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Pricing Decisions in Educational Institutions: An Activity Based Approach

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Abstract

The number of private high schools is significantly growing due to recent increase in the demand for private schools. Therefore, it has been crucial for the administration of private schools to be able to gain competitive advantage and to make strategic decisions including pricing decisions. Private schools have to determine appropriate annual fees in an intensely competitive environment in order to attract new students or not to lose current students. Many factors such as customer demand, attitudes of competing educational institutions, public image of the school, political environment, legal regulations, country's economic conditions and other factors are effective in pricing decisions. An educational institution determines the education fee using either market based or cost based approaches. In this study we will focus on cost-plus pricing approach. A private school may determine the fee by adding a sufficient profit margin on the cost of resources consumed to provide educational services in cost plus pricing approach. Therefore in this approach accurately calculating the cost of services is significantly important. Activity based costing (ABC) method is a new approach in allocating indirect costs to cost objects and determining the unit costs by producing the most accurate data needed by the administrators and as an alternative to traditional costing methods. In this study we will implement the activity based costing method in a private school and determine the annual fees using activity based approach. In the study, we provide application of strategic pricing decisions in an example of a Turkish private high school.

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1. Introduction

The intense competition in private education sector in Turkey forces private high schools to seek ways to provide high quality service with the lowest cost. The main goal of management is to increase to invest in resources in most efficient ways and to reduce the costs. School administrators and owners need to have more detailed and more correct cost information to manage the cost better. The allocation of the cost to services has a critical importance in decision making process of the administrators of schools. Important decisions such as resource allocations, investment decisions, adding or dropping new units, and finally pricing decisions are all based on cost of the services. In order to make right decisions and to achieve the strategic goals of the schools, schools administrations must use the modern techniques in cost allocation. It has been crucially significant for administrators of schools to reach the most accurate cost data in the most proper way. Activity based costing approach provides useful cost information for the administrators in their decisions.

In this study, we will provide some implications of activity based pricing for private school in Turkey. In this purpose first we will discuss about the costing and pricing concepts, then we implement the activity based costing method in a private school and finally we investigate how to determine the annual fees using activity based approach. In the study, we provide application of strategic pricing decisions in an example of a Turkish private high school.

2. Pricing Decisions

Pricing is one of the most powerful tools a manager can use to transform unprofitable customers into profitable ones (Atkinson, Kaplan, Matsumura & Young, 2012: 250). Pricing services provided by an educational institution is the process of determining the value of sales that the costumers are willing to pay. Price of services determines the amount of profits after setting the costs of services. Pricing in short run and long run may differ in some aspects. Long run pricing decisions is a strategic decision designed to build long-run relationships with customers based on stable and predictable prices. Long-run pricing can be set to satisfy the desired rate of return while the short run pricing is decided under the current conditions which most items are irrelevant in short run (Horngren, Datar & Rajan, 2012: 456-457).

In general, managers determine prices considering factors such as customers, market, rivals, costs, timing, legal and political factors, and image related issues (Hilton, Milton, & Selto, 2008: 533). These factors influencing the pricing decision are also affecting the private schools. Education fees may be affected by some factors such as the city where the school established, other private schools in the same region, general economic conditions, school image, expectations of the parents, service coverage, costs such as personnel costs, utility expenses, marketing expenses, depreciation costs of assets, financial costs, etc.

In a free market, the price is the main factor to determine the effects of competition. The price is also important in determining the amount of demand and profitability margins. Even if a school is owned by a person or a foundation, the organization must make a profit to survive. Businesses require a rate of return to meet the cost of the serviced provided. Under normal circumstances, executives determines highest price for a sufficient profit margin after the costs, but in a competitive environment they do not have that power in their hands.

Two basic approaches of pricing are the market based pricing and cost based pricing (Horngren, Datar & Rajan, 2012: 459-460). In the market based pricing, prices are determined on the customers' expectations and the competitors' reactions. Based on market based prices, managers must control the cost of services in order to achieve the target return on investment. Educational institutions require high amount of capital investments, so to recover these investment managers must adequately place the schools' position in the market and offer a reasonable price to compete with the similar institutions. In the cost based approach, first the organization accumulates cost of services and determines the cost to recoup the costs and to achieve the target return on investments.

In market based pricing the school first determines the target price (annual fee). Target annual fee is estimated price for the educational services that the potential customers (parents) are willing to pay. After determining the target fee the executives drive a target cost by subtracting target profit from the target fee. Target cost covers all costs including variable and fixed costs (Horngren, Datar & Rajan, 2012: 461-462). Target costing may help managers to reduce the costs of services. Target costing emphasizes on planning and design stage and encompassing the entire life of the product. In order to achieve target cost making the necessary cost improvements through value engineering methods is the most difficult part of this business process (Coskun, 2003).

