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Revenue Management in Self Financing Education Service.

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ABSTRACT: Revenue management is a strategic approach to maximization of revenue under variable conditions. The objective of revenue management is to expand the market and thereby increase the revenue per unit of available capacity. Revenue management is all about offering the right product to the right customer at the right time and for the right price. Revenue management is applicable to any industry with certain characteristics like fixed capacity, high proportion of fixed costs, segmentation of customers, perishability of product/service, time variable demand, etc. Consumer behavior and demand forecasting are major ingredients of revenue management. Students are customers in educational service industry. REVENUE MANAGEMENT IN SELF FINANCINGEDUCATIONAL SERVICE – is intended to understand a student needs to pay for a seat in an Institution varies depending upon the point in time at which the student makes a purchase decision and the availability of seats. Revenue management can be successful only if it integrates to all the different functions of an educational institution and is also adequately backed up by a good information system.

I. INTRODUCTION

In the late 1970s the airline industry was deregulated which subsequently led to severe competition. In order to sustain and survive in the business, the airline companies adopted several methods and techniques, and one of them was the yield management. Yield management was used as a tactical approach to increasing competitive advantage,thereby maximizing the revenues. Yield management in airline industry was concerned with selling a seat to the right customer at the right price and at the right time so as to maximize the yield. The aim of the organizations was to fill at least a minimum number of seats to cover their fixed operating expenses; and once the fixed costs are covered, the remaining seats could then be sold at higher rates to maximize their revenue. In other words, the adoption of yield management led to a situation wherein the airlines could sell the seats at different fares to the passengers on board in the same aircraft. For example, they would offer early bird bookings that charge lower fares and charge higher tariffs for late bookings. The yield management subsequently became a precursor to revenue management. Yield management is narrow in its focus and thusit is more tactical than strategic. For example, selling to the right customer at the right price is the focus of yield management. Yield management mainly centers on the techniques of inventory control. In today's fastpaced and web-centric world, yield management cannot sustain the business. It is this realization that paved the way for revenue management. Revenue management is a strategic approach unlike yield management that goes beyond balancing demand and supply. The process of revenue management involves segmenting markets, forecasting demand, and optimizing prices. Revenue management is thusdefined as a set of techniques that help an organization sell the right product to the right customer, at the right time and for the right price. It is a long-term strategy to maximize the revenues of a product. Product is a broad term used to include goods, services, or ideas. Any organization would prefer to sell its products at the highest price possible. But in real terms it rarely happens. If some products remain unsold, the organization will lose revenue. Conversely, if the organization sells its products at a low price, the revenue that could have been obtained from higher price will be lost. Revenue management attempts to trade-off between the two situations so as to maximize the total revenue. The main objective of revenue management is to expand the market for the service and thereby increase the revenue per unit of available capacity. The starting point for revenue management is the systematic effort to understand the consumer. student needs to pay for a seat in an educational institution varies depending upon the point in time at which the student makes a purchase decision and the availability of seats. Revenue management can be successful only if it integrates to all the different functions of an educational institution and is also adequately backed up by a good information system.

Strategic Role of Consumer Behaviour

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Predicting consumer behavior is the core of revenue management. Revenue management essentially involves the study of consumers by their interests, activities, opinions, preferences and values. There are several influences on consumer behavior. Factors like age, gender, education, opinions, beliefs, interests, preferences, etc., have a very significant influence, either individually or collectively, on consumer behavior. Consumers have their own perceptions of the value and quality of the product. The perceptions may be based on real world experience, or stimuli derived from a broad range of messages from individuals, advertising, etc. Social media play their own role in this regard. The perceived quality of the product in relation to the price is the expected value of the product. The value can thus be the amount of perceived benefit minus the price. Value would become greater when price is lower than the perceived benefit. When the price is higher, the consumer seeks more value. Thus, understanding the price points in relation to the perceived quality is very important in revenue Management.

Characteristics of Revenue Management.

