

INCREASING IMPORTANCE OF USING ACTIVITY BASED COSTING FOR DETERMINING MARKETING COSTS

Asuman ATİK

Marmara Üniversitesi, İ.İ.B.F., İngilizce İşletme Bölümü, Araştırma Görevlisi, Dr.

INCREASING IMPORTANCE OF USING ACTIVITY BASED COSTING FOR DETERMINING MARKETING COSTS

Abstract: Today, in order to have competitive strength, firms have to make better decisions about production technologies, product groups, pricing, advertising and distribution strategies. In order to make better decisions, they need correct cost information. Because of developing and changing production technologies, direct material and direct labour are no longer the most important production factors, instead, the percentage of manufacturing overhead costs in the total cost structure has increased. Traditional cost accounting systems are insufficient to provide accurate cost information and Activity Based Costing (ABC) is suggested by many academicians and accountants as a better cost accounting system. Additionally, high competition increased the marketing activities and consequently marketing costs of the companies. In this study, first, ABC and marketing costs are examined, and then in order to have accurate cost information and to develop better strategies in every business area, the importance of using ABC for allocating marketing costs to cost objects is stressed.

Keywords: Activity Based Costing, Marketing Costs

PAZARLAMA MALİYETLERİ İÇİN FAALİYETE DAYALI MALİYET SİSTEMİNİ KULLANMANIN ARTAN ÖNEMİ

Özet: Günümüzde rekabet edebilme gücüne sahip olabilmek için firmalar üretim teknolojileri, ürün grupları, fiyatlama, reklam, dağıtım stratejileri gibi konularda daha doğru kararlar vermek zorundadırlar. Daha doğru kararlar verebilmek için de doğru maliyet bilgilerine ihtiyaçları vardır. Gelişen ve değişen üretim teknolojileri nedeniyle direkt işçilik ve ham madde maliyetlerinin toplam maliyetler içerisindeki payı azalırken genel üretim maliyetlerinin payı gittikçe artmıştır. Geleneksel maliyet sistemleri doğru bilgi sunmak konusunda yetersiz kalmış, maliyetleri öncelikle faaliyetlere ve daha sonra da maliyet objelerine dağıtan "Faaliyete Dayalı Maliyet Sistemi (FDMS)" birçok akademisyen ve muhasebeci tarafından daha doğru maliyet bilgisi sağlayan muhasebe sistemi olarak önerilmiştir. Ayrıca yüksek rekabet firmaların pazarlama faaliyetlerinde dolayısıyla da pazarlama maliyetlerinde büyük artışlara yol açmıştır. Bu çalışma da FDMS ve Pazarlama Maliyetleri'nin yapısı incelenmiş, doğru maliyet bilgisine sahip olabilmek ve doğru stratejiler geliştirebilmek için pazarlama maliyetlerinin de FDMS kullanılarak maliyet objelerine dağıtılması gereği önemle vurgulanmıştır.

Anahtar Kelimeler: Faaliyete Dayalı Maliyet Sistemi, Pazarlama Maliyetleri

I. INTRODUCTION

In today's world, most of the companies are faced with high level of competition. In a highly competitive environment, firms are forced to create much higher value to their customers than their competitors do. Everyday changing needs and demands of consumers lead to increased product/service diversity and complexity, and shorter product life cycles. Therefore, correct decision-making is crucial to success. In order to make correct decisions about product mix, pricing, promotion, distribution strategies and production technologies, managers or decision-makers need to have true cost information. Cooper & Kaplan [1] emphasise that intensified global competition and radically new product technologies have made accurate product cost information crucial to competitive success.

Traditional cost management systems were developed in order to satisfy the needs of the companies

manufacturing a narrow range of products. Direct material (DM) and direct labor (DL) were the most important production factors and they could easily be traced to individual products. Only unit-based cost drivers were used to assign overhead costs.

Today, overhead costs constitute a bigger portion of total product costs than in the past, and many overhead activities are not unit-based. Using traditional costing methods and assigning overhead costs by using unit-based cost drivers caused big cost distortions [2].

This situation made the companies and management accountants more sensitive about assigning overhead costs over products, and Activity Based Costing (ABC) system has been developed. ABC focuses on the activities rather than only costs, and it recognises that by using unit-based and nonunit-based activity drivers, overhead costs can be assigned to products more accurately.

