finally by truck to Michigan. Therefore, it was more economical to ship in large quantities and store the extra supplies on the factory floor.

The joint-venture supplier in this example is majority owned by the Japanese company, which supplies another Japanese company, an automobile manufacturer, with these particular parts. Competition is not a factor because the two Japanese companies have prearranged agreements, so these physical distribution costs are

considered unavoidable under the circumstances.

Although this example illustrates the fallacy of assuming that the Japanese have some magic formula for manufacturing efficiency, it also indicates that marketing costs, particularly the costs of physical distribution, are a major factor in worldwide competition and should not be ignored in discussions of performance measurements and integrated cost systems.

ABC TECHNIQUES FOR MARKETING

The objective of marketing cost analysis is to provide relevant quantitative data that will assist marketing managers in making informed decisions regarding such important areas as profitability, pricing, and adding or dropping the product lines or territories. In achieving this objective it is necessary to be able to trace costs directly to product lines or to territories where possible and to establish a rational system of allocating nontraceable costs to the cost objective. The accounting profession has not pursued this challenge!

ABC principles can be applied in attempting to trace marketing costs to product lines and territories in order to measure profitability. I'll show you how. All you have to do is follow the procedure outlined next.

1. Establish activities performed as advertising, selling, order filling, shipping, and warehousing.
2. Accumulate direct costs for each activity, and separate into variable and fixed categories.
3. Determine cost drivers for each activity. For *selling*, the cost driver is gross sales, or orders received, or number of sales calls. For the activity of *order filling, shipping, and warehousing*, the cost driver would be number, weight, or size of units shipped. For the activities of *credit and collection and general office*, the cost driver is number of customer orders or number of invoice lines.
4. Calculate unit costs for each activity. The unit cost of each activity is determined by dividing the total activity cost by the cost driver selected. Where conditions justify the practice, the unit cost can be used as the basis for budgeting and for the establishment of standards in a standard cost system.
5. Apply contribution cost analysis. The accumulation of direct costs

and the allocation of indirect costs to marketing activities enables management to assign total cost responsibility to each marketing activity although the identification of total costs does not always provide relevant information for specific decisions. Only by applying contribution analysis will the company be able to determine profit contribution by product line or by territory.

Tables 1-5 were prepared by the controller of Atlanta Company to provide information about marketing prof-

itability. Table 1 shows selling prices, unit manufacturing costs, units sold, and other bases of variability. Table 2 shows total variable and fixed costs for each activity and develops unit rates for variable and fixed costs of each major marketing activity: selling, warehousing, packing and shipping, and general office.

Selling. The selling function is represented by the dollar value of sales. There may be justification for basing variability of selling cost on other factors, such as the number of sales calls or orders obtained, and the controller

TABLE 1/ATLANTA COMPANY PRODUCT LINE DATA YEAR 19X1

Product Line Information	Product Line		
	A	B	C
Selling price	\$10.00	\$ 8.00	\$12.00
Unit manufacturing cost	\$ 8.00	\$ 5.00	\$11.00
Quantity of units sold and shipped	50,000	30,000	20,000
Average weight of units sold	2.0 lbs.	3.0 lbs.	4.0 lbs.
Number of customers' orders	100	200	200
Variable portion of manufacturing cost	60 %	60 %	60 %

TABLE 2/ATLANTA COMPANY CALCULATION FOR PER UNIT COST RATES

Marketing Activity	Cost Driver	TOTAL COSTS		
		Total Volume	Cost of Marketing Activity	
			Total	Unit Rate
Selling	Dollar value of sales	\$ 980,000	\$49,000	5.0 %
Advertising	Quantity of units sold	100,000	\$40,000	\$.40
Warehousing	Weight of shipped	270,000lb.	\$27,000	\$.10
Packing and shipping	Quantity of shipped	100,000	\$20,000	\$.20
General office	Number of customers' orders	500	\$10,000	\$ 20.00

Marketing Activity	VARIABLE AND FIXED COST RATES			
	Variable Cost	Unit Rate	Fixed Cost	Unit Rate
Selling	\$ 29,400	3.0 %	\$19,600	2.0 %
Advertising	\$ 10,000	\$.10	\$30,000	\$.30
Warehousing	\$ 13,500	\$.05	\$13,500	\$.05
Packing and shipping	\$ 12,000	\$.12	\$ 8,000	\$.08
General office	\$ 2,000	\$ 4.00	\$ 8,000	\$ 16.00

must select the basis that has the main causal effect on cost variability. Atlanta Company uses the basis of dollar value of sales.

Advertising. Advertising is a promotional activity, similar to selling, which logically could be attributed to the same factors. Atlanta selected units of product sold. Note that advertising may or may not have variable cost characteristics. Some companies increase their advertising when sales are down, so the cost may bear an inverse relationship with sales. Atlanta found that a portion of advertising varies with sales and that a larger portion is fixed.

Warehousing. Warehousing is the physical distribution function of storage and terminaling. The factor of variability selected by Atlanta is weight of product sold.

Packing and Shipping. Another physical distribution function, packaging and shipping, usually has a greater proportion of variable expenses and is related to the quantity of units of product shipped. Atlanta assumes units shipped are equal to units sold.

General Office. Atlanta needs clerical, accounting, credit and collection, and other activities to service the overall marketing function. Each service has its own variability, but Atlanta assumes that number of orders affects all.