Having originated in airline industry, revenue management has become a strategic process, system, or approach in many service industries such as hotels, restaurants, car rental, parking lots, spas, apartment housing, movie multiplexes, golf, healthcare, broadcasting, freight transportation, etc. Revenue management strategy can be used by any type of business that has the following characteristics:

1. Fixed number of products available for sale or relatively fixed capacity;
2. Perishability of the product (after a certain date or amount of time the product becomes useless); 3. Customer segmentation (customers are willing to pay different prices for the same product); 4.Predictability (demand for the product can be predicted);
5. High proportion of fixed costs in total costs;
6. Flexibility in pricing;
7. Time variable demand (definite peaks and valleys in demand, which can be predicted but not with high degree of certainty);
8. Advance sales. Educational Services – ADistinctive Industry Educational services have become an integral part of human development. Education is defined as a systematic process through which a person acquires knowledge, skills, experience and right attitude. In the words of Rabindranath Tagore, "education aims at developing the individual personality as well as social characters which enables him to live as a worthy being". Although different people defined education in different words, the purpose and aims of education are common. Modern formal education culminates intoawarding a certificate of having fulfilled the requirements of a course or program. There are different types of institutions imparting education in different disciplines or subjects to people of different age groups and of different aspiration levels. In tune with the economic reforms, the education system in the country has undergone structural changes over the last three decades. The private sector has become a dominant player in education delivery at all levels of education, from KG to PG. Although the educational institutions in the private sector are governed by rules, regulations and guidelines framed and administered by the regulatory bodies such as UGC, AICTE, NCTE, and other central and state bodies, they enjoy adequate freedom and discretion in the allotment of seats. Most often educational institutions find that the demand for their seats falls lower than the supply. Further, they are faced with complex issues such as who is the target customer (student), when is the ideal time to sell the seats, how much is the price per seat, and what is the best route to sell the available seats. Some educational institutions arbitrarily keep seats for later admissions at higher fee. But they run the risk of having some seats unfilled by the last day of admissions, resulting in loss of revenue from those seats. At the same time, it makes no sense to offer discounts to students who are willing to pay full fee. It is in this backdrop the relevance of revenue management is explored. Revenue management aims at maximizing the amount of revenue the institution can collect from each transaction without diminishing its image or value. Relevance of Revenue Management The revenue management is applicable to all organizations that fulfill certain characteristics. The relevance of these characteristics in educational service industry is examined as below:

1. Fixed capacity in terms of seats: The educational institutions cangive admissions to the students as per the sanctioned intake. The regulatory or affiliating bodiesprovide sanction of a certain number of seats for the ensuing academic year(s), depending on the availability of infrastructure and learning resources. The changes (increase or decrease) in the sanctioned intake can take place only after some time lag and at the discretion of the sanctioning authority. In the short run, the educational institutions cannot vary their capacity in terms of seats according to the demand.

2. Perishability: The seats that are sanctioned for an academic year can be filled only during a particular period of time in the academic year. Any unfilled seats in an academic year cannot be inventoried or carried over to the next academic year(s). The unfilled seats will automatically get lapsed after the period of admissions and thus become perished forever. In other words, the availability of seats is time-constrained. As the unfilled seats do not generate any revenue, the educational institutions make all out efforts to fill as many seats as possible. If all the seats are full and a student comes for a seat offering a very high fee, the institute cannot create another seat in the short-run.