Changing business environment and high competition have also caused many changes in the marketing area. Marketing concept has gained more importance over selling concept. Today, firms are making big marketing researches before production rather than producing a product and then trying to sell it. With technological developments, new marketing tools emerged. Attracting and keeping profitable customers has become one of the most important objectives of marketers. While the tasks of the marketing department are proliferating, the costs of it are also reaching big amounts. Firms are giving more importance to marketing activities and increasing their marketing budgets.

Some companies have very high marketing costs, sometimes marketing costs are even higher than production costs. Such a situation makes the marketing cost analysis crucial. For the financial reporting purposes, these costs are expensed in the period they are incurred. For internal reporting purposes, some firms are allocating these costs to the products according to sales amounts or number of products sold [3]. However such allocations can distort the production costs and the profitability information. Therefore we can say that the importance of using Activity Based Costing for determining marketing costs has tremendously increased.

Foster & Gupta [4] recognise the importance and the need for understanding the nature of marketing costs and developing measures that can evaluate both the efficiency and cost effectiveness of marketing functions. Relative to research on manufacturing costs, however, marketing costs have received very little attention in the accounting literature. In the marketing literature, analyses about marketing costs have primarily focused on the effects of marketing functions on sales volume.

In the light of the subjects that have been mentioned so far, the need for studying the structure of marketing costs and ABC in a more detailed way becomes clear. In this study, firstly ABC and marketing costs are examined, and then in order to have accurate cost information and to develop better strategies in every business area, the importance of using ABC for marketing costs is stressed.

II. TRADITIONAL COST ACCOUNTING SYSTEMS

Beginning from the late 1980s, we see new costing approaches that were offered by mainly academicians and accountants. Since then, writers have named these new approaches as contemporary cost accounting systems. The methods that had been used until 1980s and some of are still used by some companies are named as traditional cost accounting methods.

Traditional cost accounting systems assume that

all costs can be classified as fixed or variable with respect to changes in the units or volume of products produced [2]. A variable cost varies in direct proportion to changes in some measure of volume. For example, the cost of direct material used to manufacture a product is a variable cost. Doubling the units produced will result in a doubling of the cost of direct materials used to produce the units. Under the traditional cost behaviour classification scheme, any cost that is not classified as variable is considered as fixed [5].

A company's non-manufacturing overhead, such as selling and administrative costs can also be broken down into a portion that is variable and a portion that is fixed. Sales commissions typically change in direct proportion to change in sales, and are therefore variable. Depreciation on a company's delivery equipment typically does not vary with some measures of volume and is therefore classified as fixed [5].

According to Hanson & Mowen [2], "a cost accounting system that uses only unit-based activity drivers to assign costs to cost objects is called a traditional cost system". In traditional costing, number of drivers to assign costs on products is limited. Most widely used drivers are units of product, direct labour hours and machine hours. Traditional cost accounting systems were developed in the times when most companies manufactured a narrow range of products. Direct material and direct labour were the most important production factors and the costs of DM and DL were easily be traced to individual products [2]. Because overhead constituted an insignificant part of production costs, allocating the cost of overhead activities by using unit-based drivers didn't lead to big cost distortions.

Still many companies continue to use traditional cost accounting system successfully, but many of them have recognised the need for a new cost accounting system.

III. CHANGING BUSINESS ENVIRONMENT AND THE NEED FOR A CONTEMPORARY COST ACCOUNTING SYSTEM

High competition is the most striking change in the business environment. Companies are forced to provide higher quality products or services to their customers at lower prices. To increase the quality and lower the prices or make the price more affordable, understanding the cost structure of the company and gathering true cost information have gained importance.

High competition has also increased the importance of making right decisions. In the past, companies had enough profits to mask their wrong or poor decisions. Today, they have no chance to make as many mistakes as they could do in the past. Knowing true

product costs, costs of serving customers, markets or market segments are crucial to survive and remain competitive [6].

Technological developments are interrelated with the changes in the business environment. New product or service requirements lead managers to search for new technologies. These new technologies change the composition of inputs used in production. In many sectors, direct labour has lost its importance, instead overhead activities started to constitute bigger parts of production costs.

Technical changes have also accelerated the new product innovations. Today products/services have shorter life cycles and managers are making decisions about how to eliminate some products from their product line or how to launch new products to the market more frequently. Companies are dividing market into segments and offering different products for different segments; this means lower sales and profits per product [7]. For all these new segments well developed logistics systems, selling and promotion activities are the most important factors to assure availability of the desired products.

