There is a new wave of low-cost long-haul airlines breaking the mould of the traditional network carriers. Operating with a different philosophy and a different cost structure, they also have a different approach to pricing. Are the traditional RM systems capable of supporting this new breed or are new solutions required?

RM solutions for low-cost long-haul

Most new long-haul airlines have avoided the traditional strategy of using expensive first and business classes to subsidise the economy cabin with deeply discounted fares. The strategy of this new breed of airline is to offer a single-class product and compete on price with the aim of achieving a high load factor. These airlines therefore need to be careful with price management, and the systems to achieve this are examined.

The challenge for long-haul low-cost carriers (LCCs) is to forecast likely demand, usually in a single cabin, at a price point depending on the route and seasonal factors, unlike the traditional system, which segments the market and sells distinct products to each segment.

New LCC yield management systems can forecast price-sensitive demand as the date of departure approaches. Booking late to get a bargain no longer applies. LCCs want to get early bookings, so they close off lower fare classes as seat inventory is sold. This is the same revenue management (RM) strategy that has been followed by short-haul LCCs.

The other new dimension for revenue managers to deal with is competitor data. There are several tools available that can feed the yield management system with competitors' pricing. This provides more clarity in terms of opportunities to exploit market gaps or alerts to deep discounting that may adversely affect market share.

Differences in RM for LCCs

Yield management has a long history. Airlines realised they could fill a single cabin more profitably if they could find a way to segment the market according to willingness to pay. Demand patterns vary by time of day, day of the week and seasonality. 'Fences' were used to differentiate these segments or products by introducing restrictions on travel, such as advanced purchase, minimum stays and limited flexibility.

The LCC revolution has changed the rules. Price fences are removed as a marketing tool to compete against the traditional network carriers. There are no Saturday night or minimum stays and one-way pricing, for example. The only segmentation possible is through the time that the booking is made and the flight that is chosen.

The internet revolutionised distribution channels. Most bookings for LCCs are done direct by the client, and prices will generally go up the longer the client delays purchase. Buying in advance is cheaper because the new RM philosophy fills the cheapest fare classes first, and the most expensive last.

Traditional RM systems allowed low fare classes to be available up to the date of departure. If airlines used this RM strategy now, gains in higher seat factors would be offset by lower yield mixes, through the higher yield customers simply buying the cheapest fares.

New RM systems forecast demand patterns, and suggest when lower fare classes should be closed off and higher fare classes should become available. This requires a lot of good historical data or a good model of expected demand.

The system will therefore need to gather information about both demand and prices paid, to accurately gauge what will happen to demand if the available fare alters. If the available fares are too low the flight will fill up too early with a low yield mix. If pricing is too high the airline risks turning away demand and the flight departing with empty seats that could have been sold at lower fares that would have contributed to total revenue. Empty departing seats are instantly perishable. Demand is price elastic. The challenge is one of price optimisation.

The yield management system is not the whole answer. Companies also need to be systematic in communicating the knowledge of unusual or unexpected demand patterns between sales and RM departments. Examples are one-off events in cities that increase demand.

New generation RM systems

Airlines need to react quickly, since the rules of their business environment are changing daily. It is hard to abandon long-established procedures that may have led to excellent results in the past, but, without exception, the most profitable airlines rely on RM systems to control seat inventory, and owe much of their success to automated inventory and pricing control. Software exists to help companies avoid missing these changes in demand, which can increase the average revenue per departure by 10-14%.

A growing number of yield management solutions specifically cater for the LCC market. Navitaire is a strong player with its SkyPrice solution. Almost 30 airlines use the Navitaire yield management tool, including the new Russian LCC airline Sky Express, usually in conjunction with its Open Skies and the new .NET New Skies booking and reservations system. Navitaire claims that SkyPrice can improve revenues by 5-7%, and sometimes by up to 10%.

SITA is another large supplier of yield management tools. More well known for its traditional network carrier solutions, it is developing a pure LCC version without some of the complexities that LCCs do not use. SITA aims to sell to the LCC market, including those airlines using independent reservation systems. These include some Open Skies customers that want an alternative to SkyPrice.

One of the well known airline IT suppliers is Sabre. AirMax is its yield

Yield managers can establish forecasts of demand for particular markets within the Aviator yield management system. Actual bookings are measured against this expected demand. Any lag or early surge in demand are measured and alerted to analysts. TAFF Linhas Aereas is the latest LCC customer for this new technology.

management solution, and is used in many larger airlines like THY Turkish Airlines. Its LCC capabilities are being developed to match requirements.

