

# Commercial aviation

[Engineering](#), [Aviation](#)



## **Introduction**

Yield management can be described as the collection of processes, techniques used by airlines to make its customers pay as much as possible for their seats, while maintaining load-factor., (Alderighi et al, 2012). Mittal et al (2013) added that it has become near impossible to sustain a business without affective yield management, in particular when capacity is constrained. It was also noted that increased competition through low-cost carriers has created an environment where yield management must be monitored to ensure carriers can compete effectively on price, (Vila, 2011). This assignment will consider how airlines use yield management as a tool to meet management strategies, providing examples to support research. The strategies that emerge from this use will also be considered along with their effectiveness.

The main strategy of the airline is to maximize revenue from its available inventory of stock (its seats). The strategy is to sell the right seats to the right people, (Kimes, 1989). The airline must find a trade-off between discounting its seat to increase sales and fill its inventory, while selling full-fare tickets to generate profits its operations, (Vila, 2011).

### Airlines Fixed Capacity

The reasoning behind the need for yield management is the fixed capacity faced by airlines. Airplanes have a fixed capacity (seating) and so will attempt to generate the greatest income from the availability. Furthermore, airlines must also consider that their operations face a high-level of fixed

costs in terms of staffing, fuel etc. Given this, the airline needs to manage capacity to ensure profitability, (Sheehan, 2013). The equation for yield management could be shown as:

The formula above compares the revenue achieved with the maximum potential revenue. For example, take an aircraft with 200 seats, which could each sell for ? 100, adding up to maximum potential revenue of ? 20, 000. However, the carrier has only sold 150 seats at an average of ? 80 (total ? 12, 000 revenue) per seat given early discounts and last-minute offers. Given this, the equation will be:

### Market Segmentation

With the above, airlines have generally been successful given their ability to segment the market with a number of strategies. Firstly, airlines have adapted their strategies to offer a number of ticketing options, allowing them to differentiate prices, also seen in the hotel sector in terms of room offering, Dunbar (2003). One main factor is flexibility; some consumers will prefer the lowest-cost ticket with non-cancellation or change, while some will be willing to pay more for the same seat given the flexibility to cancel/change their booking. Another example could be the timing of flights; some consumers will be willing to pay more for daytime flight than an overnight flight, while again, some consumers will be willing to pay more for a direct flight than a flight with numerous changes, (Shaw, 2012).

However, airlines are able to use connection flights as a way to control inventory by flying consumers to a hub airport, where they can then fill up

other flights capacity. For example, take a journey from London Heathrow to Tokyo; a consumer could either fly direct with British Airways for around ? 900/ return or fly with Emirates, with a connection in their Dubai hub, for around ? 650/ return, with Emirates benefitting from filling up inventory on its flights, (Expedia, 2014) [Online].

Finally, one the most common forms of segmentation is different ‘ classes’ available on flights. While some of the cheaper airlines only offer standard class to focus on the price-sensitive consumers, major airlines have developed a number of classes to differentiate pricing. For example, a consumer could fly economy, premium economy, extra-legroom, business-class and first-class, which all offer a slightly different service, allowing the airline to charge a different price as well as appealing to different customers, (Belobaba et al, 2009).

### Inventory

To airlines, their inventory is their seat capacity, which could be seen as ‘ perishable’ – if the plane departs with empty seats, the capacity is lost and no revenue can be derived. Again, this brings into question a trade-off, between selling advanced tickets at a lower price to ensure a desired ‘ load-factor’, while also saving capacity in the hope that a higher-paying customer will purchase. This brings into question fluctuating demand by time and season.

Yield Management may be used as a tool to smooth the demand pattern, which may see some airlines fares change by the hour/ day, (Alderighi et al,

2012). For example, an airline may increase its business class seats during the week, working hours; given the main demand for this offering will be business travelers, who would be more likely to make the booking during the working week. Furthermore, an airline may also increase its price during peak seasons, given the higher underlying demand, leading to increased revenue, which could then be used to support lower prices in the low season to entice customers. Airlines will respond to increased demand by upping prices; an example could be seen with flights from the UK to Brazil for the upcoming World Cup (Clarke, 2013) [Online].

According to Lufthansa Systems (2014: 1) [Online]:

“ Today’s airline business is evolving into a two-tier industry: global alliances are reaching worldwide coverage and no-frills carriers are gaining market share with a low-cost, point-to-point product.”