Therefore one of the most important changes in the business environment is seen in the marketing area. Marketing costs, especially distribution costs have started to constitute bigger portions of total costs. Stevenson & Barnes [7] make some explanations about increased distribution and selling costs. In order to have competitive effectiveness, companies are adopting just in time inventory (JIT) management system. This system calls for reduced finished goods (FG) inventory and smaller FG inventory requires more set ups and more frequent orders of smaller quantities. This can be interpreted as JIT shifts costs from storage to distribution.

Additionally, today, the attraction and retention of profitable customers is more important than in the past. Everyday new marketing channels are emerging and such diversity makes a better accounting system necessary to monitor and support the analysis of alternative marketing tool [4].

IV. ACTIVITY BASED COSTING

An organisation has to perform certain activities for the products and services it produces and/or sells. The cost of each of those activities is measured and assigned only to those products and services requiring the activity, using appropriate assignment bases that are called drivers. In that way, it is possible to understand the real cost of producing each product or providing each service. The data can also be formatted to determine the cost of serving each customer. Non-activity costs, such as direct materials or direct outside services, do not need to be included because they already are attributable to specific

products or services [8].

ABC is an advanced method of assigning appropriate production, overhead, administrative, and selling costs to products and, at the same time, to customers who purchase the products [9]. ABC 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 to increase profits [7].

While traditional cost accounting systems focus on units produced, as stated before, ABC system focuses on activities performed to produce products. "Costs are traced to activities and then to products based on each product's consumption of the activities" [10]. The most important factor that distinguishes ABC from traditional costing is in the treatment of overhead costs.

ABC is a two-stage process. In the first stage, contrary to traditional costing, it traces overhead costs to activities rather than to an organisational unit, such as departments. In the second stage, activity costs are assigned to products by using unit-based and non-unit based activity drivers [2].

There are two types of drivers, resource drivers and activity drivers. *Resource drivers* are the links between the resources and the activities. They determine how activity centers consume resources. *Activity drivers* are methods of assigning activity costs to cost objects. Activity drivers are selected based on use of activities when producing a product or providing a service [11].

Brand, et al. [12] emphasises the importance of activity analysis because it involves the analysis of each driver. By this way,

- what work is performed,
- why,
- which resources are used and
- what the outcome is

become clearly apparent. The data generated through the activity and driver analysis may be used to identify essential and non-essential work activities and overall cost improvement opportunities.

The strategic and tactical decision making process of a company is improved by ABC. It helps in making decisions on product mix and price for improving the utilisation of resources and minimising the cost of production [13]. In the light of the information provided by ABC,

- cost leadership,
- product differentiation,
- market penetration,
- vertical or horizontal integration strategies

can be developed much more truly.

IV.1. Cost / Benefit Analysis of ABC System

As stated before, Activity Based Costing offers significant benefits such as

- greater product-costing accuracy,
- improved decision making,
- enhanced strategic planning, and
- better ability to manage activities.

However, it may not be appropriate for each firm, such as for the firm that produces and sells only one product. The decision on the implementation of an ABC system should be considered very well because the change not only needs resources in the form of man hours and capital (for example, investment in purchasing an ABC software, training employees to apply the system for decision making, and the documentation of various cost data at a detailed level) but also the involvement of employees [13].

In deciding whether to implement a contemporary cost management system, a manager must assess the trade off between the cost of measurement and the cost of errors. *Measurement costs* are the costs associated with the measurements required by the cost management system. *Error costs* are the costs associated with making poor decisions based on inaccurate product cost information. An *optimal cost management system* is the one that minimises the sum of measurement costs and error costs [2].

According to Compton [11], at the beginning of the ABC implementation project, the objectives and the scope of the work should be defined, and then feasibility analysis of the project should be done. He suggests managers to look whether the company has time, money, technical know-how, suitable organisational climate and personnel to carry out and complete an ABC project in an adequate time and without delays.

IV.2. Establishing an Implementation Strategy

Cokins [14] asserts that by training and inclination, accountants are detail oriented and when CPAs undertake an ABC project, they get confused with the huge data. He also points out that those who want to implement an ABC project successfully shouldn't forget that "close enough is not only good enough, it is often key to success". Trying to reach exactness is difficult, time consuming and that eventually becomes the project's 'kiss of death'.

Having management support is crucial in the implementation stage of ABC because the process requires inputs and resources from different departments. Starting with a pilot study, especially in a worst department, where having some success is sure, helps getting the support of the management [15].