Lufthansa Systems is also following this LCC trend. It recognises that even major airlines need to respond to LCC market activity, and want their yield management systems to do likewise. Lufthansa is adding a dynamic price engine (DPE) to its ProfitLine RM portfolio, to allow traditional carriers to compete with LCCs selling un-segmented and unrestricted fares. The DPE responds to this situation with a rule-based approach that assesses the type of booking being made, not only how many days before departure it is being made.

The DPE will recommend closing lower fare classes based on these rules. The channel of distribution *(see the future of web-based applications, Aircraft Commerce, August/September 2006)* has an effect on which yield management strategy is employed. Bookings through the global distribution systems (GDSs) provide less information than a booking made through the internet directly on an airline's website. So Lufthansa Systems claims the DPE will still allow an airline to segment its market, even though the LCC strategy seems to be in opposition to this approach. The DPE can take up to nine months to be implemented, mainly to connect to the distribution channels. The segmentation approach marks out Lufthansa Systems as a different solution. Designed really for traditional network carriers, Lufthansa Systems claims it will offer a leaner version for smaller carriers in the future.

While there are other well known solutions, such as PROS, for the smaller airlines such as start-ups and LCCs, there are less expensive but equally effective solutions. One is from the young and dynamic airline IT supplier, MainTrack.

"Our LCC yield management system, supplied over the web as a hosted application service provider (ASP) solution, is already being used by airlines around the world," says Marcel Kalsbeek, co-founder and managing partner of Maintrack. "The product, Aviator, from Resource and Revenue (R&R) Management in Australia, integrates with our web-based reservations software, ReservaWeb, but can be offered with any booking system like some of the older legacy products. Aviator is specifically designed for the LCC market and is easy to use. Its functionality can be phased in. The more sophisticated automated optimisation mathematics can be activated after the airline has gained some experience and quality booking data. We also deliver a 'hand-holding' service for analysts in terms of tuning the forecasting methodologies and tailoring the application to suit each client. This is an on-going lifetime service and is valued by many clients. The ASP business model means there are minimal upfront costs and no on-going IT costs. There is no need to build a large IT department to manage our applications; we do that as part of the service."

Aviator is a good example of how new technology RM software works. Normal passenger reservations activity updates records held in the reservations system, such as ReservaWeb, OpenSkies from Navitaire or one of the large host companies like Worldspan, Sabre or Amadeus. Each night inventory data from the reservation system updates the Aviator RM database. This process is automated, so that Aviator is updated at the start of each day. Aviator provides a suite of reports and graphs designed to help reservations controllers increase revenue on flights, as well as invaluable information to management from sales, finance, marketing, and scheduling. The reports and graphs are made available through one standard selection screen. Each report can be selected using a variety of criteria such as flight numbers, boardpoint and offpoint, date range specifications, segment or leg displays, cabin or class displays and 'as at' dates.

Inventory reports show a summary or detailed view of bookings for a range of future flights, and include the total seats, seats sold and waitlisted, and seat availability figures. The reports vary slightly depending on whether they were selected by leg or segment. They can also be selected at the class level, giving more detailed information for each class on each flight. The colour graph option of these reports provides a quick way to visually analyse a series of future flights.

The booking pace suite produces reports and graphs *(see chart, this page)* that show the change in bookings received for a flight leg or segment. This allows controllers to quickly detect a change of demand for a flight or series of flights when there is still time to take appropriate action. The booking pace reports can also help controllers set overbooking levels with greater accuracy than ever before. Incoming revenue and progressive flight yield data is also available from booking pace reports. Flight analysts review the effect of current strategies in maximising flight revenues.

The group analysis report is essential for airlines with group traffic, such as tour groups. This report helps controllers manage group demand to increase revenue for the airline. The graph option provides an easy-to-view summary of a range of selected flights that highlight the large groups to the controllers. This report can also be used to find low demand flights which can be offered as alternatives to waitlisted groups. Group materialisation reports allow analysts to track the turn-up rate for group bookings. Overbooking policies can be fine-tuned with this information.

Aviator provides a wide range of corporate management reports and graphs, including an inventory summary showing the number of flights, available capacity, seats sold and the load factor.