In cost based pricing approach, also called cost-plus pricing, managers determine the prospective selling price by adding a markup component to the cost of services. Cost-plus pricing can be used in the markets where the institution can set the prices of the services (Atkinson, Kaplan, Matsumura & Young, 2012: 87). Managers do not have to use a rigid markup component it may vary depending on the behavior of rivals and customers (Horngren, Datar & Rajan, 2012: 467). Based cost in cost plus pricing approach may be full cost, cost of services, or only variable costs.

Activity based pricing is a method uses the cost assigned to services by using the activity based costing approach. Activity based pricing establishes base pricing options for the institution to provide customers for any special services they requested (Atkinson, Kaplan, Matsumura & Young, 2012: 250). In the following part we will explain the activity based costing to make the activity based pricing more understandable.

3. Activity Based Costing in Educational Institutions

Allocation of cost in service type businesses sometimes become more complicated than manufacturing or merchandising businesses. Since their output is not a physical one, service businesses more carefully define the cost objects and allocate cost in a proper way. Activity based costing (ABC) approach is a new method of cost allocation that assigns indirect costs to services using the activities. Using the ABC method unit cost of students in an educational institution can be computed more accurately compared to the traditional cost allocation approaches (Yilmaz and Coskun, 2012: 280).

ABC method provides data on cost factors, activities, resources, performance measurement, customer profitability, distribution chains, merchandisers, brands, and on other fields that directly affect the profitability of an enterprise. ABC method relies on processes, activities, and then products, services, and customers for resource costing so that the costing can be calculated more reliably (Cooper & Kaplan, 1988; Eker, 2002; Kaplan & Atkinson, 1998).

ABC methods consists of two phases: the first one is to accumulate total cost of the each activity and computing the cost of activity cost pools, and to deliver these accumulated costs to cost objects such as educational services through appropriate cost allocation base (Morse, Davis & Hartgraves, 2003: 185; Hilton, 1997: 196-197).

Originally designed to be used for business and manufacturing enterprises that produce goods used by the service-producing businesses because of the benefits of activity-based costing method was introduced by seeing the wide acceptance (Cooper and Kaplan, 1991: 372).

4. Allocation of Costs through the Usage of Activity Based Costing in Educational Institutions

In this part of the study we will summarize an implementation of activity based costing in a high school in Ankara, Turkey.

Firstly the activities in the school are defined. There are 16 activities: Activity-1 New student enrollment, Activity-2 Former student enrollment, Activity-3 Teachers Training, Activity-4 Students Orientation, Activity-5 Educational Activities, Activity-6 Olympic Studies, Activity-7 Summer School, Activity-8 Students' Clubs,

Activity-9 Parent-Teacher Meetings, Activity-10 Certification Programs for Students, Activity-11 Health Care Services, Activity-12 Cooking and Transportation Services, Activity-13 Students Counsels, Activity-14 Administration, Accounting, Information, Cleaning, Transportation and Security Services, Activity-15 Graduation, Activity -16 Maintenance.

Secondly, indirect costs are assigned to each activity cost pool. In the annual budget of the school total cost accumulated as 4,745,250 TL, including materials and supplies expenses, salary expenses, subcontractor expenses, education expenses, outsourcing utilities and services, several expenses, taxes and other fees, depreciation and amortization. Budgeted cost of the period of the study is summarized in Table 1.

Table 1. Budget for Cost of Services

Cost of Services	Amounts of Expense (in TL)
1- Materials and Supplies Expenses	12,673
2- Salary Expenses	2,530,854
3- Subcontractor Expenses	1,359,089
4- Other Education Expenses	393,454
5- Outsourcing Utilities And Services	319,496
6- Several Expenses	35,298
7- Taxes And Other Fees	2,865
8- Depreciation And Amortization	91,521
TOTAL EXPENSES	4,745,250

Later, in the third stage, cost allocation base for each activity cost pool is determined. List of cost allocation bases for the activity cost pools is given in Table 2. Cost allocation bases carefully selected based on cause and effect relationship in order to reflect the actual consumption of the resources used by the cost objects during the period.