Another important point is that establishing a reasonable time frame, especially 6 months to 1 year, keeps people motivated and involved to the project [15]. If a project lasts too long, employees will lose their motivation, the project will be unsuccessful and the chance to be successful in the second attempt compared to first one will decrease.

IV.3. Forming a Team

Having a cross-functional team that includes representatives from information technology, finance, human resources and marketing is key for implementation of ABC. It is also helpful to have a consultant who can give an objective view and guide the process [15]. Having team members from different departments increases the efficiency of the team and provides different perspective on events.

Part-time members may be desirable for small projects, however, for large projects full-time members are the answer. A project leader must be appointed one who possesses leadership abilities with knowledge of ABC technology [11].

For an effective implementation, use and acceptance of an ABC system, Compton [11] also emphasises

- the importance of providing knowledge about ABC and
- training the management, members of the implementation team and the users of the ABC information system.

ABC system cannot be used effectively by the personnel who do not have necessary knowledge about it.

IV.4. Identifying Activities and Calculating Cost of the Activities

The focus of ABC is activities, so identifying activities is a very important step. Activity implies action taken or work performed [2]. While defining and discovering activities, the most common techniques are

- observation,
- questionnaires and interviews [9].

Compton [11] also lists and evaluates the information gathering techniques for ABC. They are

- interview,
- observations,
- questionnaires,
- timekeeping systems and
- the company's other information systems or databases.

Interviewing provides good and necessary information but it may be too costly. The company's information systems, databases and especially general ledger may be used to gather information. However these data may be overwhelming or include historical cost data. Those factors should be taken into consideration. Cheapest and fastest method to obtain information is 'looking around'. To make correct decisions about observed facts needs experience and the ability to draw right conclusions from the situations [9].

After identifying activities, relationship between the resources and the activities is determined. Resources are economic elements that are used in the performance of the activities. Resources can either be factors that are consumed by activities during the transformation of input to output or factors that perform the activity [16]. Cause and effect relationship between the resources and the activities is called as resource driver. Then, cost of each activity is calculated.

Compton [11] determines some tips for selecting resource and activity drivers;

- All costs should be assigned to resource and activity centers.
- Costs should be traced to resource and activity centers where possible.

- Resource and activity centers should be chosen that show a cause-and-effect relationship.

- Common sense should be used to determine how to allocate.

- Drivers should be chosen that match the type of activity.

- An attempt should be made to build a consensus among operating personnel, cost accounting, industrial engineering, etc.

- The number of drivers should be kept to a minimum.

- Drivers should be chosen that focus on improving performance.

- Drivers should be chosen that have a modest cost of measurement.

Major activities should be grouped in order to keep the ABC model simple and to avoid from too much detail. Compton [11] suggests ignoring the insignificant activities and to have no more than 20 or 25 activity centers for an ABC project.

Another important issue is the identification of cost objects. Products, services, customer groups or distribution channels can be established as cost objects. Cost of activities or cost pools are assigned on cost objects by using activity drivers.

Initial implementation stage of ABC is a long and difficult period. It must be well planned but once ABC is established, it can serve for very long periods in an effective way.

V. MARKETING COSTS

According to Selnes [3], marketing costs are those costs that are generated in order to move the "values" produced from the company to the customer, and the costs required to create and to maintain customer relationship. Logistics and services can be included in marketing, because the speed and accuracy in delivering goods (logistics) is clearly a marketing-mix variable. The quality of the service is also a marketing-mix variable as it affects word of mouth and customer loyalty.

Foster & Gupta [4] define marketing costs as expenditures aimed at promoting the customer's awareness of a product or customer's service and in translating that awareness into one or more purchases and the continuation of that relationship with the organisation.

Marketing or selling costs are the costs that are necessary to market and distribute a product or service. They are often referred to as order getting and order filling costs. Salaries and commissions of sales personnel, advertising and sales promotion are examples of order getting costs; and warehousing, shipping, customer service are examples of order filling costs [2].

Some more examples for marketing expenses are advertising, market research, brochures, newsletters, promotional seminars, direct mail, salaries of marketing department personnel, public relations activities, meals, travel and entertainment for prospects and clients, association involvement, certain subscriptions and so on [17].