Aviator's Highlighter function is a simple pro-active alerting system. LCC revenue optimisation rules are used to calculate which flights need analysts' attention.

Revenue summary shows the available capacity, the number of revenue seats sold and flown, the total number of passengers flown, the revenue sold, the actual revenue flown and the average fares.

Functionality for start-ups

For start-up customers, Aviator's Highlighter is a good starting point. Highlighter *(see chart, this page)* scans through flights in search of revenue opportunities. It quickly analyses flights, checking for waitlists, leg and class imbalances and other indicators which need controllers' attention to maximise revenue. Aviator then displays flights in a colour-coded calendar, which makes it easy to see where an airline's RM efforts are most needed. By helping the revenue controllers to focus their attention on those flights with the most revenue opportunities, it maximises their productivity and the airline's revenue.

Highlighter is highly configurable and is usually tailored to meet the needs of each airline client. Revenue opportunities for one airline may well differ for others. Highlighter will be tuned to search for the revenue opportunities that affect an airline. It can be used as a simple optimisation tool prior to the installation of forecasting or sophisticated optimisation, and can be configured to scan through flights, and prompt users to close or open discount allocations on specific flights.

Forecasting logic is critical to RM success, particularly for the new type of LCCs. A common problem with highly complex forecasting models is that they do not produce forecasts that flight analysts want to use. They are often so complex that flight analysts are unable to understand or properly modify them. As a result, when forecasts seem inaccurate, analysts often ignore the forecasts altogether and control flights manually. Aviator presents forecasting concepts in an easy-to-understand format and, if forecast modifications are needed, they can be easily made by Aviator users. Forecasting options allow analysts to use historic data from this year or last year and complex unconstraining logic is presented in an easy-to-modify graphical view. Analysts can use special forecasting options on specific flights and destinations. Aviator can forecast new flights or classes with ease, and cope with schedule changes and supplementary flights. Marketplace activity such as added competitor capacity can be quickly factored in using Aviator's forecast modification tools. Its core forecasting logic has been in use since 1998 and is robust, powerful and easy to work with. Aviator's optimiser uses these forecasts to provide inventory recommendations that maximise revenues.

Aviator flight optimisation is used to significantly increase flight revenue. With Aviator a number of optimisation models can be selected, relying on either expected marginal seat revenue (EMSR) *(see systems & techniques to battle the decline in long-haul yields, Aircraft Commerce, October/November 2006, page 41)* or low-cost logic techniques.

Aviator EMSR optimisation works best for airlines with traditional fare types, which include rules such as minimum stays, advance purchase periods and booking the whole itinerary in one class. Aviator low-cost optimisation works best for airlines that sell each leg of an itinerary separately, allowing passengers to get a discounted fare on one leg, while paying the full price on another. Consumer behaviour is modelled with an expectation that lower fare classes, if available, will sell faster than higher fare classes. The concept of higher fares for bookings made close to the flight departure date is included in the optimisation process and can be adjusted by each airline for each route or flight number. Aviator optimisation uses current sales data, trend demand data, and business logic to accurately determine exactly when discounts should be offered, and on which flights.

Aviator can allocate the right number of discount seats so as to achieve the most profitable balance of load and yield on each and every flight. These optimisation decisions are re-calculated and checked nightly for all future flights.

Inventory allocation changes are sent through to ReservaWeb, or any other booking system, to immediately update flights and enhance the airline's revenue. For smaller airlines, R&R recommends that airlines do not install optimisation immediately, and start instead with reports and Highlighter, moving on to forecasting and optimisation once they have a clear idea of the models that enhance revenues the most. R&R offers to assist the airline with these decisions.

Maximising revenue

Long-haul markets present an opportunity for new entrants. As discussed *(see Is low-cost long-haul economically viable?, page 27)* long-haul premium-class fares are high enough for start-up airlines to enter the market by offering discounted premium class fares. Low fares stimulate demand, but new entrant long-haul airlines are also able to achieve lower unit costs per available seat mile (ASM). "We are a young airline but growing fast," says Jeff Pollack, head of revenue management at Maxjet. "Our strategy is to offer an all-business-class product across the Atlantic, using 767-200ERs. We have a mix of configurations, but most aircraft have about 100 sleeper seats. We use the SITA RM tool integrated with our reservations and booking system, hosted by Worldspan. We have a home-grown internet booking engine for direct sales on our website, but a large chunk of our business comes through GDSs. Our RM

Maxjet currently utilises the yield management solution from SITA. It supplements this functionality with manual data manipulation to accommodate LCC business logic.

tool uses a largely traditional modelling of yield.