3. Segmentation of Admission Seekers: Segmentation refers to subdividing the students into groups with similar behavior. Educational institutions tend to give admissions to the students as per the admission criteria approved by the regulatory agency. Having fulfilled the admission criteria, the students may seek admission at different points in time, but before the last date of admissions. The students might have varying degrees of price sensitivity. Accordingly, the students may be segmented on basis of how much they are sensitive to the price of a service. Based on their price sensitivity, the students may be segmented as perfectly elastic, relatively elastic, unit elastic, relatively inelastic, and perfectly inelastic. In other words, sensitivity to price varies among the market segments. The educational institutions can expand their market and increase their revenue potential by charging higher fee to those market segments which are price inelastic and lower fee (fee discount) to those market segments which are price elastic. Revenue management can work only in the environment in which the students are prepared to pay a variable fee for the same educational service as with airline seats. That is, each segment of students responds in a different way when faced with the same proposition. The purpose of segmentation is to study the net profitability of each segment and ensure that the sales and marketing effort will be on attracting the right students at the right time. The right segmentation may enable the educational institution to focus primarily on the segment which is highly profitable and on other segments in case of need, leaving off the unprofitable segment(s). The students who are price insensitive may tend to buy the seats late by paying even higher price. The right segmentation may lead to the right pricing that will minimize the risk of over pricing or under-pricing through dilution or cannibalization. Overpricing and under-pricing will have a significant impact on the revenue and operational efficiencies of the institution. In other words, the right segmentation will ultimately lead to improved efficiencies and enhanced profit opportunities.

4. Proportion of variable cost and fixed cost: The total cost in an educational institution can be classified into fixed costs and variable costs. The costs that remain unaffected by the number of seats filled are considered as fixed costs. They include salaries paid to faculty and staff, depreciation on infrastructure, electricity charges, rent, interest on loans, etc. As the institution has to maintain every facility irrespective of the number of seats filled during an academic year, the proportion of fixed costs is very high in educational institutions. The variable costs are the costs that change in proportion to the number of seats filled. For example, amount paid as commission to agents who bring admissions to an institution. In other words, the variable costs are very insignificant in educational institutions. In view of the variable cost being very low, it does not cost much more to sell an additional seat. In terms of cost, one more seat does not make much of a difference. In the long-run every cost is variable.

5. Expected Marginal Revenue: The educational institutions have relatively fixed capacity in terms of number of seats. An institution would tend to allocate its limited capacity among different market segments to maximize total expected revenue in the background of uncertain demand for the service. If a seat is allocated to a market segment with a price of Rs2 lakh and has a 0.60 probability of wanting it, then the expected revenue for the seat is Rs 1.2 lakh (Rs 2 lakh × 0.60). As the number of seats increases, of seats increases, the marginal expected revenue from each additional seat declines. With each additional seat that an institution offers for sale, the probability that it will be sold to a student goes down until a point where the probability of selling the additional unit is close to zero. In other words, with each additional seat being offered for sale, the pressure to discount it goes up.

6. Forecasting: Forecasting of demand is the essence of revenue management. The success of revenue management depends on the quality of the forecast. The demand for a service follows certain patterns or trends which can be extrapolated in order to estimate future demand. Forecasting of demand for each market segment is essential for revenue management. Since future is uncertain, forecasting of demand becomes a challenge.

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Broadly, there are two types of demand forecasting. They are time series analysis and econometric modeling. Time series analyses involve forecasting models that extrapolate past demand trends into the future without considering the underlying causative factors. On the other hand, econometric models are built to factor in the causal nature of the underlying factors of demand. The factor of demand elasticity is also built into the econometric models. These models aim at predicting the stochastic and dynamic arrival of students from different segments and determining the fee that should be quoted for different market segments in a given period to maximize the total revenue.