As many other areas of the business environment, the marketing environment has also been facing a big change. Companies are adopting new marketing strategies in order to survive and stay competitive. They are becoming more market oriented and also professional in marketing. Today, marketing costs constitute bigger parts of total cost structure of most companies. Therefore, marketing costs need a closer look and much more analysis than in the past.

New marketing strategies also can make an existing cost system obsolete. For example; if a company decides to operate in a niche market, it should produce in low volumes or if it decides to produce standard parts for a huge market, it needs the production of high volumes. Therefore if the overhead costs are allocated according to production units or in other words the cost system is not designed to trace overhead appropriately, the changes in marketing strategies may result in big cost distortions [10].

Selnes [3] points out the difficulty of analysing the marketing profitability, which is caused by the characteristics of marketing costs. It is difficult to define and measure output and input. For example, should the relevant output be counted in terms of number of units sold, number of satisfied customers, or some other measure? And by the same token, is the relevant input is the amount that is spent on marketing in the same year or the previous year; and should it include costs other than marketing?

The fact that most companies do not know what proportion of their total marketing outlay is spent on each product, area or customer group may be due to vagueness over the nature of certain costs. For example; is the packaging cost a promotional, a production, or a distribution expense? Some important marketing costs are hidden in manufacturing costs or in general and administrative costs [18], such as travelling, communication, warehousing costs, cost of invoice preparation, credit management and freight accounting.

The quality of data in analysing the marketing costs is related to how costs are allocated. This has not been properly addressed in the marketing literature. There have been some discussions of allocation procedures, but these have mainly addressed marketing costs that vary directly with output, sales or direct activities. Most companies allocate marketing costs to products and/or customer groups by using sales as an allocation key. Here, the major problem is the implicit assumption that marketing costs vary linearly with sales, and thus sales are a valid cost-driver. Products may vary with respect to required sales effort, and this variation does not necessarily correspond to the price of sales of the product [3].

In many enterprises, although the costs of marketing greatly exceed the costs of production, very little attention has been given to the analysis of marketing costs compared to the extensive attention given to production costs [18]. Characteristics of marketing costs play a big role in this situation. Wilson, et al. [18] and Foster & Gupta [4] extensively explain the characteristics of marketing costs;

- It is difficult to determine the effectiveness and efficiency of marketing cost outlays. For some marketing costs, such as advertising, there is often a sizeable lag between the incurrence of marketing costs and the receipt of benefits. This lag increases the difficulty of identifying causal relationships between marketing costs and marketing cost objects, e.g., products and customers.

- Marketing costs are frequently indivisible or joint costs, often intended to support a product group.

- The cost of performing two main tasks of marketing –order getting and order filling- have different effects and must be treated differently. For example; minimisation principle should be applied to distribution activities, cost of distribution should be kept at the possible lowest level, however, this principle can not be applied to promotion since minimal promotion may mean minimal sales. Consequently, an optimisation principle must be applied and a balance should be realised between the desired level of sales and the level of promotion necessary to achieve that level of sales.

- Financial control in marketing is complicated because a number of factors are influenced by the costs incurred –the product, the territory, the consumer group, and the salesman's profitability, in contrast to the product alone that is the center of attention in production accounting.

- Special cost control problems arise while evaluating the results of each element of the marketing mix. It is almost impossible to isolate the role played by,

for example, direct selling in the marketing operation from the roles played by promotion, price and product features.

VI. APPLYING ABC TO MARKETING COSTS

VI.1. Why to Apply ABC to Marketing Costs

The objective of marketing cost analysis is to provide relevant quantitative data that will assist marketing managers and decision makers in making strategic and tactical decisions regarding pricing, profitability, marketing mix, adding or dropping the product lines and territories [19]. While the function of the marketing department is increasing, the costs of it are also reaching to very big amounts. Companies are increasing their marketing budgets to stay competitive. Today, firms have very high marketing costs. Sometimes marketing costs are higher than production costs. Such a situation makes marketing cost analysis and examination necessary; and therefore using better cost accounting system gains importance.

Turney [20] asserts that it is sensible to exclude non-manufacturing activities for inventory valuation, it is counterproductive for managerial purposes. It is also an inevitable fact that products require many activities outside manufacturing, such as designing products, processing customer orders and distributing products to customers. Failing to include the cost of these activities distorts product costs if (1) the cost of these activities is high and (2) the activities are consumed differently by different products.

