Increased competition has eroded airline yields and forced them to adopt a new approach to revenue management. This has included the removal of travel and availability restrictions for low fare classes, but this adds to yield erosion. Airlines can offset this by increasing connecting traffic.

Evolving revenue management with the competitive environment

Revenue management (RM), like the airline industry in general, has had to evolve to meet the changing business environment. The rise of low-cost airlines has forced established carriers to change their RM functions. Evolving from the established RM protocols of fare restrictions and advance purchase rules towards a more open process has caused concern for many airlines. RM is the primary control mechanism that manages an airline's pricing strategy in relation to market conditions.

With the changed market conditions primarily driven by increased competitor activity, airlines are adjusting their RM procedures to ensure they attract as many passengers as possible. Airlines are moving away from interpreting passenger demand as demand for discrete fare classes, and are increasingly viewing passengers as market segments that include price-sensitive, connecting, business, leisure and incentive groups.

The evolution of RM will be dictated to a large degree by the competitive environment. Airlines are also taking steps to develop new methods of RM and maintain their competitive edge.

Fare rules

RM was previously based on established fare rules that controlled the purchasing habits of passengers. Advance purchase, where tickets have to be purchased a set time in advance, has been the most popular control mechanism. Cheap tickets are made available up to 21 days before departure for cost-sensitive passengers, with the fare escalating closer to flight departure. Making passengers stay a minimum number of days or stay for a Saturday night were restrictions used to stop business people buying cheap tickets.

The majority of tickets are sold as return tickets. A person could only buy a ticket of a particular fare class if both outbound and return segments were available. This stopped an expensive outbound sector being combined with a cheap return sector, which would have enabled a passenger to pay a lower ticket price. If both segments were not available then the passenger would be forced to buy a ticket in a higher fare class. In general, the lower the ticket price the greater were the rules and conditions that had to be met.

In contrast, business travellers had few or no restrictions, but did have higher tariffs. It was not uncommon for a person making a one- or two-hour economy class flight in Europe to pay between 140 and 1,200 Euros, depending on how far in advance, and in what fare class, the ticket was purchased.

The competitive threat from low-cost airlines has made legacy carriers relax or remove all these fare restrictions. Fares are now often one-way, combinable with all other available fare classes and carry no advance purchase requirements. They are therefore available up to the day of departure. This has caused a significant erosion of revenue to airlines, with carriers like British Airways, Aer Lingus and British Midland experiencing a revenue decline of up to 30%.

Airlines have no option but to respond to the market demands. An airline that maintains the old structure of rules and advance purchase restrictions will still see revenue and passenger volumes eroded through competitive action. Legacy carriers are therefore deciding to compete with low-cost carriers for passengers and evolve their RM strategies, rather than see their passenger base eroded by their own resistance to change.

Price insulation

To protect themselves from decreased revenue, legacy carriers are falling back on their network to insulate them from the effects of competition.

Previously airlines discriminated against connecting, or origin and destination (O&D), passengers due to their lower revenue value, preferring point-to-point, or local, passengers instead. A local or point-to-point passenger is somebody who flies from A to B, while a connecting passenger flies from A to B and then to C. For example, a ZRH-LHR passenger is a 'local' passenger, because they are only flying the ZRH-LHR sector. A passenger flying from ZRH-LHR-LAX is a connecting or O&D passenger, and is flying the first sector (ZRH-LHR) to get to their final destination (LAX). A local passenger generally paid more money, calculated on a revenue per mile basis, than a connecting passenger. However, with the competition for local passengers moving prices downward, it is no longer the case that they generate much higher yields.

Airlines now seek to buffer their flights with as many connecting passengers as possible, removing their reliance on local passengers who are paying less to fly. Since low-cost airlines discourage connecting passengers, it is an area where legacy carriers can protect their revenues.

Airlines are altering their RM systems with a move toward a connecting passenger traffic approach, allowing the carrier to maximise connecting traffic potential.

Companies like Sabre and PROS have both developed connecting traffic systems which offer up to 4% revenue increase for connecting passengers. Airlines may not be able to justify the expense to upgrade to, or purchase, an RM connecting traffic system.

Existing RM systems can be altered to maximise connecting traffic benefit by assigning connecting passengers' fare classes to a higher level of availability. Depending on the RM processes that an airline uses, many connecting passengers are assigned to lower booking and fare classes, which have restricted availability. This is done to ensure that point-to-point passengers, who provide higher revenue, are given priority for seat availability.

A move to a connecting traffic approach requires an airline to change its fares strategy. Many airlines do not recognise the connecting traffic revenue potential that exists on their network, primarily because they have not taken the necessary steps to promote it. Airlines need to focus on their network's connecting traffic potential, while realising that the products they offer are differentiated. If an airline, for example, offers two connecting flights, for example a Madrid-Vancouver service and a Vancouver-San Francisco service, the airline is offering three different products. It is offering the two services listed above, plus a Madrid-San Francisco product.