7. Allocation of Seats among Segments:

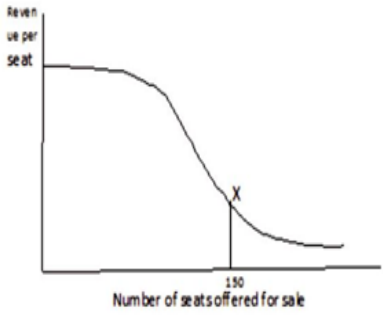

Fig. 1

Going back to the earlier example given in point 5, the seats may be reserved incrementally for students in the highest fee segment, one at a time, until the expected marginal revenue for the next seat, if reserved for a student in this segment, is equal to or less than the next lower fee. Suppose the full fee is Rs 2 lakh and discount fee is Rs 1.2 lakh. The institute can continue to reserve seats for the segment of Rs 2 lakh fee until the probability of selling one more seat to the students of this segment drops to 0.60. If this point is reached after reserving 20 seats for the students of this segment of Rs 2 lakh fee, the protection level for this segment is 20 seats. Suppose twenty seats are reserved for the segment of potential students with 0.60 probability of wanting it at a fee of Rs 2 lakh per seat. The institute would collect a total amount of Rs 24 lakh for the twenty seats at an average fee of Rs 1.2 lakh. Suppose a student offers Rs. 1 lakh in cash on the spot. There is a probability of 100% to get revenue of Rs 1 lakh per seat which is also the expected revenue. If the institute follows the strategy of 'bird in the hand', it would get Rs 20 lakh for twenty seats reserved for this segment. Is this offer acceptable to the institute? The answer is certainly 'no' because the expected revenue is less than that of the potential student 'in the bush'. If someone offers more than Rs 1.2 lakh, the institute can sell the seat on the spot. Therefore, the institute would never sell a seat for less than it expects to receive for it from another student. There is also another approach to the allocation of seats to different segments. As the number of seats offered for sale increases, the expected marginal revenue takes the form of a downward sloping curve (Fig. 1). An institution decides the least expected marginal revenue beyond which it does not want to offer the seats for sale. In the Fig. 1, the point 'X' is the least amount of expected marginal revenue and the corresponding number of seats offered for sale is, say, 150 out of 200 seats of total capacity. The institution starts offering a seat at a discount which gives 'X' amount of expected marginal revenue. That is the lowest acceptable fee. With each time a seat is sold, the number of available seats comes down by one. Alongside, the discount to be offered on a seat shrinks, leading to increase in expected marginal revenue. At some point, the institution would stop selling the units at the discount rate. In other words, the institution would sell the remaining seats at full fee only once the point of no more discounts is reached. Graphically speaking, the institution starts at point 'X' on the expected marginal revenue curve and moves up to the left. If the demand forecast reveals that the demand is lower than usual, it may be appropriate to open a low fee segment to stimulate demand.

8. Advance Sales: The seats can also be sold in advance. It is a usual practice that the students block their seats by paying a certain amount. The amount to be paid by the students depends on the reputation of the institute and other factors. For example, a student expresses his desire to buy a seat in advance but at a low fee. Should the institute accept the offer or wait to see if higher-paying student will appear ? The answers for such type of questions can be found in revenue management. In case of advance booking, the institutions are faced with the problem of 'no-shows'; it means that the students who have booked the seats do not show up to pay the agreed fee amount for the seat. Some organizations allow their capacity overbooked to set off 'no-shows', but at the cost of their reputation.

9. Time variable demand: The demand for seats tends to fluctuate from month to month and year to year. In other words, the seats in an educational institution will have time variable demand. It means that there are definite patterns in demand, which can be predicted but not with a high degree

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of certainty. Revenue management can reduce demand fluctuations by increasing the sales during slow times (of course, at a reduced fee) and by increasing revenues during better times (at an increased fee). If an educational institution knows when demand is high and low, it will be better able to plan for them. 10. Pricing: Pricing is a critical factor in revenue management. As demand changes over time, the organizations should follow a flexible pricing strategy to establish the appropriate price point so as to maximize the revenue. That is, there must be considerable flexibility to adjust prices quickly to reflect variations in the demand and supply. The educational institutions can adopt variable pricing strategy to maximize their revenues. The pricing strategies can be categorized as dynamic pricing strategy or differential pricing strategy. Dynamic pricing strategy refers to changing prices over time without necessarily distinguishing between the segments of students. On the other hand, differential pricing strategy works towards charging different customers different prices according to their price sensitivity. Educational institutions are in a dynamic pricing environment where prices change regularly based on demand forecast and willingness-to pay. Willingness-to-pay depends on the value that a student places upon the offering. While applying price discrimination, the educational institution should establish price fences so that students with higher willingness-to-pay do not seek admission at lower fee. Rate fences specify the conditions under which the specific prices apply. In order to set realistic fee structure across market segments, an institution can prepare a price value matrix that enables ranking the comparative value of its services against its competitors. The first step in the price value matrix is to make competitor analysis as illustrated below.