Turney [20] gives the following example to show importance of allocating non-manufacturing costs properly. Let's assume a company doesn't use ABC to trace non-manufacturing costs, and the size of customer orders varies significantly from product to product. The cost of order entry, sales and marketing activities is expensed and not traced to the products. Therefore products ordered in small batches are significantly undercosted and this undercosting creates an incentive to or a wrong signal to accept small customer orders.

Another example is the case study the author of this paper worked on in a foreign multinational company located in Turkey. In the interviews conducted in that company, a cost control manager reported that, in the year 2000, price of liquid oil brand of that multinational company was 33% higher than the price of the strongest competing brand. There is a huge competition in Turkish liquid oil and olive oil sector. Price of a brand is one of the key determinants of sales. Because the pricing strategy of that company was cost plus mark up, the increase in the price was the result of the increase in the costs. Cost accountants of the company recognised the importance of paying more attention to the cost analysis

of this product. Whether production activities were realised inefficiently or costs were allocated in a wrong way should have been determined. ABC was suggested to have more precise cost measures of liquid oil product and to get better information about activities realised to produce liquid oil. After some studies, some problems were determined in the allocation of company overhead costs. Costs of R&D, Marketing, Financial & Commercial, and Human Resources Management departments were being allocated according to net sales. Sales amount of liquid oil was very high. Although liquid oil was requiring very little R&D and marketing activities, the amount of R&D and marketing costs allocated to liquid oil division was higher since it has a high sales volume. This fact caused a fictitious increase in the cost of product and consequently increased the price.

VI.2. How to Apply ABC to Marketing Costs

While applying ABC on marketing costs, *the first step* is establishing activities performed, such as advertising, selling, order filling, shipping, and warehousing. *The second step* is accumulating direct costs for each activity. And *the next step* is determining cost drivers for each activity. Lewis [19] gives the following examples for possible cost drivers.

- for selling; the cost driver may be number of orders received, number of sales calls or gross sales,
- for the activity of order filling, shipping and warehousing; the cost driver may be number, weight, or size of units shipped,
- for the activities of credit & collection and general office; the cost driver may be number of customer orders or number of invoice lines.

Then, the unit cost of each activity is determined by dividing the total activity cost by the cost driver selected.

Wilson, et al. [18] also gives examples for the types of marketing costs and the possible cost drivers (bases of allocation) to allocate these marketing costs on cost objects (such as products, customer groups and sales territories).

- for selling; the cost driver may be selling time devoted, number of sales calls, or direct tracing,
- for advertising; the cost driver may be direct tracing, or on the basis of space and time by media,
- for sales promotion; the cost driver may be direct tracing, or on the basis of analysis of sales records,

- for storage and shipping; the cost driver may be space occupied times average inventory, number of shipping units, or average order size,

- for order processing; the cost driver may be number of order lines, or number of invoice lines.

Allocation of marketing costs on cost objects by using ABC will be clearer with the following numerical example.

X Company produces two types of olive oil, extra

virgin and pure. 95% of all olive oil comes out as Extra Virgin, the highest quality olive oil. The remaining olive oil is branded as Pure. Pure olive oil is lighter in colour and aroma, some customers prefer pure oil, because of its lighter taste. Marketing activities are intensively realised for selling extra virgin olive oil because it is the main product of the company.

The Company's two income statements are presented below. One is prepared according to traditional accounting method and the other is prepared according to ABC.

Income Statement of X Company by Product Line
For the Year Ended 31.12.200X
(000000, TL.)

According to Traditional Cost Allocation Method

	Extra Virgin	Pure	Total
Net Sales Quantity	3,8 ton (95%)	0,2 ton (5%)	4 ton
Sales Revenue	4,830,000	230,000	5,060,000
<u>COGS</u>	<u>4,025,000</u>	<u>200,000</u>	<u>4,225,000</u>
Gross Profit	805,000	30,000	835,000
Transportation (a)	171,000	9,000	180,000
Marketing & Selling (b)	304,000	16,000	320,000
<u>Adm. Exp. (c)</u>	<u>190,000</u>	<u>10,000</u>	<u>200,000</u>
Net Income	140,000	(5,000)	135,000

Income Statement of X Company by Product Line
For the Year Ended 31.12.200X
(000000, TL.)