No-Frills airlines increase competition

The continued expansion of no-frills airlines coupled with the recent economic depression has combined to dampen demand for major carriers such as British Airways (BA), KLM on some routes, (Alderighi et al, 2012). This move has been supported by new, more fuel-efficient aircraft and also development of infrastructure, which has allowed these low-cost carriers to operate from new ‘ hubs’, (Weiss, 2014) [Online]. For example, in London, the majority of major international carriers such as BA, Emirates, Virgin operate predominantly from London Heathrow, however, the development of Stansted airport has provide greater capacity for Ryanair and EasyJet, at lower costs, while the infrastructure development has allowed the airport to

be a viable option for customers throughout London and the South, (Neufville, 2008).

### Closer Integration to Control

In a bid to counter increased competition and improve capacity efficiency, airlines are continuing to integrate and form alliances, (Merkert, 2012). For example, BA recently merged with Spain's Iberia, given it greater access to South American routes, (BBC Business, 2010) [Online], while also buying smaller regional UK carrier BMI, to take control over its Heathrow landing slots, (CAPA, 2013). Furthermore, BA is also part of the 'OneWorld' alliance, with other airlines such as American Airlines (AA) among others, (OneWorld, 2014) [Online]. Apart from OneWorld, Star-Alliance and SkyTeam are the other major alliances.

These alliances allow airlines to share capacity, reducing the need for direct competition on a number of routes, which could then lower price. According to IATA (2013), customers now demand a 'from anywhere to anywhere' service, which is impossible for one airline to supply efficiently, increasing the need for connection flights and multiple carriers. On their own, few airlines would be able to generate the needed traffic to justify a daily non-stop service; furthermore some airlines may be constricted by availability of infrastructure and flight capacity, (CAPA, 2013). For example, take BA, the airline is currently restricted by capacity at Heathrow airport, which may restrict its opportunity to serve each US route; however through joining with AA in the alliance, BA could offer services a selected number of major US hubs, where AA could then fly customers onto their final destination, (Wu,

2014). This will also reduce the need for major capital deployment into new aircraft from BA, BA could focus these resources on new routes and emerging markets for example.

Research from Brueckner and Spiller (1994), Bailey and Liu (1995) and Brueckner and Whalen (2000) all concluded that consumers put great emphasis on price and network scope. Network scope is increasingly relevant for business travelers as globalization opens up new markets and opportunities, increasing the need for services to a wide range of destinations. Network depth, with a choice of convenient timings for travel, is also important for these passengers, (IATA, 2013).

However, not all airlines have adopted alliances, instead moving on with major expansion plans, with the main example Emirates. The airline has increased its fleet in a bid to expand routes rapidly; however, this has been supported by major capacity at its Dubai hub coupled with a favorable location between the growing African and Asian markets. Furthermore, backing from Dubai, who are pushing to turn the emirate into a major tourism destination are supporting major capital outlays on new aircraft, also allowing the carrier to undercut on prices, (ArabianMoney, 2013) [Online].

## Technology

Carriers can also use technology in a bid to aid yield management. For example, carriers can use a Computer Reservation System (CRS) to track purchases of seats in terms of time, price. As more sales move online and onto carrier websites, carriers will find it easier to track demand for their

flights. With this information, carriers can determine optimum times to sell higher-priced tickets or levels at which to discount to attract sufficient demand to fill the plane. Carriers could also utilize information from Global Distribution Systems (GDS) such as Galileo Desktop, which is:

“ Galileo Desktop is a sophisticated global reservation, business management and productivity system that gives you vast content options, accurate pricing capabilities, and highly capable booking tools.” (Travelport, 2014) [Online]

These systems could be used along with information from Passenger Name Records (PNR) to analyze customer behavior and buying habits to ensure greater achieved revenue. For example, a carrier such as Ryanair may use the data to determine its optimal pricing, given the focus on price for low-cost airlines. This may prevent the carrier from over-discounting on tickets, increasing achieved revenue. The more information that a carrier can collect on customer behavior, the greater chance they have of determining a pricing strategy to achieve the greatest revenue, (Wensveen, 2011)

### Concluding Remarks

From the discussion above, the issue of yield management has gained greater emphasis as the continued expansion of ‘ No-Frills’ airlines and a more price-sensitive consumer have led to greater need to control costs.

In a bid to control their revenue, airlines have adopted a number of methods, with market segmentation continuing to be a main point. Airlines have focused on splitting the market, offering new seat/booking options to justify



a differing price; to add, with the deliveries of the new Airbus A380's, a number of airlines are increasing the top-market offerings such as individual cabins and lay-down beds to increase revenue from the business/first-class segment, allowing them to compete more effectively for the price-sensitive consumer in economy class.

Furthermore, airlines are now concentrating on joint ventures and alliances to further increase efficiency and reduce costs in a bid to maintain yields as increased competition put little potential for price increases. The discussion has shown that these ventures provide great potential for airlines when faced with capacity and infrastructure issues.

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