A Model of Competitor Analysis:

	Strengths	Weakness
XYZ Institute	• Sprawling Campus with 50 acres sounded by Natural Scenic Beauty • Accessible by road rail and Air • Hi Speed Wi fi Connectivity • Modern Amenities • 20% faculty has Industry experience • Good Placement Records • Separate hostels for girls and boys • Opportunity to do value added programmes. • Case study method of learning • Institute offering 10 programs spreading Different disciplines. • Highly experienced management.	• Research based academics is minimal • Class room facility needs to be modernised. • High Turnover of Teachers • In adequate supporting staff • Computer labs need to be upgraded • Reputed companies yet to visit for campus placements • Library needs- up Gradation.

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Competitor 1	• Extensive use of ICT in teaching-learning. • Highly qualified faculty with average experience of not less than 10 years. • High rise buildings. • Curriculum flexibility. • Tie-up with foreign institutions. • 24/7 access to library resources. • Computerized administrative units. • Brand image	• A small campus of five Acres only. • No hostel facility to male students • No accessibility by air. • Inadequate infrastructure. • Inexperienced Management. • Speed of wi-fi is slow.
XYZ Institute	**Opportunities** Rapid industrialization of the city with a significant entry of MNCs. •Increasing flow of foreign students to India. •Govt. policy to encourage and support Private educational institutions.	**Threats** Increasing competition with the entry of foreign institutions. • Bureaucratic approach of affiliating university. • Wide variations in knowledge of students at the entry level.

Once the competitor analysis is made, the institute can prepare a graph of the price-quality matrix with four quadrants and then place each of the competitor-institute along with itself in respective positions.

The four quadrants are: higher fee, lower quality; higher fee, higher quality; lower fee, lower quality; and lower fee, higher quality. This kind of analysis, apart from other things, enables the institute to determine realistic price points.

II. CONCLUSION

Revenue management is all about offering the right product to the right customer at the right time for the right price. Revenue management is not always to maximize the revenue alone; it is to achieve maximum revenue with highest operating profit. So

So the costs of operation need to be factored into the process. It is in this background the adjective 'right' is to be understood. For example, all admission seekers are not equally profitable for an Institute.. The requirements of some students are too high to meet profitably, while some others are unwilling to pay the fee good enough in profitable terms. Therefore, the right customer is one whom the institute can satisfactorily and profitably serve. The right product (service) is the one that delivers value to the customers by meeting their expectations. The right product should reflect the customer's willingness to pay and at the same time it must be profitable to the organization. The price is the vital aspect of revenue management. The situation is that the students would like to pay as little as possible, while the institutions would prefer to charge as much as possible. The Hotel Schools should change the level of fee over time to attract the right students and generate high revenues. When

students in different market segments are ready to pay different prices for the same service, the institutions can apply price discrimination and establish price fences so that the students with higher willingness-to-pay do not purchase at lower rates. If the fee charged by an institution does not reflect the value received from the services, then the relationship between the students and the institute will have a beating. Timing is also important in revenue management. The same offering may be perceived differently only on the basis of when it is made. For example, an offering made in the month of December might be interpreted differently from the same offering made in the month of May (just before concluding the admissions). The right time would depend on the booking patterns of the students in different market segments. If the target segment usually seeks admissions just three weeks before the concluding date of admissions, then the right time to make offers might be a month before closing date of admissions.

Revenue management in self-financing Institutions can be successful only if it integrates to all the different functions of an educational institution and is adequately backed up by a good information system. The information system should be designed as to collect data, process data and disseminate information regarding macro-economic environment, profile of students seeking admissions, booking patterns, competitor strengths and weaknesses, demand patterns by market segment, price sensitivity of different market segments, value perceptions, etc. Demand forecasting is an integral part of revenue management. As the demand can change over time,

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