According to Activity Based Costing Method

	Extra Virgin	Pure	Total
Net Sales Quantity	3,8 ton (95%)	0,2 ton (5%)	4 ton
Sales Revenue	4,830,000	230,000	5,060,000
<u>COGS</u>	<u>4,025,000</u>	<u>200,000</u>	<u>4,225,000</u>
Gross Profit	805,000	30,000	835,000
Direct Selling (a)	112,700	2,300	115,000
Indirect Selling (b)	47,500	2,500	50,000
Adv.&Sales Promotion (c)	99,000	1,000	100,000
Transportation (d)	172,800	7,200	180,000
Storage (e)	52,800	2,200	55,000
<u>Adm. Exp. (f)</u>	<u>190,000</u>	<u>10,000</u>	<u>200,000</u>
Net Income	130,200	4,800	135,000

A single allocation rate depending on "total quantity sold" is used as a driver.

(a) $180,000 \times 0,95 = 171,000$

$180,000 \times 0,05 = 9,000$

(b) $320,000 \times 0,95 = 304,000$

$320,000 \times 0,05 = 16,000$

(c) $200,000 \times 0,95 = 190,000$

$200,000 \times 0,05 = 10,000$

(a) Direct selling cost pool includes the following resource consumptions that are determined by direct tracing;

- Salaries of sales personnel
- Commissions of sales personnel
- Travelling costs of sales personnel

Selling time is taken as the activity driver to allocate direct selling costs to product lines in proportion to selling time devoted to each product type.

Extra Virgin : 98 % of total selling time

Pure : 2 % of total selling time

Extra Virgin : $115,000 \times 0,98 = 112,700$

Pure : $115,000 \times 0,02 = 2,300$

(b) Indirect selling cost pool includes the following resource consumption determined by direct tracing;

- Sales Administration (Fees of marketing department managers and personnel other than selling personnel)
- Training provided to marketing and sales personnel
- Marketing research costs

Indirect selling costs are allocated to product lines taking the “quantity sold” as activity driver.

Extra Virgin : 50,000 x 0,95 = 47,500
 Pure : 50,000 x 0,05 = 2,500

(c) Advertising and Sales Promotion cost pool includes the following resource consumption determined by direct tracing;

- Advertising Costs (Including production costs of advertising material and media costs)
- Consumer and trade promotions (premiums, exhibitions...)

Allocation to product lines on basis of direct tracing realised by analysis of source records and documents. As a result of this analysis, the amounts of advertising and sales promotion expenses are determined as follows;

Extra Virgin : 99,000
 Pure : 1,000

(d) Transportation cost pool includes the following resource consumption determined by direct tracing;

- Fees paid to carriers
- Fees of transportation department personnel
- Expenses related to transportation vehicles

Allocation to product lines on basis of direct tracing realised by analysis of bills, source records and documents.

Extra Virgin : 172,800
 Pure : 7,200

(e) Storage cost pool includes the following resource consumption determined by direct tracing.

- Storage costs of finished goods

- Fees of warehouse department personnel
- Rent and depreciation of warehouse

Allocation to product lines using the space (m2) occupied by each product line as activity driver. After the observation of the warehouse and interviews with the warehouse department personnel, it was found that, during the year, 96% of the total warehouse space was used for extra olive oil, and 4% of the space was used for pure olive oil.

Extra Virgin : 864 m2 (96%)
 Pure : 36 m2 (4%)
 Extra Virgin : 55,000 x 0,96 = 52,800
 Pure : 55,000 x 0,04 = 2,200

(f) Administrative Expenses cost pool includes the following resource consumption determined by direct tracing;

- General Management and Administration Costs
- Finance and Accounting Department Costs
- Human Resources Department Costs

Administrative expenses are allocated according to sales quantity.

Extra Virgin : 200,000 x 0,95 = 190,000
 Pure : 200,000 x 0,05 = 10,000

According to traditional method, all expenses related to marketing and selling were shown under just one heading and allocated on cost objects according to a volume-based driver, which was “quantity sold”. However in the income statement that was prepared according to ABC, we see four headings as Advertising and Sales Promotion, Direct Selling, Indirect Selling and Storage instead of only one and they were allocated on cost objects by using appropriate cost drivers. Examining the marketing and selling activities enables managers to see whether those activities consume more money than necessary or there is a need to increase or decrease these activities.

Using ABC may also enable managers to see that the products they are assessing profitable are not profitable in fact, and the products they are planning to drop are profitable and should be kept.

VII. CONCLUSION

Today, high competition and everyday changing needs and demands of customers force companies to

provide higher quality products at lower prices to the customers. High competition has increased the importance of making better strategic and tactical decisions. In order to stay competitive and make better decisions, companies need to have true cost information.