The product variations create the connecting complexity that RM seeks to solve. Does an airline favour a Madrid-San Francisco connecting passenger, or instead promote two separate point-to-point passengers on each leg? The O&D (Madrid-San Francisco) versus point-to-point flights (Madrid-Vancouver and Vancouver-San Francisco) debate generally reverts to which generates more money for the airline.

If demand exists to sell the two point-to-point sectors independent of each other, the revenue realised is generally higher. If there is only demand for one point-to-point sector then the connection option generates the greater revenue. Giving preference to connecting passengers benefits the airline as demand and seats are satisfied on more flights.

As stated, airlines can produce the connecting traffic effect by moving connecting traffic into higher revenue buckets (higher availability), removing the need for tailored connecting traffic RM systems. "We have moved our connecting passengers into higher fare classes," says Szabolcs Szentes, manager of revenue management at Air New Zealand. "Our existing system is not capable of fully connecting traffic, but we can achieve the same effect by moving connecting classes higher up in the availability chain. This ensures connecting passengers now get last seat availability on all flights. Previously we held the last seats for full-fare local passengers that may or may not show up. The effect this had on our upline route performance was significant, since we were starving long-haul services of passengers and flying lots of empty seats. Passenger yields, as expected, declined due to the lower revenue levels that are generated, but overall system revenue was up. We made these changes several years ago, simultaneously taking the decision that we would measure our performance on revenue per available seat-kilometres (RASK), and not on yield. Our RASK increased with the move to connecting traffic preference, while our network profitability has also improved considerably. Ensuring complete availability required us to align the connecting fare classes to economy or first class. This was relatively straightforward and we have benefited as a result."

Customer differentiation

A lot of the drive by network carriers to focus on connecting passengers is influenced by the steady decline in the value of point-to-point passengers. Airlines previously differentiated passengers into different revenue bands by offering cheap tickets with high restrictions, and expensive tickets with few restrictions. The rationale was that a balance existed between the passenger's willingness to accept poor flight times/restrictions and their desire for a cheaper ticket. This was termed the disutility of service. Airlines therefore differentiated based on the type of fare product a passenger wanted to buy.

These methods of differentiating customers are now being removed. This requires changes in RM processes to reduce the yield erosion that will occur. Business passengers are now able to secure a cheap ticket with no restrictions close to departure; a scenario the disutility model negated. This has occurred through several changes.

The competitive threat posed by low-cost airlines required a review of pricing structures to ensure established carriers remained competitive, while the internet increased the availability of cheap tickets.

Many carriers have responded to this by developing fare structures where most fare classes have no significant differentiation



Air New Zea;and is one airline that has adapted its revenue management system to capture more connecting traffic by moving connecting fare classes higher up the availability list. The result has been to increase unit revenue per available seat-kilometre and network profitability.

beyond price. That, all fares are made available on a first-come, first-serve basis. With fares easily comparable, a passenger can access the fares offered by several airlines for any route, and then select the cheapest fare. Many internet fares operate on a highly simplified structure that is based on a one-way system. This generally results in significantly changed passenger buying behaviour.

"The competitive environment has resulted in quite significant change to passenger behaviour on our domestic network," says Adrian Hamilton-Manns, vice president of alliances, network planning and revenue management with South African Airways. "More passengers are able to access discount fares closer to departure date. This results in our established models of class differentiation and demand not being representative of the new environment. Previously we viewed each fare class a separate and discrete product with variable demand. The removal of many fare restrictions now means our fare products are differentiated on price alone. Passengers' purchase behaviour within this environment therefore changes. Bookings are received closer to departure, since the incentive to book early to secure a cheap seat has been removed. This exposes airlines to a greater risk of distressed inventory (unsold seats), encouraging them to reduce fares to offset this risk. It becomes a vicious cycle if it is not carefully controlled."

Revenue dilution

Why have airlines removed so many barriers, and what can RM do to reduce the risk that airlines face? The combination of the internet and competition from other carriers with different pricing approaches has primarily necessitated change. "Network airlines have very few options available to them," says Szentes. "They could remain with their existing fare structures and let the competition carve out large chunks of their business, or they could respond by matching the conditions and prices of their competitors. Moving to a new fare structure will result in airlines losing revenue. This allows them to protect market share, however, while buffering them from the worst effects by leveraging their network. The point-to-point market, while generally of higher revenue, is also limited in size. The current profit warnings from some European and Australasian carriers show that even these highly efficient airlines are struggling to stimulate their local markets. The removal of fare rules, and the general matching of prices and conditions, will result in lower fares for certain market segments."

The role that RM has in the current market is therefore significant. "The effective application of RM practices can certainly add 2-3% in revenue to an airline," says Hamilton-Manns. "Controlling the availability of cheap seats in the absence of pricing controls falls to RM. Airlines can use either a dynamic approach, where seats are made available based on a constantly changing demand dynamic, or through established guidelines. While the dynamic approach is closer to established RM procedures of demand dictating supply, the guideline approach can be effective.

"Using guidelines, airlines can specify how many seats to make available at any time based on what they want to see on a flight. For example, the airline may programme the RM system to close cheap seats 5-12 days prior to travel for business flights to reduce the probability of business passengers securing cheap tickets," continues Hamilton-Manns. "While this may also result in flights departing with empty seats, it falls to the airline to determine what level of user intervention/guidelines they want to employ."