Table 2. Education Activity Centers and Cost Drivers

Education Activity Centers	Cost Drivers
Activity -1 New student enrollment	The number of new student enrolled
Activity -2 Former student enrollment	The number of former student enrolled
Activity-3 Teachers Training	The number of teachers
Activity -4 Students Orientation	The number of 9th graders
Activity -5 Educational Activities	The number of students in total
Activity -6 Olympic Studies	The number of Olympic Studies participants
Activity -7 Summer School	The number of summer school attendees
Activity -8 Students' Clubs	The number of Students' club participants
Activity -9 Parent-Teacher Meetings	The number of Parent-Teacher meetings
Activity -10 Certification Programs for Students	The number of certification program attendees
Activity -11 Health Care Services	The number of students in total
Activity -12 Catering and Transportation Services	The number of students in total
Activity -13 Students Counsels	The number of counseling activities for each grade
Activity -14 Administration, Accounting, Information, Cleaning, Transportation and Security Services	The number of Staff x Time *
Activity -15 Graduation	The number of graduates
Activity -16 Maintenance	Used Space x Time *

* This activity expenses II. distributed to other activities of the educational institution distributions.

In the fourth stage of the cost allocation, among the activities, Activity-16 Maintenance and Activity-14 Administration, Accounting, Information, Cleaning, Transportation and Security Services are defined as “secondary” activities. Before allocating the activity cost to cost objects, cost of these secondary activities allocated to other 14 activities.

In the fifth stage, costs of the 14 primary activities are allocated to cost objects. In this stage total cost of the activities accumulated from first level and second level allocation are allocated. Allocation completed by using the cost allocation rates. Cost allocation rates are calculated by dividing the total cost of each activity to the total quantity of the cost allocation base of the activity. For example cost allocation rate for the activity 1- New student enrollment is 235.01 TL per new enrolled student. Grades in high school are selected as the cost object in allocation. There are four grades in the high school: 9th grade, 10th grade, 11th grade and 12th grade. For each grade, allocated cost of each activity is accumulated. Finally the unit cost of students is computed by dividing the total cost of the grades to the total number of students in each grade. Allocation of activity costs to cost objects and calculating the unit cost of students are summarized in Table 3. Cost per unit student of 9th grade, 10th grade, 11th grade and 12th grade are 7,956 TL, 8,410 TL, 8,255 TL and 7,788 TL respectively.

If the school do not implement activity based costing, unit cost may be calculated just dividing total cost of the school to the total number or students regardless of which grade the student is. This is traditional cost allocation approach and it ignores the differences in resource consumption differences between the grades. In that case unit cost of the student would be 8,112 TL per student in all grades. Unit cost is calculated by dividing the total cost of 4,745,250 TL to the total number of students of 585.

Comparison of traditional costing system and the activity based costing is given in Table 4. As it's seen in the table in traditional costing 9th grade and 12th grade students are overcosted, while 10th grade and 11th grade students are undercosted comparing the activity based costing.

5. Implementation of Activity Based Pricing

The school can implement activity based pricing using the activity based cost allocation information. Assume that the school targeted a 10% markup on activity based cost of a student. While the annual fee for each student would be 8,923 TL/student in traditional approach, the annual fees of the grades will vary in activity based approach. The annual fees in 9th grade, 10th grade, 11th grade and 12th grade would be 8,751 TL/student, 9,251 TL/student, 9,080 TL/student, and 8,556 TL/student respectively. The comparison of cost plus pricing in two approaches is given in Table 5.

Markup percentage is varied on the amount of investment to the school, cost of capital, alternative investment opportunities, etc. So that the markup in this case may be higher or lower than 10% depending on the factors mentioned.

School administration may adopt the activity based annual fee to each grade or they may slightly change depending on the behavior of the competitors and customers.

In all circumstances, the management aware about the profitability of the students in each grade by getting accurate cost information from ABC approach. The administration may make further decisions using these cost information. They may determine how much discount they can make in some cases. For example if the annual fee is set up as equally for each grade, management may apply discount to 9th and 12th grades, but do not apply any discount to 10th and 11th grades as a requirement.

It should be in consideration that there are still many factors affects the pricing such as customer demand, attitudes of competing educational institutions, public image of the school, political environment, legal regulations, country's economic conditions and other factors.