Table 3 provides additional product and territory transactions data. For example, the quantity of product C sold in the West territory during the period is 14,000 units. Customers' orders for product A in the South total 50. These data form the basis for the determina-

TABLE 3/ATLANTA COMPANY SALES AND ORDERS BY TERRITORY (IN UNITS) YEAR 19X1

Transaction by Territory	Total	Products		
		A	B	C
Products sold:				
West	60,000	26,000	20,000	14,000
South	40,000	24,000	10,000	6,000
Total	100,000	50,000	30,000	20,000
Customers' Orders:				
West	280	50	80	150
South	220	50	120	50
Total	500	100	200	200

TABLE 4/ATLANTA COMPANY PROFITABILITY STATEMENT BY TERRITORY (ALL PRODUCTS) YEAR 19X1

	Total Company	Territory		Allocation Basis
		West	South	
Sales revenue	\$ 980,000	\$ 588,000	\$ 392,000	
Less: cost of sales	770,000	462,000	308,000	
Gross margin	\$ 210,000	\$ 126,000	\$ 84,000	
Less: Expenses				
Selling	\$ 49,000	\$ 29,400	\$ 19,600	5% of sales
Advertising	40,000	24,000	16,000	\$.40/unit sold
Warehousing	27,000	16,800	10,200	\$.10/lb. shipped
Packing and shipping	20,000	12,000	8,000	\$.20/unit sold
General office	10,000	5,600	4,400	\$.20/order
Total expense	\$ 146,000	\$ 87,800	\$ 58,200	
Operating income (Loss)	<u>\$ 64,000</u>	<u>\$ 38,200</u>	<u>\$ 25,800</u>	

Uniphoto/Jim Olive.



Production costs have been the center of attention in management accounting recently, yet marketing costs can be 50% of a total product line.

tion of the cost calculations in subsequent tables.

The profitability analysis by territory (shown in Table 4) reveals that both territories show a profit from operations. Table 5 shows the total company profitability by product line. The profitability statement by product line provides additional information for marketing managers. Product lines A and B are profitable, whereas product line C shows an operating loss of \$16,000. This statement has revealed that although the overall company shows a profit and that both territories are profitable, one product line requires further analysis. Additional tables could be presented with data by product line for each territory separately to further isolate the operating loss of product C.

As you can see, "Charging costs directly to products eliminates the need

**TABLE 5/ATLANTA COMPANY PROFITABILITY STATEMENT BY PRODUCT LINE
(ALL TERRITORIES) YEAR 19X1**

	Total Company	Product Line			Allocation Basis
		A	B	C	
Sales revenue	\$ 980,000	\$ 500,000	\$ 240,000	\$ 240,000	
Cost of sales	770,000	400,000	150,000	220,000	
Gross margin	\$ 210,000	\$ 100,000	\$ 90,000	\$ 20,000	
Less: Expenses					
Selling	\$ 49,000	\$ 25,000	\$ 12,000	\$ 12,000	5% of sales
Advertising	40,000	20,000	12,000	8,000	\$.40/unit sold
Warehousing	27,000	10,000	9,000	8,000	\$.10/lb. shipped
Packing and shipping	20,000	10,000	6,000	4,000	\$.20/unit sold
General office	10,000	2,000	4,000	4,000	\$20/order
Total expense	\$ 146,000	\$ 67,000	\$ 43,000	\$ 36,000	
Operating income (Loss)	\$ 64,000	\$ 33,000	\$ 47,000	\$ (16,000)	

to allocate or assign costs. Costs that cannot be charged directly should be assigned to the product through activity-based costing.¹

This modern advice dovetails with my illustration, which demonstrates that the techniques recommended for marketing cost analysis at least 20 years ago are conceptually equal to those now being recommended for production costs by Robert Kaplan, William Ferrara, Michael Ostrenga, and others contributing to the deluge of activity-based costing literature². The only differences are that only marketing costs were involved, the state of technology was less developed, and the accounting profession did not recognize the importance of marketing costs and the methods being recommended.

WE MUST EMPHASIZE MARKETING COSTS

The main theme of management accounting journal articles in recent years has been world-class competition, emphasizing the gradual slipping of U.S. manufacturers, particularly in comparison with Japanese manufacturers. Production costs have been the center of attention, while marketing costs have been ignored. We must focus on marketing costs as an important component of the total cost of a product.

The use of activity-based costing techniques for marketing functions arose during the years 1968 through 1973 when marketing executives urged members of the accounting profession to develop a better system of

*Marketing costs,
particularly
physical
distribution costs,
must be taken
into account
when pricing
products and
making other
management
decisions.*

identifying, classifying, and allocating physical distribution costs. At that time, several articles (including one of mine³) isolated the activities in the major marketing functions. Cost drivers, a modern euphemism for activity bases, were identified for each activity within the marketing functions.

Techniques that resemble the recently discovered activity-based costing system and the total cost concept, which is the forerunner of total cost management, were discussed thoroughly and recommended for physical distribution costs at the request of the marketing managers of several hundred U.S. corporations. The accounting profession largely ignored the recommendations of the practitioners and

overlooked the fact that physical distribution activities have cost characteristics similar to those of production activities. Now, 20 years later, accountants are attaching new names to these same techniques. Activity-based costing techniques have been and should continue to be applied to marketing costs to assist companies in management decision making. ■

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¹Michael R. Ostrenga, "Activities: The Focal Point of Total Cost Management," MANAGEMENT ACCOUNTING®, February 1990, pp. 42-49.

²Robert S. Kaplan, "The Four-Step Model of Cost Systems Design," MANAGEMENT ACCOUNTING®, February 1990, pp. 22-26. Also, William L. Ferrara, "The New Cost/Management Accounting: More Questions than Answers," MANAGEMENT ACCOUNTING®, October 1990, pp. 48-52.

³Ronald J. Lewis, "Strengthening Control of Physical Distribution Costs," Management Services (AICPA), January-February 1968. Also, J.L. Heskett, R.M. Ivie, and N.A. Glaskowsky, Jr., Business Logistics Management of Physical Supply and Distribution, The Ronald Press Company, New York, N.Y., 1964.

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