Additionally, cost structure of the products and services changed drastically based on competition and technological advancements. As part of this fact, examining the cost structure of different activities performed to produce different products and services, and allocating the costs of those activities over cost objects, or in other words, using ABC system are inevitable for many companies. By this way, in addition to have better cost information, it becomes possible to understand whether these activities are performed efficiently, or there are some unnecessary activities that may be eliminated.

It is also inevitable to focus the improvements in the marketing area and the increasing importance of marketing activities. In the future, if the past is accepted as the indicator of the future, it can be said that marketing costs will continue to constitute bigger parts of total costs. This makes it necessary to identify, examine and allocate the marketing costs more carefully.

The two points that became clear in the light of the literature survey can be summarised as

- (1) increasing marketing activities and consequently marketing costs,
- (2) the increasing importance of using ABC in order to have a better cost information.

Therefore it is strongly recommended that firms trying to survive and succeed in the competitive business environment apply ABC system to their marketing costs.

REFERENCES

- [1] Cooper, R. & Kaplan, R.S. (1988). Measure Costs Right: Make the Right Decisions. *Harvard Business Review*, September-October, 96-103.
- [2] Hanson, D.R. & Mowen, M.M. (1996). *Cost Management*. Ohio: South-Western College Pub.
- [3] Selnes, F. (1992). Analysing Marketing Profitability: Sales Are a Dangerous Cost driver. *European Journal of Marketing*, 2(26), 15-26.
- [4] Foster, G. & Gupta, M. (1994). Marketing, Cost Management And Management Accounting. *Journal of Management Accounting Research*, 6, Fall, 43-78.
- [5] Lere, J.C. (2000). Activity-based costing: a powerful tool for pricing. *Journal of Business & Industrial Marketing*, 15(1), 23-33.
- [6] Cokins, G. (1997). If Activity Based Costing Is The Answer. *IIE Solutions* 8, 29, 38-43.
- [7] Stevenson, T.H. & Barnes, F.C. (1996). Activity-Based Costing: Beyond the Smoke and the Mirrors. *Review of Business*, 18, 25-32.
- [8] Hicks, D.T. (1999). Yes, ABC is for Small Business, Too. *Journal of Accountancy*, 188(2), 41-44.
- [9] Matteson, K.N. (1994). Introducing Activity-Based Costing to the Construction Industry. *Journal of Construction Accounting and Taxation*, Winter, 15-25.
- [10] Cooper, R. (1994). Elements of Activity-Based Costing. *Emerging Practices in Cost Management - Activity Based Management*. Boston: Warren, Gorham & Lamont Pub.
- [11] Compton, T.R. (1996). Implementing Activity-Based Costing. *CPA Journal*, 66(3), 20-28.
- [12] Brand, M.T., Levine, S.P. & Gourdoux, J.R. (1999). Application of Activity Based Cost Management. *Professional Safety*, 44(1), 22-28.
- [13] Gunasekaran, A., Marri, H.B. & Yusuf, Y.Y. (1999). Application of activity-based costing: some case experiences. *Managerial Auditing Journal*, 14(6), 286-293.
- [14] Cokins, G. (1999). Learning To Love ABC. *Journal of Accountancy*, 188, 37-40.
- [15] Chutchian-Ferranti, J. (1999). Activity Based Costing, Financial and Business Concepts in Brief. *Computerworld*, 33(32), 54-55.
- [16] Börjesson, S. (1994). What Kind of Activity-based Information Does Your Purpose Require? Two Case Studies. *International Journal of Operations & Production Management*, 14(12), 79-99.
- [17] Lentini, F. (1993). Accounting for Marketing Success. *Journal of Accountancy*, 3(175), 44-48
- [18] Wilson, R.M.S., Gilligan, C. & Pearson, D. (1996). *Strategic Marketing Management*. Butterworth: Heinemann Pub. Co.
- [19] Lewis, R.J. (1991). Activity-Based Costing For Marketing. *Management Accounting*, Nov., 33-38.
- [20] Turney, P.B.B. (1990). Ten Myths About Implementing an Activity-Based Cost System. *Journal of Cost Management*, 4(1), 24-32.

Asuman ATİK (aatik@marmara.edu.tr) has got Ph.D. in Accounting from Marmara University. She is a research assistant at Marmara University Business Administration Department. Her research areas are financial reporting, accounting manipulations and activity based costing.