



Revenue Management

On a flight to Goa, two passengers were discussing about the price they paid for the flight and hotel. They were amazed at the price difference as one of them was charged 6800 INR for a round trip airfare and 30000 INR for a hotel and the other 4600 INR for the airfare and just 18000 INR for the same hotel. The first passenger had booked his flight and hotel only one day in advance while the other a month in advance. *How can the same airline or hotel manage profit by charging so discriminately?* The answer to this amusing question is “Revenue Management” .

Revenue Management, also known as yield management, is a process for capacity-constrained industries to maximize profitability by allocating the right inventory to the right customers at the right price. RM concepts are pertinent to virtually everything that is sellable in advance, transient, capacity constrained, allows discrimination among market segments, has inconsistent demand patterns and low marginal servicing cost.

Airline Industries, Hotels, Television Broadcasters, Theaters, Car Rental Agencies, Hospitals, Telecommunications are only some of the industries where RM techniques have been successfully utilized. Revenue gains of 2-8% due to RM are frequently reported; most of this goes to the bottom line leading to profit increase of 50-100%.

Know Your Customers

RM works on the fundamental concepts of market segmentation and price discrimination. Purchase regulations and refund requirements help to segment the market. For example, higher fares may be fully or partially refundable and purchasable at all times whereas lower fares are non-refundable and must be purchased a number of days in advance. Price-sensitive customers are willing to put up with the lower flexibility & have lesser assessment for service while those who have higher assessment for the service are willing to pay more. In airlines and hotels, business travelers constitute a price-insensitive market segment and leisure travelers form the price-sensitive market segment.

Price discrimination helps industries to achieve objective of increasing revenues in two ways. By charging premium prices to the less price sensitive market segments, the industry can extract greater revenue; at the same time charging discounted prices to the price sensitive market segment results in increased consumption of the service that offsets the price reduction.



Related Links

<http://bear.cba.ufl.edu/shugan/profile/SSPYM.pdf>

<http://pubsonline.informs.org/feature/Edelman/1526-551X-2002-32-01-0047R.pdf>

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We provide decision-making solutions to improve operational efficiency and business responsiveness. Our consulting services employ our strengths in industry knowledge, conceptual rigor, and information technologies. Developed using concepts from decision theory; our solutions use robust optimization, simulation, and statistical engines adapted to our client's focus areas.

DecisionCraft Services

Business Diagnostics

We analyze business processes and transactional data to identify underlying patterns, unravel hidden relationships and recommend areas for improvement that can improve ROI and reduce costs.

Predictive Analytics

We use historical data intelligently to develop a view of future market trends and help our clients focus on the right audiences thereby developing their competitive edge.

Occasionally, a time element is added to the pricing of a service. Demand is managed by elevating prices during intensive demand and offering discounts during moderate demand. Types of discount vary among industries. In airlines and hotels, discounts are offered for early bookings, including typically group bookings, as well as travel during off-peak days and hours. In telecommunication industries, rates are reduced for long distance calls on nights and weekends.

Demand Forecasting

After segmenting the market and defining the price structure for each segment, other essentials of RM come in to play. Demand forecasting is first of these essentials. Demand is forecasted with the help of historical data of demand patterns for the particular service. Usually, demand exhibits definite patterns such as trends and cycles. For example demand may vary by time of day, day of week or season of year. These demand patterns can be used to predict the potential future demand in each market segment.

In airline, car rental and hotel industry, little information is available for millions of customers. Hence they use statistical techniques for demand forecasting. Media broadcasters on the other hand have detailed knowledge of their customers since they usually number in the hundreds. Therefore, they estimate the demand for commercial spots during various shows by monitoring historical buying patterns of customers.

Inventory Allocation

The next step is to allocate inventory amongst the market segments. As stated earlier, industries such as airlines, hotels, car rental companies and broadcasters sell their inventory at premium and concession prices. Typically price-sensitive customers book

early while the demand for premium inventory arrives late. Therefore industries, which practice RM, need to set a booking limit to restrict maximum amount of inventory to be sold at concession price. If this limit is set too high, the industry may suffer an opportunity loss by being forced to

turn away some of their premium customers; if it is too low, some inventory may remain unsold.

One way of defining the booking limit is based on the expected marginal revenue generated from selling an additional unit of inventory. Industries define floor price, which is the lowest adequate price for next additional unit to be sold. This floor price

Forecasting

We use advanced time-series and regression techniques for forecasting behavior of critical business variables that allows our clients to plan for their resources intelligently.



Fig.1 CONCEPTS OF RM

is derived by using value of the expected marginal revenue of the last unit of inventory. The sale is acceptable as long as requested price is above expected marginal revenue floor price.

Overbooking

Another important element of the revenue management is the use of overbooking when there is a chance that a customer may not appear. Capacity-constrained industries overbook to redeem for customer cancellations and no-shows. For this reason, it is obligatory to forecast cancellations and no-shows. Insufficient overbooking results in unsold inventory; on the other hand excessive overbooking results in penalty cost which includes both the financial remuneration given to bumped customers and the prospective loss of future revenue due to customer dissatisfaction. The optimal level of overbooking is where the anticipated cost of overbooking for the next unit to be sold is equal to the expected marginal revenue from that unit.

Conclusion

Revenue management is a process that can significantly increase revenues of capacity-constrained firms through better inventory management and pricing. By using RM concepts, these firms can protect premium inventory for sale at higher prices, stimulate market growth by offering discounts and minimize wastage of perishable inventory.



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