"We use an LCC module within the system but it is limited," continues Pollack. "We are in discussion with SITA about improvements. At the moment we have a simple gating based on load factor and days before departure. Gating is the process whereby we close out the lower fare classes if we are above a certain load factor by a certain date. We only have six booking classes and a fairly simple pricing structure. We end up extracting data from Worldspan and our direct bookings, and dumping it into MS Excel and MS Access. We have a low enough volume to allow us to do this data manipulation and analysis manually. We operate 18 flights a week, rising to about 36 by the middle of 2007.

"Our load factor in April was 75.5%. While it fluctuates somewhat during the year, we still maintain a relatively high load factor, partly because our business traffic reductions in the summer are offset by dramatic increases in leisure traffic at the same time," adds Pollack. "This counter-cyclical offset is good for Maxjet. Our overall objective is always to maximise revenue, but we also aim for the highest load factor. A large part of that is governed by our desire to have as many people as possible try flying with Maxjet.

"The yield management task at Maxjet is similar in many ways to any single-class LCC airline," continues Pollack. "The main difference is that we get a lot of bookings from traditional distribution channels like tour operators and travel agents, so our booking patterns can sometimes be unpredictable. We also provide connecting flights at some of our destinations, so while we do not interline we have to take account of the overall flight profile of the passenger and provide tools for planning these connections. We also have to consider cargo revenue. So taking all these factors into account, we are very different from short-haul LCCs like Ryanair or easyJet."

Using competitive data in RM

One of the biggest issues, and indeed opportunities, for new LCC yield managers is competitor data. There is a growing mass of data freely available to airlines as a result of the growth in direct sales channels such as the internet. This makes electronic pricing data readily available and tools are evolving to harvest this data *(see Systems & techniques to battle the decline in long-haul yields, Aircraft Commerce, August/September 2006, page 42).*

"Our biggest issue at Maxjet is the ability to pull competitor pricing into our yield management system," says Pollack. "This would provide a time saving as we currently do this manually. The biggest improvement in the long run would be the ability to spot opportunities when competitors make large increases in their available fares, or to warn us when they drop their fares and defensive pricing is required. A competitor pricing tool like QL2 or Infare Data would tell us when we are operating in a market that has little price pressure and would allow us to increase fares. Or it would warn us when a competitor is embarking on a deep discounting campaign. This is time-critical, and we cannot wait until our yield management system starts to pick up the trend."

Additional support for LCCs

The first line of support for airline yield, especially for long-haul LCCs, is to implement one of the many RM systems. An additional support mechanism is to add cross-selling tools to supplement the revenue generated from each seat. This includes charging passengers extra for a seat with more legroom, to select and reserve a seat or booking additional products such as hotels and car hire. This is a big opportunity for long-haul LCCs.

Dynamic packaging solutions *(see Exploiting ancillary revenue streams, Aircraft Commerce, December 2006/January 2007, page 29)* enable airline customers to book hotels, car hire, events and insurance together with the flight. Ancillary revenue can be as much as $50 per passenger, which is significant compared to the net profit generated by the seat itself. LCCs are putting great pressure on traditional tour operators. Consumers are moving to more à la carte leisure purchase as a result. This has helped the online business overall since the LCCs are selling primarily online. Expedia UK and others have seen a dramatic surge in demand. Consumers are already receptive to the package concept, and dynamic solutions ensure they can get the best price. As the technology evolves and inventory becomes easier to search, dynamic packaging could become the norm in Europe, especially for long-haul travel.

Summary

The long-haul market can support the LCC model, but needs careful attention and a strong RM strategy. The airlines that will survive and flourish will note the success of their short-haul cousins and implement effective RM tools that are tailored to the LCC environment. The tools required will need to be model price-driven demand, and be able to accept and process competitor price data quickly as part of the recommendation to change fares. As Maxjet shows, when you are small, most of this can be done manually with experienced revenue managers and a simple Excel spreadsheet. But as the network grows software is needed to replace the human. Finally, part revenue can be supplemented with streams from hotels and car hire. AC