Table 3. Allocating Costs using ABC

Activity Centers	Cost Allocation Rates	9 th Grade Costs		10 th Grade Costs		11 th Grade Costs		12 th Grade Costs	
		Allocation Key Criteria x Rate	Activity Costs	Allocation Key Criteria x Rate	Activity Costs	Allocation Key Criteria x Rate	Activity Costs	Allocation Key Criteria x Rate	Activity Costs
Activity -1 New student enrollment	235.01 TL/ New student	180 x 235.01	42,302 TL	45 x 235.01	10,575 TL	20 x 235.01	4,700 TL	10 x 235.01	2,350 TL
Activity -2 Former student enrollment	163.50 TL/ Former student	-	-	115 x 163.50	18,802 TL	110 x 163.50	17,985 TL	105 x 163.50	17,167 TL
Activity-3 Teachers Training	2,344.87 TL/ teachers	15 x 2,344.87	35,173 TL	19 x 2,344.87	44,552 TL	13 x 2,344.87	30,483 TL	12 x 2,344.87	28,138 TL
Activity -4 Students Orientation	433.49 TL/ 9 th grader	180 x 433.49	78,028 TL	-	-	-	-	-	-
Activity -5 Educational Activities	4,101.33 TL/ student	180 x 4,101.33	738,343 TL	160 x 4,101.33	656,305 TL	130 x 4,101.33	533,248 TL	115 x 4,101.33	471,719 TL
Activity -6 Olympic Studies	5,154.66 TL/ Olympic Studies attendee	-	-	20 x 5,154.66	103,093 TL	10 x 5,154.66	51,546 TL	-	-
Activity -7 Summer School	323.15 TL/ summer school attendee	-	-	-	-	130x 323.15	42,009 TL	115 x 323.15	37,162 TL
Activity -8 Students' Clubs	271.16 TL/ Students' club attendee	85 x 271.16	23,049 TL	160 x 271.16	43,386 TL	90 x 271.16	24,404 TL	-	-
Activity -9 Parent-Teacher Meetings	4,060.33 TL/ Parent-Teacher meeting	6 x 4,060.33	24,362 TL	8 x 4,060.33	32,482 TL	8 x 4,060.33	32,482 TL	4 x 4,060.33	16,241 TL
Activity -10 Certification Programs for Students	140.60 TL/ certification program attendee	180 x 140.60	25,308 TL	160 x 140.60	22,496 TL	-	-	-	-
Activity -11 Health Care Services	79.23 TL/ student	180 x 79.23	14,261 TL	160 x 79.23	12,676 TL	130 x 79.23	10,299 TL	115 x 79.23	9,111 TL
Activity -12 Catering and Transportation Services	2,306.58 TL/ student	180 x 2,306.58	415,184 TL	160 x 2,306.58	369,052 TL	130 x 2,306.58	299,855 TL	115 x 2,306.58	265,256 TL
Activity -13 Students Counsels	200.77 TL/ student	180 x 200.77	36,138 TL	160 x 200.77	32,123 TL	130 x 200.77	26,100 TL	115 x 200.77	23,088 TL
Activity -15 Graduation	210.59 TL/ student	-	-	-	-	-	-	115x 210.59	24,217 TL
Total cost		1,432,148 TL		1,345,542 TL		1,073,111 TL		894,449 TL	
Unit Cost Per Student (Total Cost/The number of students in the grade)		1,432,148 TL /180= 7,956 TL		1,345,542 TL /160= 8,410 TL		1,073,111 TL /130= 8,255 TL		894,449 TL /115= 7,778 TL	

Table 4. Unit Costs using ABC and Traditional Costing

	Cost Objects			
	9th Grade Costs	10th Grade Costs	11th Grade Costs	12th Grade Costs
Traditional Costing Method	8.112 TL/student	8.112 TL/student	8.112 TL/student	8.112 TL/student
Activity Based Costing Method	7.956 TL/student	8.410 TL/student	8.255 TL/student	7.778 TL/student
The difference between two approaches	156 TL/student	(298) TL/student	(143) TL/ student	334 TL/student

Table 5. Pricing using ABC and Traditional Costing

	Cost Objects			
	9th Grade Costs	10th Grade Costs	11th Grade Costs	12th Grade Costs
Fee per student using traditional costing method (The fees applied in all grades in high school are the same: traditional cost + 10% markup)	8.923 TL/student	8.923 TL/student	8.923 TL/student	8.923 TL/student
Activity based fee per student (activity based cost + 10% markup)	8.751 TL/student	9.251 TL/student	9.080 TL/student	8.556 TL/student
The difference between two approaches	172 TL/student	(328) TL/ student	(157) TL/student	367 TL/student

Conclusion

In this study we implemented the activity based costing method in a private school in Turkey and determined the annual fees using activity based approach. We found out that there are differences among the grades of the high school in terms of resource consumption. So that we refer different fees could be applied to different grade students. Even the fix annual fee is set in all grades, activity based approach help the managers to calculate the profitability of each student. Activity based data also provide support in other kind of decisions such as resource allocations, investment decisions, adding or dropping new units, and finally pricing decisions are all based on cost of the services. We found out if the schools evaluate their cost more precisely by implementing the activity based approach, there would be beneficial for the schools.

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