Modelling the revenue impact of passengers who buy the lowest available fare, either through minimal fare restrictions or because of price sensitivity, is a now a critical aspect of RM procedures. Airlines need to know what they are losing in revenue and what they are gaining in volume. "Generally, as you decrease fares you stimulate demand," says Hamilton-Manns. "More people are able to purchase a ticket as the price is now at a level that is economic for them to travel. This results in higher passenger volumes, which, along with reduced cost of selling, offset the revenue loss experienced. Generally accepted models of spill and recapture show that as you move towards a non-controlled pricing structure 10% of your point-to-point revenue is at risk of dilution. This can be limited if market stimulation occurs, but if the market is mature it will not offset the losses experienced. Mature markets require a more detailed analysis of their booking patterns to remove low fare seats at the times when business passengers are more likely to be booking."

The modelling of booking patterns has been evaluated by many airlines as a partial solution to the issue of fare dilution. "Some airlines measure bookings for business flights not just at a days-before-departure level, but at specific times of the day," says Gina Morelli, manager of revenue management research at American Airlines. "Monitoring the type of booking that is made and the time of day it is made yields some valuable information about booking patterns that airlines can exploit. The majority of leisure reservations occur from 12:00-14:00, coinciding with employee lunch breaks. The majority of late minute bookings occur at 10:00-11:00 and 15:00-16:00. Controlling the fare types that are available during these periods can assist in reducing the dilutionary effect of new fare structure devoid of fare rules. Airlines need to optimise their own booking profiles if they wish to explore this option, but it

offers benefit. There is not a single RM approach that will offset the risk of fare dilution, but it is a combination of small practices. In the current environment airlines cannot afford to ignore any avenue, regardless of the return."

Market changes

With the changes in the airline industry mirrored in the RM processes, many airlines, and the RM industry in general, are still adapting to the new environment. Significant research resources have been devoted to addressing the RM issues, and developing new approaches. "RM has evolved into dual areas where passenger demand is identified within two separate structures," says E Andrew Boyd, chief scientist and senior vice president with PROS Revenue Management. "The two structures are priceable and yieldable demand. The main difference between the models is passengers' willingness to pay a higher fare when lower fares are open.

"A yieldable model of demand is where a passenger is specifically interested in a certain fare product and will purchase that product even when a less expensive product is available. This has previously been achieved by fare rules and minimum stay requirements. A priceable model of demand is where high revenue passengers are primarily concerned with price and will purchase a low revenue value ticket because it is available and no restrictive rules are applied to discourage the purchase," explains Boyd. "Under the priceable demand model there is a shift in the purchase habits of high revenue passengers. Rather than wanting to purchase a particular fare product, the passenger becomes someone who is willing to pay a higher fare, but can take a lower fare if it is available. This has serious implications for an airline's revenue generating ability."

These market changes have signalled large changes in the way RM is performed. Airlines are now having to re-align their procedures and pricing structures to provide freedom to the passenger. Disutility models, advance purchase restrictions and class segmentation no longer apply to O&D passengers.

Understanding yieldable and priceable options is important in the current RM environment where established market segmentation procedures are being removed. Yieldable models believe that passengers are interested in a certain fare product and will buy this product, even if cheaper alternatives are available. This model is now being replaced. Priceable models identify passengers as price sensitive and willing to purchase fares at a lower level than they are willing to pay. "It is important to realise that priceable demand is not a function of how a carrier does business, but of how passengers behave in general," says Boyd. "The rise of low fare carriers and the growth of internet bookings are both working to encourage priceable behaviour. While carriers cannot control passenger behaviour, they can recognise changes in behaviour and adapt accordingly. Revenue management models that account for priceable behaviour are an important part of this response."

Differentiating between priceable versus yieldable markets is therefore the final step in adapting RM processes. "Pricing structures need to be altered where required to meet the market requirements," says Szentes. "However, airlines do not need to overreact. If a market is not showing a determined move to a priceable structure then there is no need to establish one. Maintaining fare conditions and other control mechanisms in markets that can sustain this approach is the best way to limit overall risk. Any airline must examine its market conditions carefully before embarking on these types of changes. If the competitive landscape requires the changes then they have to be made. Airlines should maintain the majority of controls to prevent excessive dilution in areas where competition does not necessitate a move to a priceable structure."

Summary

Airlines invest in RM solutions to maximise their revenue potential. Airlines need to adapt their RM operations to reflect the new environment that they face. Few airlines are immune to the threat of low-cost airline competition. Even Singapore Airlines will shortly face a low-cost rival on medium-haul sectors. Airline RM is now adapting to meet the new competitive landscape.

Network carriers are falling back on connecting traffic to insulate them from the worst effects of yield erosion, while also competing aggressively for local passengers. The change in focus, coupled with development of more sophisticated methods of viewing and managing the market is designed to ensure the survival of the airlines and the protection of their revenues. Whether RM systems will be able to deliver this requirement remains unclear as the competitive environment becomes ever more dynamic and competitors become more aggressive. AC